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Relationship Between Admission Criteria and Program Completion in a Radiation Therapy Program

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MA, Strayer University, 2010

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Project Study Submitted in Partial Fulfillment

of the Requirements for the Degree of

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Abstract

Poor completion rates in the radiation therapy associate's degree program offered through a community college did not meet the standards set by the college and damaged the program's reputation. The relationship between admission criteria and program completion was not known. The purpose of this study was to determine if there were any relationships between the admission criteria (GPA in prerequisite courses, interview scores, writing sample scores, and preadmission testing scores) and students' completion of a radiation therapy associate's degree program. This correlational study used 2 stages of Tinto's retention theory: (a) recruitment and admission to college and (b) pre-entry assessment and placement. Retrospective data, collected from an accredited radiation therapy program offering a 2-year degree, provided a sample size of 70 anonymous student records. The point biserial coefficient was used to analyze the data. The results yielded a significant, moderate, positive relationship between the interview score and student completion. No other significant relationships were found. The professional development program that was derived from the study sought to teach program directors about interview skills and tactics. The ability to identify at-risk students in the admission process is expected to contribute to social change by improving completion rates; improving satisfaction among students, faculty, employers; and ultimately improving the quality of patient care.

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Dedication

I would like to dedicate this study to my husband, for without him I would have not accomplished this degree.

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I would like to thank my chair Dr. Marianne Borja for providing me with the support and wisdom needed to complete my degree. I would also like to thank my entire doctoral committee who provided their expertise and support throughout this process.

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Section 1: The Problem

Introduction

Limited data are available on the admission criteria that support the decision making process in choosing successful candidates to enter radiation therapy education programs. This study examined the relationship between admission criteria for a radiation therapy program and program completion. The study could provide programs with a solid and supported basis for accepting and denying students admission to radiation therapy education programs in an effort to increase completion rates. This section covers the following topics: the definition of the problem, the significance, the evidence of the problem locally and in the professional literature, the research questions, literature review, implications for social change, and the summary of the local and national problem affecting radiation therapy education programs that offer 2-year associate's degrees.

Definition of the Problem

The local problem prompting this study involved the low completion rates of the radiation therapy education program, which will hereafter be referred to as the "program," offered through a community college in the eastern United States. Despite a selective admissions process, the program consistently experienced low completion rates. For the graduating class of 2013, the completion rate was 54%; the 2014 class had a completion rate of 82%, and the graduating class of 2015 was 69%. Low completion negatively affects the program's reputation and does not meet the standards set by the college and monitored by the national programmatic accrediting body, the Joint Review

Committee on Education in Radiologic Technology (JRCERT). Table 1 illustrates the completion rate for the past 5 years regarding the Program.

Table 1

Program Annual Completion Rate

Graduation Class	Percentage 100%
2011	100 (14/14)
2012	69 (11/16)
2013	54 (7/13)
2014	82 (9/11)
2015	69 (11/16)

Note. Adapted from the Radiation Therapy Program 2015 Outcome Assessment Plan (Interim Report, 2015)

According to the JRCERT (2017), the benchmark for completion set by the college is 75% of students admitted should complete the program. The program effectiveness data are collected and published annually by the JRCERT. In 2012, the national completion rate for 19 programs offering associate's degrees in radiation therapy averaged 65% and ranged from 60–86%. In 2015, the national completion rate for the existing 18 programs averaged 79% and ranged from 46–100%.

The mission of the educational program is to prepare qualified students to become competent and compassionate radiation therapists. The program began in 1975, in partnership with an area hospital. It was successful until 1998, when the final class was admitted, and when the program went on hiatus due to lack of enrollment. In 2000, the community of radiation therapy institutions in the area came together and created a consortium fund to revive the program in order to fill vacancies across the state. The first graduating class after the program was re-implemented received their degrees in the

summer of 2003. In 2008, however, the program lost accreditation. Since May of 2008, the program has been under new leadership and has managed to regain and retain accreditation from the JRCERT.

Currently, the radiation therapy program uses a selective admissions process that is heavily weighted on a student's GPA in the prerequisite courses. The remaining qualifications are based on a point system that includes scores from the interview, writing sample, and preadmission testing.

There appears to be a gap in practice between students' admission criteria and completion of the program. Due to the nature of the field of radiation therapy and the small size of the programs offering degrees in this field, there are limited research data on identifying risk factors affecting completion rates, prior to entering a program or college environment (Schneider-Kolsky, Wright, & Baird, 2006). There is an abundance of research on completion rates, in general, that focus on student completion once the student has been admitted to the program or college. But there is a lack of research on student completion in radiation therapy programs that would support stronger admission criteria.

Student completion rates are a common problem that plague many colleges and universities, particularly in health science programs. According to the literature, colleges and universities in the past have focused on student recruitment rather than student completion. With more recent emphasis on accountability, financial stability, and sustaining academic programs, the focus has now been placed on student completion (Fike & Fike, 2008). Accountability has been commonly measured by completion rates

(Roman, 2007). All programs have limited openings and are negatively affected by students who fail to complete the programs.

Rationale

Evidence of the Problem at the Local Level

Faculty, administrators, and clinical preceptors have been concerned about the completion rate of the program (Dean, personal communication, April 27, 2017). The clinic aspect and the educational aspect do not always coincide. Some preceptors feel that students do not fully know the expectations of the field or the program prior to beginning the program. "The physician and staff of radiation therapists at this center feel that extending the shadow period to a full week would give potential students a more accurate picture of what to expect" (Chief Radiation Therapist, personal communication, December 14, 2016).

The admissions process has been a constant battle between the requirements of the college administration and the qualities expected by the clinical preceptors. Practicing radiation therapists feel that professional judgement should be used in the admissions process without a structured assessment. "The admissions process is difficult and challenging. Somehow gauging a candidate's ability, personality, and willingness to take responsibility for learning needs to be introduced into the admission process as to select the best candidates to be admitted in the program" (Clinical Coordinator, personal communication, December 12, 2016). Many of the preceptors are concerned with the lack of soft skills and the ability to think critically, which relates to the current admissions process through the use of standardized testing.

> I feel with advancement of computers and the use of them in Radiation Oncology that the students have become lazy and complacent when it comes to thinking for themselves. Some of them are unable to critically think and problem solve (Senior Radiation Therapist, personal communication, December 9, 2016).

Increasing the admission rate, may come at the cost of lowering of program standards, by accepting less than qualified students into the program. This practice yielded more students but also increased the attrition rate and decreased the national board passage rate. "I can relate back to when I was in school, no one had ever failed the registry until they scaled back the entrance requirements to attract more students, then the fail rate and the incomplete rate increased" (Department Manager, personal communication, December 8, 2016). Student completion as a measure of accountability is often used to assess a program's success in both community colleges and 4-year universities. The programs are held accountable to college administration and accrediting bodies, such as Middle States and the JRCERT. Programmatic accreditation is essential to the success of radiological programs in the United States, and attaining such accreditation is often considered a measure of quality (Britt & Aaron, 2008). The JRCERT has developed benchmarks to evaluate the success of each program. It collects program effectiveness data yearly to assess each program. These effectiveness data include: (a) 5-year average credentialing examination pass rate of not less than 75% on the first attempt; (b) a 5-year job placement rate of not less than 75% within 1 year of graduation; and (c) the annual program completion rate (JRCERT, 2013).

Data are collected on an annual basis. However, the accrediting body offers no details on the factors that affect program completion rates. Individually, programs respond to the accrediting body regarding unmet benchmarks, but that information is not researched further or shared within the discipline. There is a need to research the factors affecting student completion of the radiation therapy program at my local community college, because there is a lack of research in this area to support (a) the selective admission process and the (b) criteria involved in making the selections. This problem is shared by numerous radiation therapy programs offering associate's degrees. As stated previously, there are limited seats available within radiation therapy programs offering associate's degrees; therefore, unsuccessful candidates greatly affect program effectiveness data of all programs.

Compared to 4-year universities, community colleges have different admission guidelines. In general, the goal of community colleges is to accommodate the "community," which is evident when reviewing the college's mission statement. The statement reflects the college's commitment to provide a high-quality education that is both accessible and affordable. In addition, many community colleges have an open-door admissions policy.

Evidence of the Problem from the Professional Literature

The major area of focus on student retention at the community college level appears to be based on students' performance and risk factors while enrolled in the program. The current research is limited on identifying common admission criteria and student completion for radiation therapy education programs. There is a great need for

further research into the relationship between admission criteria of radiation therapy education programs and student completion in an effort to select successful candidates. The evidence of the local problem is supported by the statistical data presented by the national accrediting body. In 2012, the average completion rate of 65% for the 19 associate's degree programs was 10% below the 75% benchmark (JRCERT, 2013). Many researchers have conducted literature reviews and suggested further research, however, little research is available on the relationship between student completion and admission criteria in the field of radiation therapy (Schneider-Kolsky et al., 2006).

In various health science disciplines at the community college, selective admissions criteria are used for student selection because there are more applicants than there are seats available. Additionally, students are assessed through the selective admissions process for their academic potential and interpersonal skills. With the sudden shift in the economics, more applicants are seeking to enter the field of healthcare to better their financial situation. In 2009, the United States unemployment rate rose to 8.5%, which was the highest since 1983 (Gomstyn, 2009). The types of applicants applying for healthcare programs were those making a career change, which defines the nontraditional student (Streitfeld, 2009). Community colleges across the nation saw a sudden rise in student admissions and to attract more students they offered financial assistance through scholarships and by freezing tuition (Streitfeld, 2009). The appeal of community and technical institutions is the shorter time it takes to obtain a degree or certificate.

There was an increase in qualified applicants, which validated the use of selective admissions to distinguish the most qualified students and justify candidate acceptance. The programs accredited by the JRCERT are bound by selection criteria based on legally defensible data, however, the JRCERT does not provide a set of specific admissions criteria for programs to use (Ochs & Adams, 2008). Common admissions criteria for radiation therapy programs include GPA, personal factors, personal interviews, student empathy, math and science grades, and academic rank (Ochs & Adams, 2008).

The purpose of this study was to determine if there were any relationship between admission criteria (GPA in prerequisite courses, interview scores, writing sample scores, and preadmission testing scores) and completion of an associate's degree in radiation therapy. The results of this study may allow the program director to make better admission decisions, which in turn may contribute to social change by (a) improving completion rates, (b) improving satisfaction among students, faculty, employers, and (c) ultimately improving the quality of patient care.

Definitions

Community College: Community colleges have historically been referred to as junior colleges. They provide the community with an affordable alternative to four-year universities. Community colleges offer students 2-year associate's degrees and certificates in many areas. Healthcare programs offered through community colleges are very appealing to students because they offer career training in a short period of time (Fike & Fike, 2008). The majority of community colleges have an open door policy and strive to meet the needs of the community (Spellman, 2007).

Completion Rate: Statistically, student completion rate is defined as the number of students graduating the program divided by the number of students who initially entered the program (JRCERT, 2013).

Independent Variables: Common predictors of student success in the typical college student include: grade point average (GPA) and standardize testing (Sparkman et al. 2007). The following describes the four independent variables gathered from the Program:

1. GPA of prerequisite courses – math and science related courses
2. Interview score – interview questions, behavior, appearance, and promptness are given a numerical value
3. Pre-admission testing scores – candidates are required to take program developed logic exams
4. Writing sample scores – candidates are required to respond in essay format and are assessed on content and grammar

Programmatic Accreditation: The only recognized program accreditation for radiation therapy programs is the JRCERT. It is a peer reviewed process to ensure the program meets the standards of accreditation for radiological science programs (Washington & Leaver, 2010).

Radiation Therapy/Therapists: Radiation therapists use ionizing radiation to treat both malignant and benign diseases (Washington & Leaver, 2010). The level of patient interaction is the defining quality that differentiates radiation therapists from

radiographers. Patients being treated with radiation are typically treated on a daily basis Monday through Friday for a period of the 2–8 weeks depending on the treatment plan.

Radiography/Radiographers: Radiographers obtain x-ray images in different settings (Washington & Leaver, 2010). These settings may be the general hospital, emergency room, doctors' office, free standing imaging centers and urgent care centers. The major quality differentiating radiography from radiation therapy is the level of patient interaction. Radiographers often see their patients for a few moments and may never see them again.

Selective Admissions: Because community colleges have an open door policy with the offering of health sciences programs, it was necessary to create a selective admissions process to limit the acceptance of underprepared students (Fike & Fike, 2008). There are a limited number of seats available and not all students are qualified to be in the healthcare field.

Soft Skills: These are non-technical skills that are intangible. Recognized soft skills include communication skill, organization skill, leadership, logic, effort, group skill, and ethics. There are several attributes that are associated with soft skills, such as initiative, ethics/integrity, critical thinking, desire to learn, commitment, motivation, enthusiasm, creativity, analytical ability, stress management, self-management, problem solving, summarizing, independency, toughness, time management, reliability, verbal communication, flexibility, working as a team, listening, and logical argumentation (Sunarto, 2015).

Student Completion: Student retention and student completion are often used interchangeably and often refer to the completion of a specified program or objectives (Wild & Ebbers, 2002). Student completion when pertaining to radiation therapy education can refer to successful completion and graduation of an accredited program or completion of the program can be defined by passing of the national certification examination (JRCERT, 2013). For the purpose of this study, student completion is the dependent variable and is the number of students successfully graduating from an accredited radiation therapy program.

Student Success: Student success can also be defined in several ways, which includes completion of the program, passing of the national board certification examination, and maintaining employment in the field of radiation therapy (JRCERT, 2013). For the purpose of this study, student success is simply defined as the successful completion of the radiation therapy program.

Nontraditional Student: Typically students entering college are directly from high school, but with changes in the economy and society in general, many students are characterized as nontraditional. These students vary in age, educational experience, work history, family responsibilities, and socioeconomic backgrounds (Roman, 2007).

Significance

The results of this study on the relationship between the admission criteria and student completion may help the program director identify students who will successfully complete the program. The outcome of this study may also allow the radiation therapy program director to adapt and weight the admission criteria so that the best candidate can

be selected. They will identify candidates who will successfully complete the program. As a result of the data analysis, I developed a professional development program with a focus on conducting the interview.

Academic measures are not always a successful indicator of a student's clinical interactions. Some researchers have suggested that professional judgment be applied to applicants entering the field of radiation therapy; however, this type of judgment is subjective (Kwan, Childs, Cherryman, Palmer, & Catton, 2009). The local problem of poor program completion may improve because the results of the study may provide the justification for the program director to weight the interview portion higher in the overall process.

The significance of this study relates to a program in radiation therapy, but when one considers how many patients the therapist comes in contact with throughout his or her working lifetime, the number of individuals affected by this study grows significantly. Educators take a great deal of pride in their students and graduates, because it is a reflection of them. This study could provide positive social change for the academic and professional areas of radiation therapy. Students, instructors, administrators, and patients may benefit from the selection of qualified students, who may be successful in their chosen educational program. Additionally, the results of this study may relate to admission criteria of other health sciences programs and could improve their student completion, by using similar criteria. A common characteristic of health science programs is the limited number of seats available; therefore, it is

imperative to fill those seats with candidates who can successfully complete a program (Espen, Wright, & Killion, 2006).

Research Questions

Past research on student completion has primarily been associated with the students' experience after being admitted to college. The most comparable and reliable research available involves students' GPA prior to entering a program or college. The local problem of low student completion is hindering the program. There is a gap in knowledge between admission criteria to student completion of the program.

RQ1**:** What is the relationship between prerequisite course GPA and student completion of a radiation therapy education associate's degree program?

H_O1**:** There is no relationship between prerequisite course GPA and student completion of a radiation therapy education associate's degree program.

H_A1**:** There is a relationship between prerequisite course GPA and student completion of a radiation therapy education associate's degree program.

RQ2**:** What is the relationship between interview scores and student completion of a radiation therapy education associate's degree program?

H_O2**:** There is no relationship between interview scores and student completion of a radiation therapy education associate's degree program.

H_A2**:** There is a relationship between interview scores and student completion of a radiation therapy education associate's degree program.

RQ3**:** What is the relationship between writing sample scores and student completion of a radiation therapy education associate's degree program?

H_O3**:** There is no relationship between writing sample scores and student completion of a radiation therapy education associate's degree program.

H_A3**:** There is a relationship between writing sample scores and student completion of a radiation therapy education associate's degree program.

RQ4**:** What is the relationship between preadmission testing and student completion of a radiation therapy education associate's degree program?

H_O4**:** There is no relationship between preadmission testing and student completion of a radiation therapy education associate's degree program.

H_A4**:** There is a relationship between preadmission testing and student completion of a radiation therapy education associate's degree program.

Review of the Literature

The following keywords were used to identify relevant literature: *radiation therapy, radiological sciences, completion, retention, grade point average (GPA), admission criteria, health sciences programs, predicting factors, student success, community colleges,* and *health education.* The search was broadened to reflect other related *health sciences education* programs. The following databases were used: Education Source, ERIC, Business Source Complete, CINAHL, and ProQuest Central. This literature covers the following topics: the theoretical base, community college education, admissions criteria, potential barriers, and predictors of student success related to radiation therapy educational programs.

Theoretical Base

There is no one theory that identifies solely with student admissions and retention rates. Leading attrition theories and models were primarily developed with 4 year institutions in mind, not necessarily community colleges offering 2 year degrees (Hirschy, Bremer, & Castellano, 2011). The major theories that deal with student retention once they have been admitted were developed by Spady, Bean, and Tinto (Jama, Mapesela, & Beylefield, 2008). Spady (1971) suggested dropout rates of college students are most related to college academic and social systems (Spady, 1971). Spady's sociological theory would not theoretically apply, because the theory is based on the relationship between the student and the university, with the assumption the interaction between the student and the university is explanative of dropout rates (Jama et al., 2008).

Bean and Metzner (1985) focused their psychological model on nontraditional students, with an emphasis on the individual. Bean and Metzner's psychological theory does apply to the nontraditional students normally seen in the community college setting (Jama et al., 2008). This theory identifies the effect of the external environment on retention rates prior to and during the college experience (Jama et al., 2008). The use of this theory as a guide would limit the study to the factors associated with the background environment, rather than specific to the needs of the radiation therapy educational programs. Bean's model would not apply, because I am not looking at the psychological or social aspects of the individual student. For example, I cannot examine or measure an applicant's study habits and still maintain objectivity.

The theoretical framework most closely related to this study is based on a portion of the student retention theory developed by Tinto. The basis of Tinto's theory involves

the concept of the student's integration into the social and academic systems of higher education. He suggested that students with a higher level of integration will more than likely complete their degree (Mannan, 2007). It is also believed that Tinto's model could be used for predicting those students who are considered at risk, which is the primary goal of this study.

Tinto provided four stages of retention (Tinto, 1993). The first stage is Recruitment and Admission to College, which refers to establishing accurate expectations so that the potential student can select the appropriate school. The second stage is Orientation: Bridging the Gap to College, which relates to furnishing new students with information about the character of institutional life and about the requirements of the educational system that they are entering. Some allied health educators have expressed a desire to focus on the transition from high school to college, because there is a nationally recognized knowledge gap (Flores & Simonsson, 2012). The third stage is Pre-entry Assessment and Placement: Identifying Student Needs, which entails inserting students in appropriate first year courses and evaluating students for counseling and advising purposes. The final stage is The First Year: Making the Transition to College, which involves helping students make the social and academic shift to the new and possibly much more perplexing life of the college with things such as a first-year experience course.

The focus of this study used the recruitment and admission to college stage, as well as the pre-entry assessment and placement stage, developed by Tinto as a guiding theory. Jama et.al, (2008), realized the change in student populations and constructed

their own theory utilizing the existing work of the theorists listed above. The researchers called this theory the circles of progression, which basically follows the student throughout the entire educational process. The circle includes the following areas: pre-entry, initial entry, teaching and learning experience, and ongoing social and academic integration (Jama et al., 2008). The circles of progression theory would not fully apply to the study, because the intention of the study is to identify admission factors, which are not concerned with students' entire academic experience.

With regard to retention of a diverse student population, Tinto had previously recommended that consideration should be given to student attrition rates based on their program of study (Mannan, 2007). Based on Tinto's findings, a student's reasoning for non-completion can be linked to the students' initial contact with the university, in the form of recruitment and admission (Roman, 2007). When adapting Tinto's model to the selective admission criteria for the radiation therapy program, a major factor in the students' success was their understanding of program expectations. Some administrators have expressed their disappointment in colleges that maintain an open door policy, but also offer selective admissions programs, because it gives the students a false sense of expectations that they can pursue any career they desire. It was found that often professors and students do not share the same beliefs or expectations when it comes to unprofessional behaviors, which is why it is necessary to clearly define those expectations (Aaron, Simmons, & Graham-Webb, 2011). If institutions allow students to pursue careers for which they are unfit, they are eventually setting them up for failure. Although the purpose of this study focused on the admission portion of Tinto's study,

future studies can utilize the other stages of Tinto's theory to further increase student completion of radiation therapy programs.

Community College Education

Community colleges, in general, are concerned with student retention once students have been admitted, rather than prior to admission. They have established a strong focus on accountability and outcomes, the outcomes arise in the form of graduation and transfer rates (Nitecki, 2011). This makes it difficult to research admission criteria because the majority of community colleges have an open-door admission policy. It has become their mission to prepare students for the workforce through a degree or certificate and/or prepare them to transfer to a four year university. The need to study the admission process in relation to student retention is apparent, based on decreasing retention rates. Statistically, it is known that community colleges enroll low-income, first-generation college students, students of color, and those typically underserved by higher education. Although these students have access to education, it does not mean they will successfully complete their goal. Student retention is a measure of the institution's effectiveness, and administrators are held accountable for those retention rates. Many studies have been conducted on improving the retention rate of four-year colleges, but the truth of the matter is that community colleges cater to a different population of nontraditional students. Handel (2014) acknowledged the idea that four year institutions graduate students more efficiently than the community colleges who are saddled with open admissions. It has been suggested that an institutional based plan may be more effective in increasing retention, but further research is necessary

(Mertes & Jankoviak, 2016). A great deal of influence and research has been placed on the use of student engagement to improve student retention, but not on preadmission factors. A great deal of support and attention has come upon community colleges in recent years by federal and state policies, primarily because of their ability to reach the aims of national goals and educational attainment (Baime & Baum, 2016). In following with Tinto's theory, it is necessary to orient the student appropriately, and make the expectations clear to the student. It is suggested that the more structured a program is, the more successful the students will be (Van Noy, Trimble, Jenkins, Barnett & Wachen, 2016). Students with more opportunity for involvement and interaction outside of the classroom are more likely to persist (Stuart, Rios-Aguilar, & Deil-Amen, 2014). Further research on the relationship between admissions and student completion is necessary (Roman, 2007).

Admissions Criteria

Community colleges are far removed from the prestigious medical schools across the nation, but the same consideration can be applied in choosing candidates to work directly with patients, particularly because those graduates will be working under the physician's license. The process employed by medical schools has not been fully disclosed to the public, but a narrative review conducted by Gillilan et al. (2012), analyzed 150 tertiary review comments, which identified 14 themes in the selection process: summarizing comments, academic grades, test scores, motivation for medicine, interviews, letters of recommendation, military experience, medical experience, personal traits, written statements, extracurricular activities, maturity, leadership, and

service/volunteerism. Academic and standardized test scores were the two most common themes identified in the narrative review. How much emphasis or weight is placed on each area is undetermined. Student GPA and standardized test scores are most readily available and easily obtainable, but looking into noncognitive attributes, these become more difficult. The study intended to provide a generalization of admission factors in order to streamline the process. The desire to streamline the admissions process is common among a variety of allied health education programs, due to the large volume of applicants and the limited number of seats available.

Ochs and Adams (2008) sought to analyze the current admission criteria to determine a student's academic performance in radiation therapy education, but did not consider the clinical performance factors in radiation therapy. The study consisted of a literature review, which showed a predictive value from both academic criteria and the interview (Ochs & Adams, 2008). The study concluded that the entrance GPA is the most predictive measure of the students' success while in the program. According to the article, programs most often use GPA, personal factors, personal interviews, student empathy, math and science grades, and academic rank. Many programs look at cognitive variables, such as GPA, scores on standardized tests, and prior math and science courses. Interviews are also a common tool used by some programs in their selection process, but each school conducts its interviews in a different manner. Some radiation therapy education programs have opted to use the homogenous type of interview, where each applicant is interviewed by the interviewers (Ochs & Adams, 2008).

A literature review conducted by Gill (2010) looked at the noncognitive variables for program admissions in radiological science programs. The Non-Cognitive Questionnaire was developed by Sedlacek and Tracey, which provided a valid measure for 8 non-cognitive variables (Gill, 2010). The eight non-cognitive variables include: positive self-concept, realistic self-appraisal, understanding and ability to deal with racism, preference for long-term goals, availability of strong support persons, leadership, community involvement, and knowledge acquired in a field. The research revealed that non-cognitive factors offered a greater predictive value over grades, when looking at community college students. Further research is necessary to validate the use and importance of noncognitive variables (Gill, 2010). Roberts, Pugliano, and Langenau (2012) suggested that further research needs to be conducted in order to have preadmission criterion that relates to a student's clinical performance in a medical program.

Several allied health based programs use reference letters in their admissions process to gauge a student's non-cognitive abilities (Speziale, 2002). A major consideration in reviewing literature of other allied health programs is the number of applicants and seats available. Nursing programs, for example, have a large pool of applicants and a large number of seats available, especially when compared to smaller programs, such as those in the area of radiological sciences. Reviewing letters of reference is far less time consuming than conducting interviews or non-cognitive testing when evaluating a large applicant pool.

The most common criteria used for selection are GPA or a standardized examination. Multiple studies have concluded and validated the use of GPA as a successful predictor of academic success, along with the interview component. Shulruf, Poole, Wang, Rudland, and Wilkinson (2012) found prior academic achievement is the strongest predictor of performance in a medical program with the interview score having a weak predictive value. The majority of radiologic based programs used a merit-based system in their applicant process (Legg, 2011).

Grade Point Average. Previous academic work and GPA has been a common and successful predictor of student success; however, there are discrepancies in the ability of prior work and GPA to predict a student's ability to perform in clinic (Kwan, Childs, Cherryman, Palmer, & Catton, 2009). Numerous studies have been conducted on the success of students in the nursing program. Oliver (1985) found that the success of students during their first semester in the nursing program was related to their prior college work and GPA. Ward et al. (2010) sought to find predictors of success in dental hygiene education, which indicated that GPA at the end of the first year of the program were more predictive of a student's success in completing the program. A great number of students exhaust time and energy on allied health programs they cannot complete; therefore, further research is needed in this area so that students and program faculty do not waste valuable time and resources (Oliver, 1985).

GPA is a strong and solid measure of success that can be objective and legally justifiable. Puddy and Mercer (2014) found that GPA at entry of a medical program was the best predictor of academic success. According to Salvator (2001), several articles and

studies have concluded that GPA is continually the best predicting value of academic success, but the relationship between clinical performance and GPA has yet to be determined; thus, further research is needed. The reliance on GPA solely does not give the program administrators a measure of a student's non-cognitive abilities (Eva & Reiter, 2004). Noonan et al. (2005) recommended that community colleges contemplate the use of engaging noncognitive variables in admission and advising polices, as these variables have shown to be more predictive of retention than grades in nursing students. Within the field of radiation therapy, the compassionate non-cognitive abilities in caring for the same patients daily for a period of 6 to 8 weeks are extremely valuable and some students who would fare well in the clinical setting may be excluded from the program based on a low GPA. In addition, the value of using the GPA differs for early and mid-career students, so it may not be reliable (Darolia, Potocchnick, & Menifield, 2014).

Standardized testing. Evidence has shown that academic scores can often predict students' success in the program (Schmidt, Homeyer, & Walker, 2009). Schmidt et al. (2009) examined the relationship between student success and three score-based admission criteria factors in the discipline of counseling education. With the use of multiple regression, the researchers determined that assessment of successful candidates must start at the admissions stage utilizing comprehensive examinations. They concluded that testing is an important indicator of student success. Alwan, Kushi, Tamim, Magzoub, and Elzubeir (2013) suggested the use of high school and aptitude instruments for admission purpose, because they assessed the areas of science, math and linguistic abilities.

Strickland and Adams (2011) conducted a study to measure the relationship between math scores and radiographic physics. It was suggested that the study be conducted on a larger population, rather than just one program. There was a positive correlation between prior mathematics and science scores in relation to their physics scores while in the program. The researchers recommended informing students early on the importance of mathematics and science scores in completing radiologic programs successfully. Overall after an exhaustive review, limited number of studies were available that related the importance of math and science scores to success in radiologic programs. Anderton, Evans, and Chivers (2016) validated that first year anatomy and physiology grades as an indicator of successful performance in health science degrees, with the suggestion of further research on other aspects of academic performance indicators in additional subjects.

Goswami and Sahai (2015) found the use of a single multiple-choice examination, when used alone, to be lacking when producing medical students who were compassionate, professionally excellent and ethical individuals. However, in contrast Lucieer, Stegers-Jager, Rikers, and Themmen (2016) found no significant correlation between non-cognitive selected students and lottery-admitted students in regards to performance.

Interviews. Admission criteria used for health science programs is primarily based on objective information, because subjective non-cognitive factors are often avoided because of legal issues. Current practicing radiation therapists in Australia were surveyed to determine the important characteristics they look for in radiation therapy

graduates. Of course, a solid knowledge and skill level of physics and mathematics were essential, but a great deal of emphasis was placed on life experiences and the interview process (Schneider-Kolsky, Wright, & Baird, 2006). Importance has been placed on personal qualities, life experiences, and motivation for the pursuit of a career in radiation therapy; however, there is little research and literature available to support the use of such non-cognitive variables. Social skills and knowledge of the field can be assessed during the interview process. There is a mixed opinion among programs on the value of the interview. Some program personnel regard the interview as a valuable tool, while others find that the interview brings no-added information to the table (Kwan et al., 2009).

Ochs and Adams (2008), through the use of an extensive literature review, concluded that further research is needed to determine the statistical value of the interview process. In order for the interview process to be useful and validated, the interview process should be structured and training must be provided for the interview panel. Additional issues exist when interviewer bias taints the process. The interview process is often time consuming and requires two or more interviewers, which is why programs veer away from the addition of this criterion (Espen, Wright, & Killion, 2006).

Espen, Wright, and Killion (2006) sought to identify common admissions criteria for radiography programs in Oklahoma and Texas. A survey was sent to 45 JRCERT accredited radiography programs in Oklahoma and Texas, of which 35 were returned. Ultimately, the researchers identified common admission criteria and suggested further research on the correlation between admission criteria and student success. The common criteria consisted of cumulative grade point average, interviews, successful completion of

math and science courses, and performance on standardized tests. The study conducted by Espen et al., found the interview factor to be of little significance in altering attrition rates when studying the admissions to radiography programs. It is important to keep in mind that the major difference between the fields of radiation therapy and radiography is the degree of patient relationships. The authors reminded readers of the increase in the diversity of the nation and the need to retain minority students, thus keeping criteria predictive of success and not discriminatory.

The reasoning for utilizing the interview process is the same across the disciplines; however, there are no strict guidelines or formats that generalize the interview process (Salvatori, 2001). The interviews can be conducted in various formats, such as one-on-one interviews, panel interviews, group interviews, or a series of mini-interviews. Once again, Salvatori (2001) concluded that the use of the interview is a large time commitment that does not produce the intended value of predicting student success. However, the importance of assessing cognitive and non-cognitive abilities of prospective students was emphasized.

The effectiveness of the interview is not fully understood and the major identifiable reason for not utilizing the interview in the selection process is the potential for bias. Goho and Blackman (2006), using 20 articles cited by another author on the effectiveness of interviews, found a very weak relationship between the interview and the predictors of success. It should be noted that students not admitted to programs based on their interview scores have no way of validating their success or lack thereof. Furthermore, the *r* value of 0.17 indicated there was a slightly positive relationship

between the interview and predicting clinical success (Goho & Blackman, 2006). Sanderson (2014) found the interview portion of the admission criteria for dental hygiene admission positively correlated ($p = 0.054$) to retention rates.

A study conducted by Donaldson et al. (2010), in the United Kingdom, looked at nursing criteria and the use of interview scores to predict student success. The questionnaire used was the Interview Score Sheet (ISS), which was used to interview five nursing cohorts. Through statistical analysis, it was found that the scores of the interview had little to no effect on the student's success. The study did find a relationship with the candidates' age as a predictor of success. This may be true in the majority of cases, but the use of age is discriminatory in the selection process for applicants in the United States.

The use of the interview in the selection process has yet to be determined in a numerical value. The major concerns in validating the use of the interview in the selection of prospective candidates are bias, manpower, and the time necessary to complete the process correctly. Based on previous literature, the structure of the interview is recommended to be streamlined and generalized.

To streamline the interview process and assess personal competencies many medical schools in North America and Europe have adopted the Multiple Mini Interview (MMI; Terregino, McConnell, & Reiter, 2015). One of the major justifications for using this type of interview is the ability to assess multiple facets, with a large focus on communication (Zaidi, Swobda, Wang, & Manuel, 2014). Additionally, with the increase in student activism and challenges to denial decisions, the MMU is becoming

increasingly common, because it can reduce the bias associated with traditional interview techniques (Sebok, Luu, & Klinger, 2014). The MMI has been validated for use across various health disciplines, but it has not been validated for use with students in applied health sciences, so caution should be exercised (Yen, Hovey, Hodwitz, & Zhang, 2011). However, Oliver, Hecker, Hausdorf and Conlon (2014) found validity in the use of their MMI measures if they clearly define the aspects of the non-cognitive attributes they are intending to assess.

Observation. Some researchers highly recommended that prospective students participate in an observation day to give them a clear understanding of the field, as well as, to have current radiation therapists assess prospective candidates for their motivation and suitability for the field (Schneider-Kolsky et al., 2006). The score the applicant receives for their observation day is also subjective in nature, because it is primarily based on the perception of the radiation therapy preceptors evaluating the prospective students. It is possible for students to demonstrate unbecoming behavior during their observation day that will disqualify them from entering the program. Examples might include texting on a cell phone, violating patient confidentiality, and being disrespectful to staff.

Potential Barriers

Identifying current barriers encountered by those students who fail to complete their chosen program is an important factor in predicting future candidates' success. While this information may not be used to deny students, it could be used to effectively manage the students' risk factors or aid them in making realistic choices regarding their

future. Nontraditional students often encounter a lack of academic preparation, lack of finances, social issues, cultural issues, and overwhelming family responsibilities (Spellman, 2007). Additionally, Bergman, Gross, Berry, and Shuck (2014) found that students who had conflicts with work schedules were less likely to succeed. These students are also first generation college students, who are inadequately prepared for college studies (Bonet & Walters, 2016). Stegers-Jager, Themmen, Cohen-Schotanus, and Steyerberg (2015) found that the student's background was a key predictor of clinical success, such as students from all minority groups and first-generation university students were at risk of performing poorly in the clinic. Aguinis, Culpepper, and Pierce (2016) discussed a relatively new concept called differential prediction generalization, which looks at the bias that can affect a student's GPA, which relates to stereotypes and favoritism.

Community colleges across the United States often share the commonality of the open-door process. Students seeking admission to allied health based programs are often required to not only meet the published criteria, but they must submit a criminal background check and may be subjected to drug testing. Although students are informed of the potential effects of a prior criminal record could have, this is not a basis for denying a student admission. Nonetheless, there is the potential that a student could be dismissed during the program from a clinical site because of a prior criminal record, thus reducing the program's completion rate. Another possibility is that the student might complete the program, but is unable to sit for the national boards or obtain state licensing due to a previous criminal background. Colleges and universities should demonstrate

uniformity in publishing information and informing advisors properly, so that students can make fully informed decisions (Bradley, 2007).

Predictors of Student Success

Davidovitch and Soen (2015) found that student success in obtaining a degree varied from one degree to another, for example in the field of health sciences psychometric scores and/or matriculation grades are the dominate predictors. David and Renea Fike (2008) conducted a study on the predictors of first-year retention in the community college setting. Tinto's theory of student retention is used as one of the guiding theories for this study. Due to the nature of the community college as opposed to four-year institutions, it is necessary to identify the open door policy instead of selective admissions that assure most students enter prepared. The results indicated the importance of developmental education, with the strongest predictor being the passing of a developmental reading course. The passing of developmental math and writing were also identified as strong indicators for improving student retention. It was determined that further research into the predicting variables of retention rates is necessary. The authors concluded that students passing developmental courses, taking internet courses, participating in student support services, receiving financial aid, parent's educational levels, as well as, the number of hours enrolled and dropped during the first semester have been identified as predictors of student persistence (Fike & Fike, 2008).

Kwan et al. (2009) sought to investigate the relationship between admission criteria and student success. The study provided little information on the relationship between admission criteria and student success; however, student success was defined in

the study with post GPA scores. Of the 122 students admitted to the cohort, eventually all 122 students completed the program. The study did validate the use of previous math and sciences courses, but failed to provide any information on non-cognitive attributes. There were problems noted in several students who required some form of remediation either academically or clinically, but that did not affect the outcome of student success, as defined it in the study.

There have been several studies analyzing the demographic data in relation to student success. For example, student race/ethnicity has been linked to poor program performance (Shulruf, Wang, Zhao, & Baker, 2011). Studies based on demographic data face legal scrutiny if used for admission purposes, regardless of the program. This type of information can be used to aid students in identifying risk factors and working with them while in the program, but cannot be used in the admission process or weighted in any such way.

It should be noted that a number of students are dismissed from programs for non-academic reasons and there is no justifiable correlation to the student's admission criteria (Donaldson, McCallum, & Lafferty, 2010). Educational institutions place a great deal of emphasis on students' retention once they have been admitted to college. Significant research has been conducted on the use of technology and student engagement to improve retention, however, one study conducted by Fincher (2010), also addressed the students' ability to understand terminology related to their college education. Determining a students' understanding of the commitment and expectations of allied health programs is something that can be assessed during the admissions process.

Utzman, Riddle, and Jewell (2007) found it useful to utilize demographic and quantitative admission data to predict potential difficulties with physical therapy students. There was a relationship discovered between GPA, GRE scores, age, race, and ethnicity in predicting at-risk students (Utzman, Riddle, & Jewell, 2007). However, in the community college realm, one must be cautious in placing value in demographic data such as age, race and ethnicity. Research is needed on barriers encountered by adult students that include demographic components, but these retention barriers are not addressed until the students have been admitted (Spellman, 2007). Van Der Merwe (2011) suggested further research and emphasis to define precise profiles and patterns causing student attrition.

The literature review resulted in a well-rounded basis for support of assessing students prior to admissions into a health science program. Tinto's theory applies to this study and creates a foundation for future studies, particularly in student retention. Further research will assist community colleges in reaching their goals of increasing completion.

Implications

The results for this project may help design a selective admissions process not only for the radiation therapy program, but also for radiation therapy programs at community colleges nationwide. In addition, the study may yield insight into the non-cognitive factors that affect student completion, which will enable the program to publish this information to prospective students.

This study could open doors for advisors to direct students toward careers for which they are more suited. With supporting research available, administrators are more apt to accept the interview as part of the selective admissions criteria. Radiation therapy program directors may use the results of this study to tailor their admission criteria in order to select successful candidates who will complete the program. Research is expected to provide evidence that justifies both denial and acceptance of prospective students.

A professional development training program could be established for allied health program directors to help determine what criteria to use when selecting students for their respective programs. The data collected will provide direction for a number of possible professional development opportunities. Depending on the analysis of data, the focus for program admission criteria can be placed on determining prerequisite courses, interviewing techniques, preparing a written sample, or preparing a pre-test assessment. If data reveal a relationship between the interview score and student completion, a project for providing effective interview techniques could be developed as a guide for program directors to use.

An alternative project idea is a curriculum plan based on conducting the interview which could be offered as a course. The target audience would continue to be program directors; however, this project would require more classroom time. The setting for a 9–15-week curriculum plan could be online or in-person. Such a project may not appeal to those who are under time constraints, such as those with a heavy teaching load and administrative duties.

Summary

With so much emphasis placed on student-centered learning and meeting the needs of the community, greater accountability is required of instructors and administrators to ensure that students are receiving ethical treatment. However, when institutions choose candidates for allied health programs, they often find it difficult to explain and support the rigid admissions process and admission criteria, while combating low completion rates. The purpose of this study was to determine if there were any relationships between the four admission criteria (GPA in prerequisite courses, interview scores, writing sample scores, and preadmission testing scores) and students' completion of a radiation therapy associate's degree program.

The evidence suggests that students are not aware of the expectations of a rigorous program and their lack of soft skills, along with the ability to critically think, are reasons why students do not complete the program. The community college has the goal of accommodating the community and providing high-quality education that is both accessible and affordable, while maintaining an open door policy.

The study may provide support for the acceptance of selective admission criteria and provide professional development opportunities and possible alternative projects related to program completion and admission criteria. Additionally, the results of this study may relate to admission criteria of other health sciences programs and could improve their student completion, by using similar criteria.

Section 2 covers the methodology of the study, which includes the design, sample and setting, instrumentation, data collection, and analysis. The methodology for this

study relies on retrospective data retrieved from archival data housed by the program. The program maintains data for at least the 5 years, as required by the national accrediting body.

Section 3 provides the description and goals of the project. Additionally, section 3 covers potential resources and existing supports for the project, the potential barriers, the proposal for its implementation and timeline, the roles and responsibilities of those who are presenting the program, the project evaluation, and the implications for social change. Section 4 contains my reflections of myself as a scholar and conclusions of the project study.

Section 2: Methodology

Introduction

This study sought supportive research to establish admission criteria that were related to students' successful completion of a radiation therapy program. The quantitative methodology with correlation design was appropriate in evaluating the current admissions criteria used by the selected population. The need to remain objective in this study was emphasized by using data collection forms for the retrospective data.

Research Design and Approach

The methodology for this project study was quantitative, rather than qualitative, because the purpose and research questions for the study supported a quantitative study. The research questions addressed the relationship between two variables, the admissions criteria and program completion, which is a characteristic of quantitative research (Creswell, 2012). Since admissions at the community college level needed to remain as objective as possible, the use of a quantitative study was encouraged. The retrospective data available were quantitative and provided objective means of helping to select students for the radiation therapy program. A qualitative study would have provided insight to the problem, but would have been more subjective in nature and did not meet the needs of the program.

This quantitative project study used an explanatory correlation design to relate the selective admission criteria of the radiation therapy education program to student completion. The independent variables were the admission criteria (GPA of prerequisite courses, interview scores, writing sample scores, and preadmission testing scores) and the

dependent variable was student completion. Because the purpose of the study was to determine relationships between admission criteria and student completion of a radiation therapy education associate's degree, the explanatory correlation design was most appropriate. The primary aim of a correlation study is to explain the association among variables (Creswell, 2012). An explanatory correlation design provided significant statistical information to answer the research questions.

Setting and Sample

The population consisted of *post hoc* data on 70 enrolled students over a period of 5 years, 2011 through 2015. The program lost its accreditation in 2008. In an effort to restructure the program and regain accreditation, admission to the program was delayed. The first graduating class to use the admissions criteria presented in the study was the 2011 cohort.

Using power analysis with an α of .05, a medium to large effect size, a power of .8, and a product-moment correlation analysis of data, the required sample size ranged from 28 to 85. Therefore, based on the available retrospective data of 70 students, the effect size was between medium and large (Cohen, 1992). The effect size means how well the sample represents the population data (Creswell, 2012). The alpha, set at .05, is the probability of rejecting the null hypothesis when the null hypothesis is true (Creswell, 2012). The power of .80 was used, which is the power needed to reject the hypothesis when it was false (Creswell, 2012).

The sampling strategy was nonprobability convenience sampling. Five years of data provided sufficient information to identify a relationship between the admission

criteria and student completion. The retrospective student data were available, convenient, and possessed the eligibility criteria listed below (Creswell, 2012). The characteristics of the sample size included students who applied to the program and were accepted into the program. All students went through the same admission criteria which included prerequisite course GPA, interview score, written sample score, and the preadmission testing. The data were collected on those students who had been admitted to the prospective graduation classes of 2011 to 2015.

Instrumentation and Materials

The study used ex post facto data for the four independent variables and one dependent variable; therefore, no separate instrument was developed. The data for the variables were generated by the respective institution using standard approaches to reliability and validity. The data collection instrument was the data collection form.

The data collection form contained retrospective information on each student who was admitted to the program within the last 5 years (2011 – 2015). Student anonymity was protected by the use of generic ID numbers. Electronic raw data were kept in password encrypted files and hard copies were secured in a locked file cabinet.

Data Collection and Analysis

IRB approval was initially obtained from Walden University on December 2, 2014 (Approval No. 12-02-14-0257408). Changes to the study were approved by the IRB at Walden University on May 21, 2015. A letter of cooperation for the Program was obtained on October 16, 2014 from the community college housing the program. The cumulative raw data are available in a locked file cabinet.

These data, which included prerequisite GPA, interview score, written sample score, and preadmission testing, were in the form of interval data. The criterion of program completion, which was the dependent variable, was answered with a yes (1.00) or no (.00), which is nominal data. The multiple independent variables, which are the prerequisite course GPA, interview, writing sample, and preadmission testing are interval data. The prerequisite course GPA had a range of 0 to 30. The preadmission testing had a range of 0 to 18. The writing sample score has a range of 0 to 12. The interview score had a range of 0 to 28.

A letter of cooperation was obtained from the dean of the School of Health Professions at the college. The program archival data was available in program records found in the program director's office. No other permission letters were obtained other than the letter of cooperation found in Appendix B.

Assumptions, Limitations, Scope and Delimitations

Assumptions

This study was based on the assumptions that (a) there were standardized procedures for administering writing samples, interviews, and pre-admission tests, (b) GPAs were calculated accurately, (c) program completion data are accurate, and (d) records kept by the program provided accurate data. According to the literature on allied health professions, students with low GPAs in their math and science courses experienced failure to complete their prospective programs. Limited studies showed that there was no real significance on a student's success when using the interview. Because

no studies have been conducted on the other admission criteria being used, it was difficult to make further assumptions.

Limitations

The study presented several possible limitations regarding the amount of archived data that were available. The admissions process had been altered through the years and data were not available beyond 2011. The data for 2009 contained only a written score and an interview score. A degree class was not admitted in 2010. There were no admission records prior to 2009. According to the accrediting body, programs are required to maintain only 5 years of data.

Scope and Delimitations

Demographic data such as race, gender, and age were not available for individual classes. Criteria not related to the research question were not collected. The scope and the boundaries of the study were limited to the one program. The boundaries of this study remained consistent with objective admission criteria and did not take into consideration the students' demographic data.

Protection of Participants

Measures were taken for the protection of participants beginning with approval from the Walden University Internal Review Board (IRB). Research was not initiated until approval was received. Each individual student was assigned a number solely for data collection purposes. No identifiable or demographic data were collected. Electronic data were protected with encryption and hard copies of data were housed in a locked file cabinet.

Data Analysis Results

Descriptive Data

Table 2 includes the data analysis results of the criteria, which includes results of the range, mode, standard deviation and mean. Of the 70 students, 52 completed and 18 did not.

Table 2

Data Analysis Results

Criteria	Range	Mode	Standard deviation	Mean
GPA	20.00	30.00	5.02	22.8
Interview scores	20.44	28.00	3.76	25.42
Writing sample scores	8.00	12.00	1.49	11.06
Preadmission testing scores	9.54	18.00	2.52	18.00

Research Results

RQ1**:** What is the relationship between prerequisite course GPA and student completion of a radiation therapy education associate's degree program?

H_O1**:** There is no relationship between prerequisite course GPA and student completion of a radiation therapy education associate's degree program.

H_A1**:** There is a relationship between prerequisite course GPA and student completion of a radiation therapy education associate's degree program.

A point biserial correlation was calculated examining the relationship between prerequisite score GPA and program completion. No significant correlation was found (r_{pb} (68) = .062, $p > .05$) between the two variables. The null hypothesis was accepted and the alternative hypothesis was rejected (Table 3).

Table 3

Prerequisite Course GPA Score Results

		GPA points	Program Completion
Pearson Correlation		1	.062
GPA Points	Sig (2-tailed)		.612
	N	70	70
Pearson Correlation		.062	1
Program Completion	Sig (2-tailed)	.612	
	N	70	70

RQ2**:** What is the relationship between interview scores and student completion of a radiation therapy education associate's degree program?

H_O2**:** There is no relationship between interview scores and student completion of a radiation therapy education associate's degree program.

H_A2**:** There is a relationship between interview scores and student completion of a radiation therapy education associate's degree program.

A point biserial correlation was calculated examining the relationship between interview score and program completion. A moderate positive correlation was found ($r_{pb}(68) = .317$, $p < .01$) indicating a significant linear relationship between the two variables. Students with higher interview grades tend to complete the program. The null hypothesis was rejected and the alternative hypothesis was accepted (Table 4).

Table 4

Interview Score R*esults*

		Program completion	Interview points
Pearson Correlation		1	.317**
Program Completion	Sig (2-tailed)		.008
	N	70	70
Pearson Correlation		.317**	1
Interview Points	Sig (2-tailed)	.008	
	N	70	70

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

RQ3**:** What is the relationship between writing sample scores and student completion of a radiation therapy education associate's degree program?

H_O3**:** There is no relationship between writing sample scores and student completion of a radiation therapy education associate's degree program.

H_A3**:** There is a relationship between writing sample scores and student completion of a radiation therapy education associate's degree program.

A point biserial correlation was calculated examining the relationship between writing sample score and program completion. No significant correlation was found ($r_{pb}(68) = -.132$, $p > .05$) between the two variables. The null hypothesis was accepted and the alternative hypothesis was rejected (Table 5).

Table 5

Writing Sample Score Results

		Program completion	Writing points
Pearson Correlation		1	-.132
Program Completion	Sig. (2-tailed)		.277
	N	70	70
Pearson Correlation		-.132	1
Writing Points	Sig. (2-tailed)	.277	
	N	70	70

RQ4**:** What is the relationship between preadmission testing and student completion of a radiation therapy education associate's degree program?

H_O4**:** There is no relationship between preadmission testing and student completion of a radiation therapy education associate's degree program.

H_A4**:** There is a relationship between preadmission testing and student completion of a radiation therapy education associate's degree program.

A point biserial correlation was calculated examining the relationship between preadmission testing score and program completion. No significant correlation was found (r_{ob} (68) = -.154, $p > .05$) between the two variables. The null hypothesis was accepted and the alternative hypothesis was rejected (Table 6).

Table 6

Preadmission Testing Score Results

		Program Completion	PreTest Points
Pearson Correlation		1	-.154
Program Completion	Sig. (2-tailed)		.203
	N	70	70
Pearson Correlation		-.154	1
Pre Test points	Sig. (2-tailed)	.203	
	N	70	70

Outcome of Results

The research results yielded a significant moderate positive relationship between the interview score and student completion. Those students with a higher interview score were more likely to successfully complete the program. In relation to the problem, the research results would support using a heavier weighting on the interview portion of the admission criteria for the program. Results of the study were similar to those conducted by Sanderson (2014), who found a positive correlation between the interview and student retention rates for the dental hygiene program. Whereas, Goho and Blackman (2006) found a slightly positive correlation between the interview and clinical success.

Based upon the results of the research a professional development training program was developed to guide program directors in interviewing techniques and scoring. The formation of a professional development training program focused on interviewing techniques and scoring will provide program directors with a reliable foundation to support the interview portion of admissions.

Summary

This quantitative project study used an explanatory correlation design to relate the selective admission criteria of the radiation therapy education program to student completion. The population consisted of *post hoc* data on 70 enrolled students over a period of 5 years, 2011 through 2015. The independent variables of GPA, interview score, writing sample score, and preadmission testing, were in the form of interval data. The dependent variable, program completion, was answered with a yes or no, which is dichotomous, nominal data. In addition, there was the assumption that all the data collected was accurate.

Section 3 continues with a brief introduction of the final project, a review of literature for related research, a discussion of the project, and the project implications. The project is a 3-day professional development program intended for program directors of health science programs at the community college level. Objectives, curriculum, training activities and materials were developed for conducting admission interviews. The theoretical framework for the professional development program is the theory of reflective practice.

Section 3: The Project

Introduction

This section includes the following subsections: description and goals, rationale, review of literature, project description, evaluation plan, and implications. The project was derived from the research results described in Section 2. Of the four independent variables, the interview showed a significant influence on the applicants' ability to be successful in the radiation therapy program. The professional development training program in Appendix A, consists of a 3-day workshop for program directors and faculty of selective admission Health Sciences programs to give them the tools to use the interview process effectively.

Description and Goals of the Project

The purpose of this project was to develop a 3-day professional development program for program directors of health sciences programs at the community college level on the topic of admissions interviewing. The program includes objectives, curriculum, training, activities and materials for admissions interviews. The professional development training project will give program directors a foundation, guide, and techniques to apply when interviewing perspective students for entrance into selective admissions programs. The target audience consists of those individuals who are responsible for admissions at a community college level that wish to use the interview as a criterion for entrance to their program.

The goal of the project is to address concerns program directors have using the interview as a criterion for selective admissions and provide them with training in order

to effectively implement a student interview. The project includes the advantages and disadvantages of using the interview as an admissions tool. In addition, the evaluation of soft skills and interview development will be discussed and developed to meet the attendees' individual needs.

Rational

The professional development program was chosen based on the data analysis, which revealed a significant moderate positive relationship between interview scores and student completion. The higher the interview score the more likely the student was to complete the program. The local problem of low completion rates in the Radiation Therapy Program can be addressed with the implementation of a stronger interview portion and higher weighting factor in the admissions process. The Professional Development Training Program will aid in implementing a stronger interview portion and provide supportive research for weighting the interview portion higher. The program will guide participants through the interview process and provide them with tools for meeting academic and professional standards.

Review of the Literature

The key words used to research theories and literature related to the program included: *reflective theory, education and professional development programs, interview techniques, admission interview, interview formats, structured interviews,* and *soft skills*. The Education Source, ERIC, Business Source Complete, CINAHL, and ProQuest Central databases were used through the Walden Library. The literature review begins with the theoretical framework used to develop the professional development program,

then the focus is drawn to professional development in higher education. The following sections of the literature review pertain to the subject matter of the project, which include reflective practice and interviewing, behavioral interview, soft skills, predictive value, and bias.

Theoretical Framework

The reflective theory serves as the theoretical frame work for the professional development program. The adult learner values the opportunity to relate what they are learning to their current and past experiences. This allows them to find a way to use what they are learning in everyday practice. There are several elements of reflective practice the learner must utilize, which include considering multiple perspectives, an open mind, thinking about thinking, and ultimately an outcome that leads to an action (Merriam, Caffarela, & Baumgartner, 2007). In regards to the interview process, many educators have drawn their own opinions and bias on the subjective nature of the interview. It is important that they be able to relate to the professional development training project and bring different perspectives to the table. Throughout this process, it is also important for the learner to not draw any conclusion until everything has been fully presented (Jorgensen, 2015).

Smith (2003) attempted to connect theory and reflective practices with the use of personal theories. The paper outlined the use of personal theory with reflective practice in mathematics teacher education. A year long study was conducted, which began with personal reflective journals and ended with personal reflective journals. The change in the course of the year was noted, which indicated a change in personal perspective

through education. According to Smith, this developed the participants' educational portfolio with the use of personal theories. Personal theories and personal reflection in delivery or pedagogy as instructors leads to a common outcome, student success (Hinchliffe, 2015).

Kelly and Cherkowki (2015) used the reflective practice in their case study research on professional development for teachers. A professional learning community was developed. Although the study focused on improving literacy in primary grades, a series of seven workshops were conducted, which yielded reflective journal entries from each participant. The study showed the need for further research into the relationship of the members within a professional learning community, but it also indicated the importance of reflective learning. The benefits of reflective learning come when instructors continue their reflection through systematic observation, arduous exploration and rational selection (Liu & Zhang, 2014).

Reflective learning can be derived from other methods, rather than journaling alone. Such strategies include: teaching journal, observation, teacher assessment, questionnaire, micro-teaching, and action research (Liu & Zhang, 2014). Regardless of the method, the process is continuous.

Suwaed and Rahouma (2015) used a qualitative approach to examine teacher views on professional development. The findings were derived from semi structured interviews, which eluded common themes. The themes included: dissatisfaction, contextual factors, and self-development. With these themes in mind, a model of effective professional development was created. The model revolves around reflective

practice, self-learning, and sharing experience. There are unknowns when using a model constructed around reflective theory; there are no guarantees that all participants will have something to share (Goldberg, 2012). Reflective theory will be used as the framework for this professional development project, because the audience will be composed of adult learners who have different levels of experience to offer, but still need to relate the material to their practice individually.

Professional Development

Professional Development is an extremely valuable tool in maintaining continuing education standards for instructors. There are four types of professional development, which include practioner development, professional education, professional training, and professional support (Malik, Nasim, & Tabassum, 2015). Professional development opportunities are not always offered by institutions, nor are they always accepted by educators. Teaching loads are heavy, there are more administrative responsibilities along with adapting to the changing teaching practices and students, and it is difficult to find the time and the energy for professional development (Suwaed & Rahouma, 2015). In an effort to eradicate the barriers of access and scheduling, online professional development is also becoming more popular (Reeves & Pedulla, 2013).

The content of professional development opportunities has been a major issue among educators and administrators. Khatoon et al. (2015) found that the majority of instructors were not satisfied with the applicability of their professional development activities. There is a gap between intention and implementation of the content in professional development opportunities offered by institutions (Bradshaw, 2015).

Professional development opportunities are more likely to be successful if they are drawn from social aspects of learning that are directly meaningful to instructors (Voogt, 2015). Saunders (2013) found a relationship between a teachers emotions during professional development, through reflective study, which would determine whether the teachers would implement into practice what was delivered through professional development. The shift in professional development activities has been to create more relevant, contextualized, personalized and self-paced learning (Owen, 2012).

Professional development encompasses a broad spectrum of areas, institutions or organizations, and administration can choose to hold activities in house or externally. Involving their own staff to create these activities will use their expertise in an existing environment (Bradshaw, 2015). Ghamrawi (2013) found that tapping into an educator's own expertise not only promotes growth and learning, but also leadership qualities.

The ultimate goal for either internal or external professional development are the improved student outcomes. There are two competing focuses driving professional development, which are teacher learning and student outcomes (Petrie & McGee, 2012). Barret et al. (2015) found that the quality of teachers and improved student outcomes were only achieved when an outside partnership was developed to provide professional development.

In my experience and observation, implementation of an activity delivered at a professional development opportunity is often difficult to gauge or keep track of after a professional development activity has passed. Sondergeld et al., (2014) experienced the perceptions of faculty through reflective journaling. In addition, to the subject matter, the

length of the activity or program is significant. Lauer et al. (2016) found that transfer of the learned concepts cannot occur without proper implementation.

Accessing your audience and reaching as many people as possible can be difficult due to time and financial constraints. Professional development is very important for the continued growth of educators as indicated by accrediting bodies and institutional development. Shaha et al. (2015) found continued professional development activities resulted in sustained gains and improved student outcomes.

The genre of professional development is an appropriate for this professional development program on the topic of Admissions Interviewing, for several reasons. The audience is made of educators and program directors, with various levels of knowledge and experience. The reflective theory will draw on those experiences. The reflective portion of professional development is important when relating the clinical aspect of the field to educators who have little to no experience in healthcare (Allen, Perl, Goodson, & Sprouse, 2014). The program will focus on increasing student success in health sciences programs, by addressing the interview portion of the admissions process.

Reflective Practice and Interviewing

The purpose of the interview is to personalize the impersonal admission decision-making process (Hendricks, 2003). It opens a line of communication between the interviewer and the interviewee, or in the case of this study the student applicant and program director. In my knowledge from practice, this allows the direct observance of the applicants' communication skills.

Reflective practice can be a very valuable tool when used appropriately, particularly when conducting the interview. When the human aspect is involved there are characteristics that can only be derived from an interview. "The general opening seems to be that voice qualities, personal appearance, mode of attire, and other qualities of the individual are just as important to decision making in the interview as is the information secured from the interviewee" (Newberry & Bootzin, 1966). In healthcare especially, interpersonal skills are very important. The interview gives the interviewer insight into the applicants' interpersonal skills (Hendricks, 2003).

Interviewers can use their previous experiences to hone in on the skills they are looking for in potential students. This can also create a negative bias based on previous experiences. This type of mindset leads us into the behavior interview (Yeung, 2008).

Behavioral Interview

The interview has faced a critical path with regards to its predictive validity, however, it continues to be one of the most used methods of selection among employers (Oliphant, Hansen, & Oliphant, 2008). Much of the academic research showed a low predictive validity for the interview as a tool for selection. Oliphant et al. (2008) gave four potential reasons as to why the interview is still used: the value added indirectly in the areas of recruitment; public relations and feedback; judgments on observable interpersonal dimensions of behavior, such as interpersonal skills, self-assurance, and social poise; company policy, habits, experience, ease, or the feeling of power. The reasoning behind the interview may be a valid predictor that academic research has yet to discover.

There are different types of interview techniques, such as structured and unstructured. The behavior based interview is a type of structured interview, based on the foundation that past behaviors predict future behaviors (Oliphant et al., 2008). The first step is to determine what behaviors are important and then develop open-ended questions to emerge past experiences related to the important behaviors (Yeung, 2008). Oliphant et al (2008) conducted a telephone-administered behavior-based interview, which measured the performance and retention of salespeople over a 29 month period. They found that applicants who scored higher on the behavioral interview performed better on five different performance measures and were more likely to stay with the company.

The behavior interview is a means of addressing the lack of standardization (Kyllonen, 2013). This type of interview allows the interviewer to develop the interview so they can assess the soft skills they find to be most important. Based on networking and previous knowledge, many colleges and universities like to standardize the process of interviewing to avoid legal consequences, however, for healthcare careers it is not a one size fits all scenario.

Soft Skills

Soft skills are an important and necessary tool for those who have direct contact with the patients in the medical setting. Aworanti, Taiwo, and Iluobe (2015) described soft skills as non-academic skills, which include leadership, team work, communication and life-long learning. Robles (2012) identified the top 10 soft skills as perceived by business executives as integrity, communication, courtesy, responsibility, social skills,

positive attitude, professionalism, flexibility, teamwork, and work ethic. Once the soft skills have been identified, it is then up to the interviewer to discover a means of measuring soft skills during the interview process. Sunarto (2015) acknowledged career failure after graduation due to the lack of the following soft skills: honesty, ability to cooperate, ability to make decisions, and ability to solve problems.

Measuring and developing these skills has proven to be a difficult task. A 2008 NACE Job Outlook survey reported that the 267 employers that took the survey, rated the following in order of importance in what characteristics they look for in employees: communication skills, a strong work ethic, teamwork skills, initiative and interpersonal skills (Orr, Sherony, & Steinhaus, 2011). Essential non-cognitive skills necessary in the medical field have been recognized as communication and empathy (Yen, Hovey, Hodwitz, & Zhang, 2011).

Orr et al. (2011) presented an assignment that can be characterized as a reverse interview. Students were given an assignment to interview a professional in their major. They were given 3 hours of instruction which allowed them the opportunity to: preliminary information (interviewer purposes, interviewee purposes, interviewee characteristics; opening (create rapport, provide orientation to the interview, and motivate interviewee); information getting and information giving (questions and details); and closing (summarize and conclude). The professionals who were interviewed were then asked to evaluate the interviewers' soft skills. The study concluded that the interviewers made a positive impression, which is thought to be because of the training that was provided to the students prior to conducting their interviews. The ratings proved to be

strong in utilizing good manners, coming prepared, displaying a positive attitude, and closing the interview. The areas of needed improvement included making proper eye contact, using good posture, and using appropriate facial expressions and gestures. In addition, improvements could be made in developing skilled, well thought-out questions, and asking the right number of questions. Lastly, the area of appearance needed improvement (Orr et al. 2011).

Stupans, Scutter, and Sawyer (2011) compiled a list of professional behaviors that were formulated by students. The professional behaviors identified can be related to or interchangeable with soft skills. These behaviors include: energetic; respecting patient confidentiality; punctuality; treating all patients respectfully, patient's positive experience is the priority; communicating with other health professionals and with patients and caregivers (including use of age appropriate language); professional language; keeping patients informed during procedures; using radiation protection and universal precautions; and wearing uniform with minimal accessories. These behaviors and expectations should be clearly stated and explained so that both parties have an understanding of what is expected and what behavior is acceptable. The new age of communication requires institutions to instill a code of conduct to reduce the use of electronics in the classroom, thus increasing professional communication (Jones, Baldi, Phillips, & Waikar 2016).

Predictive Value

Piercy et al. (1995) conducted a nine year study in an effort to determine which admission criteria would predict their performance in the areas of clinical and academic

research. It was found that the interview rankings did not reveal any predictive value. However, it was noted that there were between 50 and 70 applicants at Purdue University and only 16 of them were invited to interview. According to Piercy et al. (1995) the top candidates, on paper, were invited, which means that only the elite were actually interviewed.

Baker and Dunlap (1982) found that admission interviews are useful in predicting the success of medical students in their clinical clerkships. The study used seven interview variables derived from previous research to code comments during the admissions interview and assign points to those comments. The seven variables included: maturity, interpersonal skills, achievement in groups or teams, motivation/interest in medicine, judgment of ability, individual achievement, and support system.

Shehane, Epperly, Buckner, and Mack (1994) used the admission significance parameters of the Radiologic Technology Program to find a predictive relationship between admission criteria and student completion hrough a standardized evaluation consisting of 20 questions. There were a total of 70 students who had entered the program; 27% of those did not complete the program. The *t* tests revealed that the interview process was not a significant indicator.

Bias

According to Jones (2011), bias is a negative in both research and interviewing. Physical attractiveness is a valid bias in findings related to social psychology. In addition, bias was shown against obese individuals and persons with disabilities (Jones,

2011). Similarity bias has been shown when interviewers relate to applicants that are remnant of themselves. Jones identified several rater tendencies, such as, halo, severity, leniency, and central tendency errors. An interview process should safeguard against bias.

The literature review supported the importance of professional development in relation to the results of the study. The soft skills and criteria to be rated in the interview were defined, as well as, the potential bias of the interviewer.

Project Description

Implementation of the project will begin with finding the appropriate forum to deliver the workshop. The ASRT (American Society of Radiologic Technologist) and AEIRS (Association of Educators in Radiological Sciences) are two professional societies that hold annual meetings. Generally, presenters are given 45–60-minute time slots. This would not provide the platform to deliver the 3-day workshop, but it would provide the opportunity to present the research and perk the interest of program directors looking to improve their admissions process and student completion. In addition to the national platforms, there is also the local platform of the community colleges. The college in which the study was conducted has 14 degree programs, all of which require a selective admission process. Twice a year the college holds two separate professional development days. These development days include breakout session that are 30 to 45 minutes long.

With the short sessions easily accessible, I can solicit information as to whom my audience would be and where to hold the workshop. The audience would be limited to radiologic disciplines/or health science disciplines. Based on the interest, it would then

be decided to hold the workshop at the community college where I am currently employed. Administration may not be fully supportive of selective admissions interviews, but they are very supportive of professional development. Twice a year faculty is given the opportunity to create and provide professional development opportunities to the entire college.

Potential Resources and Existing Supports

The community college where I am currently employed is always looking for professional development opportunities. There are professional development days held prior to the fall semester and at the conclusion of the spring semester. Breakout sessions hold approximately 30 to 35 participants. The college has a large number of health profession faculty members who may be interested in the topic of student admissions.

Although, the college is struggling financially, there are resources available for faculty who wish to present at conferences. There are also grants available to support certain initiatives, under which this type of professional development program could potentially qualify. The administration is very supportive when it comes to professional growth.

Presenting at a national level could be possible through the national society, AEIRS, which holds an annual meeting in July, with a call for presenters at the beginning of January. Another national society is the ASRT, which holds an annual educators' meeting in late February, with a call for presenters at the beginning of the year. Either of these societies could serve as a platform to present a condensed presentation highlighting

the workshop. With recognition on a national level, the college would also see the value in supporting such a workshop.

Potential Barriers

The community college is looking for professional development opportunities that will benefit a larger audience. Finding support to hold the workshop on the campus will be a barrier because of the project's small audience. Even though the college has a large faculty of health professions, not all of them have a voice in the selective admissions process. Denial of the presentation could halt further movement of the workshop. Costs incurred for the workshop venue and the presenter can be high to both the individual and the institution. The college provides summer grants for professional development activities.

The size of the audience is not a barrier that is easily resolved, however, it would be important highlight the workshops benefits to the students and the end goal of student completion. Costs of presenting the workshop can be kept low if it is held in the geographic area, but then the cost would go to the participants.

Proposal for Implementation and Timetable

After completion of the project study, the presentations will be submitted for approval to the college professional development workshops, ASRT and AEIRS. This should occur between January 2018 and March 2018. This would be the first step in gaining support for the workshop.

The college would provide the most logical venue for the workshop. With the presentations at the previous aforementioned events, the audience would have grown to

include different disciplines. Working with the other program directors at the community college, I will send out invitations that will indicate a small fee is needed to cover breakfast and lunch. Travel expenses will be the responsibility of the attendees.

Roles and Responsibilities of Student and Others

I will be the primary presenter, with assistance from the program's clinical coordinator. The audience will be small, therefore, the group formation will be small. The intimate setting will provide students with the valuable experience of sharing their thoughts and adapting the workshop to fit their individual programs. Students will be expected to bring their experiences to the table for development and discussion.

I will handle the coordination of the workshop with assistance from the program assistant. I will determine dates, times, and class size. With the help of the program assistant, we will reserve classrooms, order breakfast and lunch, and provide participants with finalized information regarding location and available lodging in the area.

Project Evaluation

The types of evaluation planned for the project are both formative and summative. Formative evaluations can be defined as evaluations performed prior to or during the planned project. The first method of formative evaluation will be a pre survey, which will be given to the participants prior to the workshop, to obtain information about their feelings, knowledge and use of the interview process itself. The pre survey will be distributed to participants via email for them to print and bring with them on day one. Another type of formative evaluation will be given at the end of each day of the

workshop to assess the participants' knowledge and feelings. The reflective process will allow participants the opportunity to relate back to their own programs.

The summative evaluation is an indirect method of measuring participants' knowledge with the use of a survey at the end of the professional development program (Luce & Kirman, 2016). A post survey evaluation will be administered at the end of the project to determine if the participants' feelings and knowledge have changed. This would further develop the reflective process of professional development. The evaluation will also inquire about the strengths and weaknesses of the workshop. Because 3 days is a long workshop, based on the evaluations, a smaller workshop could be developed, which can be held at the initial platforms where the presentation of the workshop was given.

The use of formative and summative evaluations allows the program to develop further to meet the needs of the current and future participants. It allows the presenter to look at the program as a whole and at the individual outcomes both during and at the end of the program.

The evaluations will assist in meeting the objectives of the project study, which include: comparing and contrasting job interviews and admissions interviews, identifying acceptable and unacceptable questions, developing a clear criteria for individual programs, developing interview questions, interpreting behaviors, creating rubrics and developing an interview guide. The pre survey evaluation will aid in meeting the objectives with seeking input regarding qualities of applicants, behaviors of applicants, and their current interview process in general. The daily reflective evaluation will build

upon the existing information gathered previously in relation to the material presented. Lastly, the post survey evaluation will determine if the participants felt they met the objectives of the presentation.

The key stakeholders will find support in the evaluation process to use the interview as a criterion for selective admissions. Program directors will have research to present to their administrators to support the implementation of the interview. The necessity of identifying successful students will improve the overall completion rate of individual programs and the institution as a whole. With supporting data, administrators will benefit from student completion.

Implications Including Social Change

Local Community

Social change can be identified on a community, program and individual basis. Within the community college, the 14 programs that use the selective admissions process will embrace the use of the interview as part of their criteria. The learners are identified as program directors and/or faculty of health professions. Our affiliated clinical sites are often referred to as our community partners. These community partners will benefit from a high caliber student being selected. Students will benefit by not wasting their time in a program that is not a good fit for them. Instructors will benefit from students that fit well into their program.

Far-Reaching

The project could reach national levels within the radiologic communities through the professional societies. In addition, the project could reach out to other health

professional programs through participants. Networking and word of mouth can be a very valuable tool in marketing such a workshop. The more educators reached, the greater number of students and ultimately patients, who are impacted on a positive level. Social change initially appears to be small, but inevitability it becomes larger.

Summary

The project comes with both support and barriers, but it is realistic in nature. The success will depend on the delivery of the research and the push for necessity of the interview process within the admissions criteria of health science programs. The evaluation process will be reflective and allow participants to share and grow on their own experiences. The impact of the project on social change will begin small by selecting qualified candidates who will complete the program, but has the potential to be widespread in relation to patient care.

The purpose of the project was to develop a 3-day professional development program intended for program directors of health science programs at the community college level. The major topics for the professional development program include education interviews, legal aspects, types of interviews, interviewer behavior, rating of candidates, and soft skills. The goals of the program are to address the use of the interview for selective admissions criteria, provide training to effectively implement a student interview, and discuss advantages and disadvantages of using the interview.

In Section 4, I reflect on the project study and cover the project's strengths and limitations, as well as recommendations for alternative approaches. I analyze myself as a scholar, and examine the impact of the study on leadership and change.

Section 4: Reflections and Conclusions

Introduction

This professional development project was derived from data collected from the program; the project was intended to give program directors and faculty a foundation and guide for conducting interviews. The interview can be used as a successful tool for selecting qualified applicants through the right implementation of conducting the interview. This section addresses the strengths and limitations of the project, recommendation for alternative approaches, scholarship, project development, leadership, and change. I also suggest areas for further research and development.

Project Strengths

The strength of the project comes from the basic foundation it offers on how to conduct an interview. The project was designed to give the participants a solid foundation for admissions interviews, and the interview portion could be customized to meet the program's needs. The program is not only informative, but constructive, as a workshop. Participants can walk away with a fully developed admissions interview customized to their own program.

Schools within a college can benefit from this project by having programs follow a uniform approach to admissions. This type of admissions criteria could further define the line between general college students and those pursuing a degree in health care. Not all students have the abilities and personal qualities to function competently in the health care setting. Clearly defining those abilities and qualities would strengthen the relationship between educators and practioners. Because the number of graduates in the

fields of nursing, home health, pharmacy, medical assisting, laboratory technology, and radiography is expected to fall short of the open positions, educators must select the most qualified students for admission initially in order to graduate a sustaining number of healthcare workers (Flores & Simonsson, 2012).

Program faculty from similar 2-year associate's degree programs could network and share their experiences with one another. Educators could add a professional development experience to their portfolio. The faculty would have a means of support to draw from among fellow educators.

Project Limitations

The project was limited in three ways: (a) the time available for professional development, (b) the interest in using the interview for the selective admission, and (c) the level of support for the use of the interview in the selective admissions process. Some program directors have dismissed the idea of interviewing candidates, and have used only objective data, such as GPA and/or some form of standardized testing. Encouraging those who have decided not to embrace this practice may be difficult. To address these limitations, I would need to reach out to more people and make the professional development program easily accessible to them through an online version.

The project was also limited by the level of support in regards to the use of the interview in the selective admissions process from stakeholders, such as college administration and admissions officers. Community colleges struggle with meeting the needs of both the community it serves and the students. Community refers to the practicing radiation therapists and their expectations of the student's ability to perform.

The most common measure of student success is graduation (Nitecki, 2011). For many accredited programs, this measure goes a bit further and includes passing a board exam, obtaining a position in the field, and continuing their education while maintaining their current position.

The project is aimed to ultimately help programs assist applicants who will be successful; however, there are limitations to admissions criteria, such as other unforeseeable factors not able to be measured. Factors such as personal and financial problems affecting a student's ability to complete their education (Bonet & Walters, 2016). It is difficult to foresee these issues in the interview process. There are also many significant social and psychological reasons associated with earning a degree, which are seen particularly among adult students (Bergman et al., 2014). Being able to identify these social and psychological characteristics through the interview process may be a limitation or a strength, depending on the nature of the characteristic.

Recommendations for Alternative Approaches

When considering alternative approaches, I contemplated providing prospective students with a seminar on how to prepare for the interview portion of the admissions process for allied health programs in general. The drawback to this alternative is that students will be prepped for what to expect and the interviewer does not get an accurate assessment of the applicant. On a positive note, this type of alternative would clarify the expectations of allied health programs. The student would be better prepared and, therefore, less likely to drop out.

A second alternative approach would be a refresher in communication with the current generation. When communicating with college students today we have to take into account the evolving communication technologies (Sharrock, 2010). Students and professors are finding it difficult to communicate effectively with one another. It is imperative that the interviewer and the interviewee communicate effectively, as it could be an indicator of the applicants' communication abilities in the clinic. There should be adaptability on both sides.

Scholarship, Project Development, and Leadership and Change

Scholarship

Scholarship is an important concept if I want to further my career and education as a professor. I have grown in two separate sectors, the educational and the professional sector. The work on the project has educated and enlightened me on promotions and scholarly work through college wide committees I have joined during this time. It provided me a greater understanding of expectations of other departments outside of health professions. In the professional sector, it is difficult to appease both the college administrators and the professional administrators who work in the clinic. With a sound interview process that is supported by research, I hope to meet the standards of education administrators, while supplying the market for radiation therapy with qualified and competent radiation therapists. I find myself concerned with the graduates, who completed the program, but continue to exhibit communication deficiencies and lack of soft skills while working in the clinic.

I enjoyed learning about the research process, particularly the IRB process associated with obtaining approval. This type of knowledge can be used throughout my career, and I am now equipped with the knowledge to pass this information onto colleagues and graduates of my program. During this process, I have actually had the opportunity to share what I have learned with former students who have chosen to continue their education.

I wish I had used my time management skills better during this process. I highly recommend my students go to student services and take advantage of the tools, such as study techniques and time management skills, available to them. As a student, I have not taken my own advice.

Project Development

There is a great deal involved in project development. I learned that I cannot just present my ideas to the world because I think they are valid and right. Research is key to gaining support for the development of the project. Once the project is complete and implemented, it is not finished. It needs to be evaluated and made better. I have learned that the evaluation process needs to be assessed through methods that will produce useful information and feedback to improve upon. Otherwise, social change will not occur on any level. I have learned that the evaluation of a project should yield suggestions to any problems identified. When going to administration with issues, it is best to come equipped with not only the problem at hand, but potential solutions that are obtainable. In addition, when a problem is initially presented, I should be prepared with solid research to support the initiation of change.

Leadership and Change

I have learned that it is not easy to be in a leadership role and promote change. Being an educator is not an easy job. There are many different personalities among students and coworkers. You cannot please all of them, so even if you promote a little bit of change in your own corner of the world, it is a start to something bigger.

Change is inevitable and needs to be embraced and understood. I find myself looking for days of paper, landlines, and daily salutations. Technology is changing the way we are communicating with one another; therefore, it is important to not only move forward, but to also remind this generation of the importance of bedside manner.

In the recent years I have noticed more and more graduates of my program becoming burned out in the field of radiation therapy. The main reason good therapists begin a career as a radiation therapist is to experience the relationship between patient and caretaker. It provides the patient with a level of comfort and the therapist with a level of satisfaction. Some therapists have chosen this field for the high salary with only a 2 year degree, but those who have made this choice find it difficult to deal with the stressors of the job day in and day out. The professional development program will seek to give educators the ability to not only choose appropriate applicants, but also to give the applicants a greater sense of the career responsibility.

Leadership can be considered an evolutionary process, which changes with the times (Taormina, 2010). As an educator, I am constantly feeling the pressure to alter my practices to meet the needs of the students. In relation to the project study, the workshop will merge together many different educators to bring various perspectives and points of

view to the table. There are two separate ideas with regards to leadership; the first is skills that develop over time, the second are the emerging qualities we possess within ourselves (Taormina, 2010).

Analysis of Self as Scholar, Practitioner, Project Developer

Analysis of Self as Scholar

I have learned that as a scholar, I am not very well suited to work on long term projects. I do not have a lot of patience when it comes to continuous revision. I also find that if professional development does not relate to me, I have a hard time accepting what is being presented. I see this as a potential benefit for those fellow educators who want a professional development opportunity that they can relate directly to their profession. If I put myself in their shoes, I can develop professional development opportunities that will relate to a larger audience. I have come to the realization that scholarship is more than getting published. If I can close the gap between the education perspective and the professional perspective, I can improve satisfaction across the board. While getting published is not the only example of scholarly achievement, I think it would reach a larger audience. With the support of my colleagues at the college and in the clinic, I hope to publish this study.

As a scholar I have come to realize that I need to branch out of my field of study and focus some time and energy to being an educator. I recognize that I do have tunnel vision when it comes to my program and field. It's difficult because I have the practioner side that is passionate and I have to keep up my skills in order to teach effectively. Then,

on the other side, I am an educator and I have a certain level of responsibility to meet the goals of the college and administration.

Analysis of Self as Practitioner

As a practitioner, I have learned that social change can be small scale with an overall large impact. I learned that it is difficult to continue projects when faced with adversity. Colleagues may or may not share the same ideas as I do, so I need to focus on finding support for change I strongly believe is possible. There are times when I have to remind myself why I became a radiation therapist and why I became a teacher. I want to provide not only treatment for cancer, but a calming and supportive nature in which the patient can find comfort and security. As a teacher, I selfishly want students to be like me. I want them to be educated, competent, confident, and compassionate in their role as a radiation therapist. The students are a reflection of me.

In education we have two competing perspectives, those of the scholar and those of the manager (Sharrock, 2010). A balance between the two perspectives is necessary to achieve success as an educator and as a practioner in the field of radiation therapy. "According to Boyer (1990), the scholarship of application involves the application of disciplinary knowledge and skill to help address important societal and institutional problems, whereas the acquisition of knowledge for its own sake constitutes the aim of the scholarship of discovery" (Braxton, 2015).

Analysis of Self as Project Developer

As a project developer, I have learned that I am very detailed oriented when it comes to developing a project. The hour by hour workshop has proven to be a difficult

and time consuming activity for myself. I prefer tasks to be completed on schedule and for those tasks to be structured. For future projects, I need to allow myself time to revise and edit the presentation to ensure quality.

The skills obtained in the development of this project will be useful in future professional development activities. I could use the knowledge to research and create a project specific to clinical preceptors so that they can effectively evaluate students and understand the expectations. With the knowledge I have gained I could turn these activities into continuing education credits for current radiation therapists working the field.

Reflection on the Importance of the Work

The project will benefit my program, as well as other allied health programs, in that it will enable the selection of students, who will not only be capable of finishing the program, but will also be able to perform effectively in the clinic. I learned that admissions criteria are a significant problem, particularly for smaller programs. The data do not reflect the impact on completion for larger programs. Larger programs can statistically lose more students and still have a successful completion rate. The social change does not end at the educational level; the impact of producing quality healthcare providers will greatly impact the clinic and community. Although the research focused on my radiation therapy program, the project can be adapted to any program with a selective admissions process.

My ultimate goal is to deliver high quality care to patients in all fields. The benefits of such a project has the potential to reach numerous programs. The real

importance of my work would be for educators and practioners to recognize the need to address soft skills.

Implications, Applications, and Directions for Future Research

There is currently a lack of research on admission criteria related to completion of programs. Much of the research is based on students who are already in the program and how to make them successful through retention efforts. Focusing on the students prior to admission will not only benefit the program, but also the student, in hopes that they will find a career path better suited to their abilities.

The future of this project will be ever-changing and growing as applicants change from year to year. Also the revolution of technology will determine how we assess student abilities. This research is important, because many educators are fearful of being sued and lack the resources or the initiative to consider the interview as a selective admission criterion. I would recommend research on the predictive value of the interview and student completion in several programs. In addition, further research could be initiated to determine the resources needed to implement the interview process as a criterion, along with addressing the time constraint issue.

Rosenberg et al. (2007) suggested future research with a concentration on the reliability and validity of admissions interviews; along with the use of videotaped interviews. I have considered and discussed the use of video during the interview with my faculty. This is something worth pursuing in the future, along with investigating the legal impact.

Conclusion

In conclusion, the work completed in this project through development and research has taught me the basic necessities of completing such a task. The topic of this project is very important to me, and I hope others can see the value and the impact on future generations of health care providers.

The project strengths include the development of a guide for the interview process, the customization of the interview process to meet the individual program, a uniform approach within a specific school, and the professional development opportunity to enhance the educator's portfolio. The weaknesses or limitations of the project include the lack of time and interest in conducting admissions interviews, and the lack of support for using the interview in the selective admissions process.

The value of the project study will impact further generations of healthcare providers, while best serving the student. Students will benefit directly by identifying the relationship of admission criteria and student completion associated with health sciences programs.

References

Aaron, L., Simmons, P. & Graham-Webb, D. (2011). Academic dishonesty and unprofessional behavior. *Radiologic Technology A Journal of the American Society of Radiologic Technologists*, *83*(2), 133-140.

Aguinis, H., Culpepper, S. A., & Pierce, C. A. (2016). Differential prediction generalization in college admissions testing. *Journal of Educational Psychology*, *108*(7), 1045-1059. doi:10.1037/edu0000104

Al Alwan, I., Al Kushi, M., Tamim, H., Magzoub, M., & Elzubeir, M. (2013). Health sciences and medical college preadmission criteria and prediction of in-course academic performance: a longitudinal cohort study. *Advances in Health Sciences Education: Theory and Practice*, *18*(3), 427-438. doi:10.1007/s10459-012-9380-1

Allen, D. S., Perl, M., Goodson, L., & Sprouse, T. (2014). Changing traditions: Supervision, co-teaching, and lessons learned in a professional development school partnership. *Educational Considerations 42*(1), 19-29.

Alweis, R., Fitzpatrick, C., & Donato, A. (2015). Rater perceptions of bias using the multiple mini-interview format: A qualitative study. *Journal of Education and Training Studies, 3*(5), 52-58. doi:10.11114/jets.v3i5.818

Anderton, R. S., Evans, T., & Chivers, P. T. (2016). Predicting academic success of health science students for first year anatomy and physiology. *International Journal of Higher Education*, *5*(1), 250-260. doi:10.5430/ijhe.v5n1p250

Aworanti, O., Taiwo, M. & Iluobe, O. (2015). Validation of modified soft skills assessment instrument (MOSSAI) for use in Nigeria. *Universal Journal of Educational Research, 3*(11), 847-861. doi:10.13189/ujer.2015.031111

Baime, D., Baum, S. (2016). Community colleges: Multiple missions, diverse student bodies, and a range of policy solutions. *Urban Institute*, Washington, DC.

Baker, H. & Dunlap, M. (1982). Use of admissions interview comments to predict clinical clerkship success. *Department of Health, Education, and Welfare,* Washington, DC.

Barrett, N., Cowen, J., Toma, E., & Troske, S. (2015). Working with what they have: Professional development as a reform strategy in rural schools. *Journal of Research in Rural Education, 30*(10), 1-18.

Bergman, M., Gross, J. K., Berry, M., & Shuck, B. (2014). If life happened but a degree didn't: Examining factors that impact adult student persistence. *Journal of Continuing Higher Education, 62*(2), 90-101. doi:10.1080/07377363.2014.915445

Braxton, J. M., & Lyken-Segosebe, D. (2015). Community college faculty engagement in Boyer's domains of scholarship. *New Directions for Community Colleges, 2015*(171), 7-14. doi:10.1002/cc.20150

Bean, J. P. & Metzner, B. S. (1985). A conceptual model of nontraditional student attrition. *Review of Educational Research, 55,* 485-540.

Bonet, G., & Walters, B. R. (2016). High impact practices: Student engagement and retention. *College Student Journal*, *50*(2), 224-235.

Bonet, G., & Walters, B. R. (2016). High impact practices: Student engagement and retention. *College Student Journal*, *50*(2), 224-235.

Bradley, C. (2007). Full disclosure or fingerprints: Standardizing the landscape of nursing program admissions requirements. *Journal of Law and Education*, 36(4), 573-579.

Bradshaw, L.D. (2015). Planning considerations for afterschool professional development. *Afterschool Matters, 21,* 46-54.

Britt, B. & Aaron, L. (2008). Nonprogrammatic accreditation: Programs and attitudes. *Radiologic Technology A Journal of the American Society of Radiologic Technologists*, *8*(2), 123-129.

Covic, T., Adamson, B., Lincoln, M., & Kench, P. (2003). Health science students' time organization and management skills: a cross-disciplinary investigation. *Medical Teacher*, *23*(1), 47-53. doi:10.1080/0142159021000061422

Cohen, J. (1992). A Power Primer. *Psychological Bulletin,* 112(1), 155-159.

Creswell, J. W. (2012). *Educational research: Planning, conducting, and evaluating quantitative and qualitative research* (4th ed.). Upper Saddle River, NJ: Pearson Education.

Darolia, R., Potochnick, S., & Menifield, C. E. (2014). Assessing admission criteria for early and mid-Career students: Evidence from a U.S. MPA program. *Education Policy Analysis Archives*, *22*(101). doi:10.14507/epaa.v22.1599

Davidovitch, N., & Soen, D. (2015). Predicting academic success using admission profiles. *Journal of International Education Research*, *11*(3), 125-142.

Dixon, J. (2010). Using personality testing in radiation therapy. *Radiation Therapist A Journal of the American Society of Radiologic Technologist*, *19*(1), 83-85.

Donaldson, J., McCallum, J., & Lafferty, P. (2010). Can we predict successful completion of the common foundation programme at interview? *Nurse Education Today*, *30*(7) 649-656. doi:10.1016/j.nedt.2009.12.019

Espen, D., Wright, D.L., & Killion, J. (2006). Admission requirements for radiography programs. *Radiologic Technology A Journal of the American Society of Radiologic Technologists*, *77*(5), 366-372.

Eva, K. & Reiter, H. (2004). Where judgment fails: Pitfalls in the selection process for medical personnel. *Advances in Health Sciences Education*, *9*(2), 161-174.

Eva, K., Rosenfeld, J., Reiter, H., & Norman, G. (2004). An admissions OSCE: The multiple mini-interview. *Medical Education*, *38*(8): 314-326. doi:10.1046/j.1365-2923.2004.01776.x

Faguy, K. (2012). Emotional intelligence in health care. *Radiologic Technology A Journal of the American Society of Radiologic Technologists*, *83*(3), 237-253.

Fike, D. & Fike, R. (2008). Predictors of first-year student retention in the community college. *Community College Review*, 36(2), 68-88. doi:10.1177/0091552108320222

Fincher, M., (2010). Adult student retention: A practical approach to retention improvement through learning enhancement. *The Journal of Continuing Higher Education*, 58(1) 12-18. doi:10.180/07377360903552154

Flores, M., & Simonsson, M. (2012). Determining college performance of allied health students. *Radiologic Technology, 83*(4), 325-336.

Ghamrawi, N. (2013). Teachers helping teachers: A professional development model that promotes teacher leadership. *International Education Studies, 6*(4), 171-182. doi:10.5539/ies.v6n4p171

Gill, J. (2010). Using noncognitive variables for program admission. *AEIRS Spectrum, 21*(2), 4.

Gilliland, W. R., Artnio, A. J., Waechter, D. M., McManigle, J. E., Cruess, D. F., Calloway, M., Arze, B., Durning, S. J. (2012). Identifying themes within a medical school admission committee's reviews of applicants. *Military Medicine, 177*(9 Suppl), 16-20.

Goho, J. & Blackman A. (2006). The effectiveness of academic admission interviews: An exploratory meta-analysis. *Medical Teacher, 28*(4), 335-340. doi:10.1080/01421590600603418

Goldberg, K. (2012). Reflective journaling: Building bridges between theory and practice. *Journal of Homeland Security Education, 1*(1), 63-69.

Gomstyn, A. (2009). Unemployment rate hits highest level since 1983. *ABC News.* Retrieved from http://abcnews.go.com/Business/Economy/story?id=7243286&page=1&singlePage=true

Goswami, S., & Sahai, M. (2015). Problems and challenges in medical education in India. *European Journal of Contemporary Education, 11*(1), 31-37. doi:10.13187/ejced.2015.11.31

Handel, S. (2014). Under match and the community college student. *Change: The Magazine of Higher Learning, 46*(1) 35-39.

Hendricks, W. (2003). Using the dialectic method in the competitive scholarship interview. *Journal of College Admission, 183*, 6-15.

Hinchliffe, L. J. (2015). Professional development for assessment: Lessons from reflective practice. *Journal of Academic Librarianship, 41*(6), 850-852. doi.org/10.106/j.acalib.2015.10.004

Hirschy, A. S., Bremer, C. D., & Castellano, M. (2011). Career and technical education (CTE) student success in community colleges: A conceptual model. *Community College Review, 39*(3), 296-318. doi:10.1177/0091552111416349

Interim Report (2015). Radiation Therapy Program A, 2015 Outcome Assessment Plan.

Jackson, C. (1995). Assessing important and observable personal qualities in the general selection interview. *European Journal of Psychological Assessment*, 11(2), 75-80.

Jama, M., Mapesela, M., & Beylefield, A. (2008). Theoretical perspectives on factors affecting the academic performance of students. *South African Journal of Higher Education*, 22(5), 992-1005.

Joint Review Committee on Education in Radiologic Technology (JRCERT). (2013). *Accredited Radiation Therapy Programs.* Retrieved from https://portal.jrcertaccreditation.org/summary/accreditedprogramsearch.aspx

Joint Review Committee on Education in Radiologic Technology (JRCERT). (2013). Program *Effectiveness Data.* Retrieved from https://portal.jrcertaccreditation.org/summary/programannualreportlist.aspx

Jones, B. (2011). Assessing admission interviews of residential STEM schools. *NCSSSMST Journal*, *16*(2), 20-29.

Jones, M., Baldi, C., Phillips, C. & Walker, A. (2016). The hard truth about soft skills: What recruiters look for in business graduates. *College Student Journal*, *50*(3), 422-428.

Jorgensen, C. G. (2015). Discovering a route to revitalize the foundations of education: Reflective thinking from theory to practice. *Educational Foundations, 28*(1-4), 121-133.

Kelly, J., & Cherkowski, S. (2015). Collaboration, collegiality, and collective reflection: A case study of professional development for teachers. *Canadian Journal of Education Administration and Policy, 169*, 1-27.

Kwan, J., Childs, R., Cherryman, F., Palmer, C. & Catton, P. (2009). Admission criteria and student success in a medical radiation sciences program. *Journal of Allied Health*, 38(3), 158-162.

Kyllonen, P. (2013). Soft skills for the workplace. *Change: The Magazine of Higher Learning*, 45(6), 16-23.

Laskey, M.L., & Hetzel, C.J. (2011). Investigating factors related to retention of at-risk college students. *Learning Assistance Review*, 16(1), 31-43.

Lauer, P.A., Christopher, D.E., Firpo-Triplett, R., & Buchting, F. (2014). The impact of short-term professional development on participant outcomes: A review of literature. *Professional Development in Education, 40*(2), 207-227. doi:10.1080/19415257.2013.776619

Legg, J. (2011). Predicting, enhancing, and evaluating performance. *Radiologic Science & Education The Journal of the Association of Educators in Imaging and Radiologic Sciences*, 16(1), 3-10.

Liu, L., & Zhang, Y. (2014). Enhancing teachers' professional development through reflective teaching. *Theory and Practice in Language Studies, 4*(11), 2396-2401. doi:10.4304/tpls.4.11.2396-2401

Lodico, M., Spaulding, D., & Voegtle, K. (2010*). Methods in educational research: From theory to practice.* San Francisco, CA: Jossey-Bass.

Logistic Regression. (2013). Retrieved from http://www.medcalc.org/manual/logistic_regression.php

Luce, C., & Kirnan, P. (2016). Using indirect vs. direct measures in the summative assessment of student learning in higher education. *Journal of the Scholarship of Teaching and Learning, 16*(4), 75-91. doi:10.14434/josotl.v16i4.19371

Lucieer, S., Stegers-Jager, K., Rikers, R., & Themmen, A. (2016). Non-cognitive selected students do not outperform lottery-admitted students in the pre-clinical stage of medical school. *Advances in Health Sciences Education, 21*(1), 51-61. doi:10.1007/s10459-015-9610-4

Malik, S. K., Nasim, U., & Tabassum, F. (2015). Perceived effectiveness of professional development programs of teachers at higher education level. *Journal of Education and Practice, 6*(13), 169-181.

Mannan, A. (2007). Student attrition and academic and social integration: Application of Tinto's model at the University of Papua New Guinea. *Higher Education, 53*(2), 147-165. doi:10.1007/s10734-005-2496-y

Menard, S. (2002). *Applied logistic regression analysis*. Thousand Oaks, CA: Sage Publications, Inc.

Merriam, S. B., Caffarella, R. S., & Baumgartner, L. (2007). *Learning in adulthood: A comprehensive guide* (3rd ed.). San Francisco: Jossey-Bass.

Mertes, S. & Janokoviak, M. (2016). Creating a college-wide retention program: A mixed methods approach. *Community College Enterprise, 22*(1), 9-27.

Nitecki, E. M. (2011). The power of the program: How the academic program can improve community college student success. *Community College Review, 39*(2), 98-120. doi:10.1177/0091552111404926

Noonan, B., Sedlacek, W., & Veerasamy, S. (2005). Employing noncognitive variables in admitting and advising community college students. *Community College Journal of Research and Practice, 29*(6), 463-469. doi:10.1080/10668920590934170

Ochs, L. & Adams, R. (2008). The admissions process and student success in radiation therapy education. *Radiation Therapist A Journal of the American Society of Radiologic Technologist, 17*(2), 85-88.

Oliver, D. (1985). The relationship of selected admission criteria to the academic success of associate degree nursing students. *Journal of Nursing Education*, *24*(5), 197-206.

Oliphant, G., Hansen, K & Oliphant, B. (2008). A review of a telephone-administered behavior-based interview technique. *Business Communication Quarterly, 71*(3), 383-386. doi:10.1177/1080569908321429

Oliver, T., Hecker, K., Hausdorf, P.A., & Conlon, P. (2014). Validating MMI scores: Are we measuring multiple attributes? *Advances in Health Sciences Education, 19*(3), 472-486. doi:10.1007/s10459-013-9480-6

Orr, C., Sherony, B. & Steinhaus, C. (2011). Employer perceptions of student informational interviewing skills and behaviors. *American Journal of Business Education*, *4*(12), 23-32.

Owen, H. (2012). Reinventing professional learning and development: Ensuring relevance and building resilience. *Journal of Open, Flexible and Distant Learning*, *16*(1), 42-55.

Palacios, M., Newberry, L., & Bootzin, R. (1966). Predictive validity of the interview. *Journal of Applied Psychology*, 50(1), 67-72.

Peterson, J. L. (2016). Formative evaluations in online classes. *Journal of Educators Online, 13*(1).

Petrie, K., & McGee, C. (2012). Teacher professional development: Who is the learner? *Australian Journal of Teacher Education, 37*(2), 59-72.

Piercy, F. & And, O. (1995). Admissions criteria as predictors of performance in a family therapy doctoral program. *American Journal of Family Therapy*, *23*(3), 251-59.

Puddey, I. B., & Mercer, A. (2014). Predicting academic outcomes in an Australian graduate entry medical programme. *BMC Medical Education, 14*(31). doi:10.1186/1472-6920-14-31

Reeves, T. D., & Pedulla, J. J. (2013). Bolstering the impact of online professional development for teachers. *Grantee Submission*. doi:10.1007/s10459-011-9321-4

Roberts, W. L., Pugliano, G., Langenau, E., & Boulet, J. R. (2012). Modeling relationships between traditional preadmission measures and clinical skills performance on a medical licensure examination. *Advances in Health Sciences Education*, *17*(3), 403-417.

Robles, M. (2012). Executive perceptions of the top 10 soft skills needed in today's workplace. *Business Communication Quarterly*, *75*(4), 453-465. doi:10.1177/1080569912460400

Rosenberg, L., Perraud, S., & Willis, L. (2007). The value of admission interviews in selecting accelerated second-degree baccalaureate nursing students. *Journal of Nursing Education, 46*(9), 413-6.

Roman, M. (2007). Community college admission and student retention. *Journal of College Admission, 194*, 19-22.

Salvatori, P. (2001). Reliability and validity of admissions tools used to select students for health professionals. *Advances in Health Sciences Education, 6*(2), 159-175.

Sanderson, T. R. (2014). Relating admissions criteria to dental hygiene student retention. *Journal of Allied Health*, *43*(4), 235-240.

Saunders, R. (2013). The role of teacher emotions in change: Experiences, patterns and implications for professional development. *Journal of Educational Change, 14*(3), 303-333. doi:10.1007/s10833-012-9195-0

Schmidt, E., Homeyer, L., & Walker, J. (2009). Predictors of success on the counselor preparation comprehensive examination. *Counselor Education & Supervision*, *48*(4), 226-238.

Schneider-Kolsky, M., Wright, C., & Baird, M. (2006). Evaluation of selection criteria for graduate students in radiation therapy. *Medical Teacher*, *28*(8), e214-e219. doi:10.1080/01421590600969538

Schuetz, P. (2008). Developing a theory-driven model of community college student engagement. *New Direction for Community Colleges*, 2008(144), 17-28. doi:10.1002/cc.342

Sebok, S. S., Luu, K., & Klinger, D. A. (2014). Psychometric properties of the multiple mini-interview used for medical admissions: Findings from generalizability and research analyses. *Advances in Health Sciences Education*, *19*(1), 71-84. doi:10.1007/s10459-013-9463-7

Seidman, A. (2005). *College student retention: Formula for student success*. Westport, CT: Praeger Publishers.

Shaha, S. H., Glassett, K., & Copas, A. (2015). Sustaining student gains from online on-demand professional development. *Journal of International Education Research, 11*(3), 163-172.

Sharrock, G. (2010). Two Hippocratic oaths for higher education. *Journal of Higher Education Policy & Management, 32*(4), 356-377. doi:10.1080/1360080X.2010.491110

Shehane, D. & And, O. (1994). Admission significance parameters of the radiologic technology program. East Tennessee State University, Johnson City, TN.

Shulruf, B., Poole, P., Wang, G., Rudland, J., & Wilkinson, T. (2012). How well do selection tools predict performance later in a medical programme? *Advances in Health Sciences Education, 17,* 615-626. doi:10.1007/s10459-011-9324-1

Shulruf, B., Wang, Y., Zhao, Y., & Baker, H. (2011). Rethinking the admission criteria to nursing school. *Nurse Education Today, 31*(8), 727-732. doi:10.1016/j.nedt.2010.11.024

Smith, T. J. (2003). Connecting theory and reflective practice through the use of personal theories. *International Group for the Psychology of Mathematics Education, 4,* 215-222. Charles Sturt University, Australia.

Sondergeld, T.A., Milner, A. R., & Rop, C. (2014). Evaluating teacher's self-perceptions of their knowledge and practice after participating in environmental education professional development program. *Teacher Development, 18*(3), 281-302. http://dx.doi.org/10.1080/13664530.2014.928489

Spady, W. (1971). Dropouts from higher education: An interdisciplinary review and synthesis. *Interchange, 1,* 64-85.

Spalding, D. (2005). Legal Q&A the pitfalls of X-factor-style interview techniques. *Personnel Today*, 15.

Sparkman, L. A., Maulding, W. S., & Roberts, J. G. (2012). Non-cognitive predictors of student success in college. *College Student Journal, 46*(3), 642-652.

Spellman, N. (2007). Enrollment and retention barriers adult students encounter. *The Community College Enterprise*, *13*(1), 63-79.

Speziale, H. (2002). RN-MSN admission practices and curricular in the mid-atlantic region. *Nursing Education Perspectives*, *23*(6), 294-299.

Stegers-Jager, K. M., Themmen, A. N., Cohen-Schotanus, J., & Steyerberg, E. W. (2015). Predicting performance: relative importance of students' background and past performance. *Medical Education*, *49*(9), 933-945. doi:10.1111/medu.12779

Streitfeld, R. (2009, January 30). Unemployed workers heading back to school. *CNN.* Retrieved from http://www.cnn.com/2009/POLITICS/01/30/campbell.brown.duncan/index.html#cnnSTCText

Strickland, G. & Adams, L. (2011). Measuring the relationship between mathematics SAT scores, college algebra, and radiologic physics. *Radiologic Science & Education: The Journal of the Association of Educators in Imaging and Radiologic Sciences*, *16*(1), 3-10.

Stuart, G., Rios-Aguilar, C., Del-Amen, R. (2014). "How much economic value does my credential have?": Reformulating Tinto's model to study students' persistence in community colleges. *Community College Review, 42*(4), 327-341. doi:10.1177/0091552114532519

Stupans, I., Scutter, S., & Sawyer, T. (2011). Fostering professionalism through scaffolding in first year clinical placements. *Innovations in Education and Teaching International, 48*(3), 263-374. doi:10.1080/14703297.2011.593703

Sunarto, M. (2015). Improving students soft skills using thinking process profile based on personality types. *International Journal of Evaluation and Research in Education, 4*(3), 118-129.

Suwaed, H. & Rahouma, W. (2015). A new vision of professional development for university teachers in Libya 'It's not an event, it is a process'. *Universal Journal of Educational Research, 3*(10), 691-696. doi:10.13189/ujer.2015.031005

Taormina, R. (2010). The art of leadership: An evolutionary perspective. *International Journal of Arts Management, 13*(1), 41-55.

Taylor, S., & Kleinter, B.H. (2000). How to hire employees effectively. *Management Research News, 23*(7), 10-13.

Terregino, C. A., McConnell, M., & Reiter, H. I. (2015). The effect of differential weighting of academics, experiences, and competencies measured by multiple mini interview (MMI) on race and ethnicity of cohorts accepted to one medical school. *Academic Medicine: Journal of the Association of American Medical Colleges, 90*(12), 1651-1657. doi:10.1097/ACM.0000000000000960

Tinto, V. (1993). *Leaving college: Rethinking the causes of student attrition* (2nd ed.). Chicago: University of Chicago Press.

Utzman, R. R., Riddle, D. L. & Jewell, D.V. (2007). Use of demographic and quantitative admissions data to predict academic difficulty among professional physical therapist students. *Physical Therapy, 87*(9), 1164-1180.

Voogt, J., Laferriere, T., Breuleux, A., Itow, R. C., Hickey, D. T., & McKenney, S. (2015). Collaborative design as a form of a professional development. *Instructional Science: An International Journal of the Learning Sciences, 43*(2), 259-282. doi:10.1007/s11251-014-9340-7

Van der Merwe, C. A. (2011). Mapping a retention index across the student continuum. *Journal of Institutional Research, 16*(1), 52-68.

Van Noy, M., Trimble, M., Jenkins, D., Barnett, E. & Wachen, J. (2016). Guided pathways to careers: Four dimensions of structure in community college career-technical programs. *Community College Review, 44*(4), 263-285. doi:10.1177/0091552116652939

Ward, S. T., Downey, M. C., Thompson, A. L., & Collins, M. A. (2010). Predictors of success in dental hygiene education: A follow-up study. *The Journal of Dental Hygiene, 84*(1), 24-28.

Washington, C. & Leaver, D. (2010). *Principles and practice of radiation therapy*. St. Louis, MO: Mosby-Elsevier.

Wild, L. & Ebbers, L. (2007). Rethinking student retention in community colleges. *Community College Journal of Research and Practice*, *26*(6), 503-519. doi:10.1080/02776770290041864

Yen, W., Hovey, R., Hodwitz, K. & Zhang, S. (2011). An exploration of the relationship between emotional intelligence (EI) and the multiple mini-interview (MMI). *Advances in Health Sciences Education 16*(1), 59-67. doi:10.1007/s10459-010-9241-8

Yeung, R. (2008). *Successful interviewing and recruitment*. Philadelphia, PA: Kogan Page Publishing.

Zaidi, N. B., Swoboda, C., Wang, L. L., & Manuel, R. S. (2014). Variance in attributes assessed by the multiple mini-interview. *Medical Teacher, 36*(9), 794-798. doi:10.3109/0142159X.2014.909587

Appendix A: Profession Development Program

Professional Development Program Syllabus
Admissions Interview

Program Goals and Objectives:
At the end of the program the participant will be able to:

1. Compare and contrast job interviews with admissions interviews;
2. Identify acceptable and unacceptable questions;
3. Develop a clear criteria for your individual program;
4. Develop interview questions;
5. Interpret interviewee behavior;
6. Create a rubric to effectively rate candidates; and
7. Develop interview guide.

Major Topics:

- Educational Interviews
  - Interview stigma
  - Benefits of interviewing
  - Job Interviews vs. Admission Interviews
- Legal Aspects
  - Acceptable and unacceptable questions
  - Clear criteria
  - Candidate rights
  - Interviewer notes
- Types of Interviews
  - Situational interviews
  - Group interviews
  - Speed interviews
  - Structured vs. Unstructured
  - Mini Interviews
  - Dialect Method
  - Behavior Based
- Interviewer Behavior
- Rating Candidates
- Soft Skills

Evaluation:

- Pre-Survey Evaluation
  - Bring completed evaluation with you to the first day of the program workshop
- Daily Reflective Evaluation

    - At the end of each day you will be given a reflective evaluation to complete
- Post-Survey Evaluation
    - At the end of the program you will be given a post evaluation to be complete

Program Procedures:

Materials:

- Handouts will be provided

Educational Interviews for the Health Sciences Programs 3 – Day Workshop Day 1	
Time	**Topic/Activity**
8:00am – 9:00am	Breakfast and Registration
9:00am – 9:30am	Introductions and Pre-workshop Reflective Survey
9:30am – 10:00am	Educational Interviews An Overview
10:00am – 10:45am	Interview Stigma
10:45am – 11:00am	Break
11:00am -12:00pm	Interview Benefits
12:00pm – 1:00pm	Lunch
1:00pm – 1:30pm	Legal Aspects of the Interview
1:30pm – 2:45pm	Types of Interviews
2:45pm – 3:00pm	Break
3:00pm – 4:00pm	Catering to your Individual Program
4:00pm – 4:15pm	End of Day Evaluation

Educational Interviews for the Health Sciences Programs 3 – Day Workshop Day 2	
Time	**Topic/Activity**
8:30am – 9:00am	Breakfast
9:00am – 10:00am	Evaluating Soft Skills
10:00am – 10:45am	Identifying Red Flags
10:45am – 11:00am	Break
11:00 – 12:00pm	Body Language
12:00pm – 1:00pm	Lunch
1:00pm – 2:00pm	Role Playing
2:00pm – 3:00pm	Group Activity
3:00pm – 3:15pm	Break
3:15pm – 4:00pm	Prep for Day 3
4:00pm – 4:15pm	End of Day Evaluation

Educational Interviews for the Health Sciences Programs 3 – Day Workshop Day 3	
Time	**Topic/Activity**
8:30am – 9:00am	Breakfast
9:00am – 10:00am	Situational Interviews
10:00am – 10:45am	Speed Interviews
10:45am – 11:00am	Break
11:00am – 12:00pm	Structural vs. Unstructured
12:00pm – 1:00pm	Lunch
1:00pm – 2:00pm	Mini Interviews
2:00pm – 2:45pm	Dialect Method
2:45pm – 3:00pm	Break
3:00pm – 4:00pm	Behavior Based
4:00pm – 4:15pm	Wrap up and End of Day Evaluation
4:15pm – 4:30pm	Post-workshop Survey

Pre-Survey Evaluation

1. What type of program are you affiliated with? ***Please check all that apply***
    - 2 year degree program _____
    - 4 year degree program _____
    - Certificate _____
2. Do you currently utilize a selective admissions process?
    - Yes _____
    - No _____
3. Is the interview part of your admissions process?
    - Yes _____ ***If so, how much is it weighted toward admissions*** _____
    - No _____
4. Do you support the use of the interview as a criterion for admissions to your program?
    - Yes _____
    - No _____
5. Are you fearful of legal ramifications through the use of the interview?
    - Yes _____
    - No _____
6. What qualities do you look for in applicants?

7. If you currently do or were to use the interview what criteria would you use to rate your candidates? ***For example: body language, articulation, appearance, knowledge, etc.…***

8. Would you be part of the interview process?

9. What type of interview do you utilize or would you utilize? ***For example: structured, behavior, situational, mini-interviews, etc.…***

10. How much weight, if any, do you think the interview should carry?

Presenter Notes:

Power Point One

Educational Interviews for Health Sciences Programs

- Topics:
  - Educational Interviews: An Overview
  - Interview Stigma
  - Benefits of an Interview
- Interview Stigma
- Benefits of Interviewing
  - Goals of Interviewing (Yeung, 2008)
    - To evaluate candidates in an accurate and fair manner in order to identify the candidate(s) who will be successful in the program and eventually the field
    - Treat candidates in a professional and courteous manner
    - To help candidates understand the nature of the program
  - Benefits of interviewing all candidates
  - Benefits of pre-interview testing
    - Reveals what the candidate can and cannot do; for example mathematics (Taylor & Kleiner, 2000)
    - Choose tasks that are measureable
- Job Interviews Vs. Admission Interviews
  - Large number of applicants w/ diverse backgrounds
    - Difficult for college admissions because of specialized fields; prerequisite requirements
  - Personal recommendations
    - You must decide whether you are going to use reference letters in the admissions process

PowerPoint Two

Legal Aspects

- Six categories based on laws that have been passed to protect from discrimination (Block & Betrus, 2014):
  - Race, color, and national origin (Civil Rights Act of 1964 – expanded in 1968 and 1972)
    - Illegal question: Being a black woman, how do you feel you will it in and work with an almost all-white staff?
  - Religion (Civil Rights Act of 1964)
    - Illegal question: What religion are you?
  - Sex, marriage, and pregnancy (Equal Pay Act of 1963 – an addition to the Fair Labor Standards Acts of 1938)

        - Illegal question: You seem to be young and of childbearing age. Do you plan on having a baby in the near future?
    - Age (Age Discrimination in Employment Act of 1967)
        - Illegal question: How old are you, and do you require health benefits?
    - Affiliations (union initiated) (Wagner Act of 1935)
        - Illegal question: Have you ever been a member of or played a leadership role in a union?
    - Disability (Americans with Disabilities Act of 1964)
        - Illegal question: Do you have any physical or emotional disabilities that we should know about?
- ***Clicker Quiz and Discussion – Acceptable and Unacceptable Questions***
    - 15 acceptable and unacceptable questions will be asked to the audience
    - Two tips to avoid asking questions that may be discriminatory and therefore illegal (Yeung, 2008)
        - Only ever ask questions that are directly related to a candidate's ability to perform the job
        - Create an interview plan and work out the questions you wish to ask before the actual interview
    - Review acceptable and unacceptable questions by topic (Yeung, 2008)
        - General
        - Family and relations
        - Pregnancy and children
        - Ethnicity, race, and nationality
        - Age
        - Religion
        - Sexual orientation
- Clear Criteria
- Sound Interviewing Process
- Aim for consistency
- Candidate rights:
    - Can complain if personal comments are made about their appearance (Spalding, 2005)
- Illegal to ask how many times someone has been arrested
    - Does not mean they necessarily committed the crime because they were arrested
- You can ask if the candidate was ever convicted of a felony; however, you must be certain that the answer will not disqualify them from getting the job
- Interviewer Notes:
    - Notes should not refer to people in a derogatory or discriminatory way (Spalding, 2005)
        - Avoid comments like brown hair, big nose or blonde, big breasts

        - Under the Data Protection Act, candidates are entitled to see any notes made about them

PowerPoint Three

Types of Interviews

- Interviewing Trends
- Types of Interviews
    - Situational Interviews
    - Speed Interviews
    - Structured Vs. Unstructured
    - Mini Interviews
    - Dialect Method
    - Behavior Based
- Ground Rules

Catering to you Specific Program

- How can you tell good candidates from bad candidates?

Developing Questions

- Getting the Candidate to talk
    - The candidate should do at least 80% of the talking (Yeung, 2008)
- Closed Questions (Yeung, 2008)
    - Single word answers
    - Yes or No response
    - Advantages:
        - Allow you to get specific details/simple facts
        - Simple questions can allow your candidate to relax
        - The interviewer maintains control
- Open Questions (Yeung, 2008)
    - A variety of Answers
    - Advantages:
        - Allow candidates to reflect and comment
        - Invite the candidate to give longer responses
        - The control of the interview goes to the candidates
- The Funnel Technique (Yeung, 2008)
    - Ask a broad, open question
    - Probe
    - Confirm
    - Summarize
- The STARS Technique (Yeung, 2008)
    - Situation
    - Task
    - Action
    - Result
    - Summarize

- How does the candidate handle stressful situations?
    - Stress or 'killer' questions
    - Interviewer behavior
    - Ask for examples of stressful situations
- Hypothetical questions
- Leading questions
- Multiple questions
- Self-assessment questions
- General questions
- Overly broad questions

Choosing Interviewers:

- Experienced faculty

Length of Interview

- 30 minute sessions

Interviewer behavior (Yeung, 2008)

- Body language and voice
- Interjecting
- Taking notes
- Verbatim comments
- Notes as a legal document

Rating Candidates

- Problems and Errors (Yeung, 2008)
    - Tend to rate candidates they like higher; those who have similar backgrounds, personality characteristics, or personal interests
    - The 'halo effect'; believing a candidate who has charm and good interpersonal skills will be good at everything else
    - The 'horns effect'; allowing a minor negative aspect affect the entire interview and perception of the candidate
- Consequences of accepting the wrong candidates
    - Completion rate of the program
    - Board passage rate of the program
- Marking Frame (Yeung, 2008)
    - A set of marking guidelines
    - A list of behaviors for each competency
    - A rating scale
- Bias
- Rater tendency

Creating Interview Documents

- Pre-interview checklist
- Interviewer guide
    - Example:

        - Series of five questions; related probes; and a rating score of 1 to 5 (Rosenburg, Perraud, & Willis, 2007)
- Rating Candidates
- Problems and Errors
- Consequences
- Marking Frame
- Bias
- Rater Tendency
- Creating Interview Documents

PowerPoint Four
Focusing on the Candidate

- Topics
- Evaluating Soft Skills
- Top Ten Soft Skills (Robles, 2012):
    - Integrity
    - Communication
    - Courtesy
    - Responsibility
    - Social Skills
    - Positive Attitude
    - Professionalism
    - Flexibility
    - Teamwork
    - Work ethic
- Identifying Red Flags
- Red Flags
- Interpreting Body Language
- Body Language

Planned Activities
Role Playing

- How would you address patients and families in uncomfortable situations

Team-based Activities

- Communication: Listening and Influencing (Miller, 2015)
- ***Directions for each activity will be given to the group leader***
    - Card Triangles
    - Copy Cat
    - Listen Up
    - Me, Myself and I
    - Napkins
    - Origami

    - Shared Values
- Cooperation: Working Together as a Team (Miller, 2015)
- ***Directions for each activity will be given to the group leader***
    - Catch
    - 1, 2, 3, 4, 5 … Count Off
    - Floor Designs
    - Helium Stick
    - Pass the Card
    - Popcorn
    - Puzzled
    - Star Power
- Creativity: Solving Problems Together (Miller, 2015)
- ***Directions for each activity will be given to the group leader***
    - Balloon Sculptures
    - Card Stack
    - Consultants
    - Improve this
    - Magic Carpet Ride
    - One-Worded Stories
    - Paper Shuffle
- Teamwork: Appreciating and Supporting Each Other:
- ***Directions for each activity will be given to the group leader***
    - Blame Game
    - But Nothing (Feedback)
    - But Nothing (IDEAS)
    - Envelopes
    - First Impressions
    - Junk to Jewels
    - Kudos
    - Labels
    - Thank-You Cards
    - What I Like About Me

Mini Interviews

Situational Interviews

Structured Interviews vs. Unstructured Interviews

- Structured Interviews (Yeung, 2008)
    - Competency-based Interviews; also referred to as capability-based interviews or behavioral interviewing
        - The best predictor of future behavior is past behavior/performance
            - Question examples:
                - Tell me about a time …
                - Give me an example of a situation in which you …
                - Talk us through an instance when you …

        - Describe a situation in which you need to …
    - Competencies are the skills, traits, qualities, and behaviors of successful students
        - Examples: problem solving, teamwork, leadership, communication
    - Is a good way to catch those who are exaggerating, embellishing, or telling lies about their skills by requiring a lot of detail regarding their past performance
    - Competencies and Interview Questions (Yeung, 2008)
        - Thinking analytically
        - Planning and organizing
        - Demonstrating determination and drive
        - Serving patients/customers/etc.…
        - Working as a team
        - Learning and developing oneself
        - Influencing others
        - Communication with others
        - Building relationships
        - Managing change
    - Tailoring and creating your own competencies
    - Technical knowledge
- Aim for consistency

Speed Interviews
Dialect Method

- Candidates do most of the talking

Behavior-Based Interviews

Daily Reflective Evaluation

1. What did you learn from today's presentation?

2. What tools did you learn about that you can utilize in your program?

3. Did you find the activities helpful and beneficial?

4. What strengths have you found in the workshop?

5. What weaknesses have you found in the workshop?

Post-Survey Evaluation

1. Do you plan to utilize or alter your interview process?
    - Yes _____
    - No _____

2. The workshop changed my perspective on the legal ramifications of implementing the interview.

Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	N/A

3. The workshop changed my perspective of using the interview for selective admissions.

Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	N/A

4. The workshop was informative.

Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	N/A

5. I was able to plan and develop the interview process/guide for my program during the workshop.

Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	N/A

6. I have the foundation to develop a clear criterion for my program.

Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	N/A

7. I feel confident in developing questions and knowing the difference between acceptable and unacceptable questions.

Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	N/A

8. The length of the workshop was appropriate.

Strongly	Disagree	Neutral	Agree	Strongly	N/A

Disagree				Agree	

9. I now understand the difference between the job interview and the admissions interview.

Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	N/A

10. The workshop gave me the tools to create a rubric to rate candidates during the interview process, to include interviewee behavior such as body language.

Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	N/A

Appendix B: Letter of Cooperation

[redacted]

Letter of Cooperation from a Research Partner

October 16, 2014

[redacted]

Dear Adrienne Dougherty,

Based on my review of your research proposal, I give permission for you to conduct the study entitled Selecting the Successful Radiation Therapy Applicant within the [redacted] As part of this study, I authorize you to collect retrospective data from the Radiation Therapy Program in the form of overall GPA, pre-requisite GPA, Interview scores, written sample scores, and observation day scores from the 2010 to the 2014 cohorts. Individuals' participation will be voluntary and at their own discretion.

We understand that our organization's responsibilities include: providing access to the retrospective data from the past 5 years for the students accepted into the radiation therapy program. We reserve the right to withdraw from the study at any time if our circumstances change.

Due to the nature of the post hoc data collection, it is not necessary to receive IRB approval from this institution.

I confirm that I am authorized to approve research in this setting and that this plan complies with the organization's policies.

I understand that the data collected will remain entirely confidential and may not be provided to anyone outside of the student's supervising faculty/staff without permission from the Walden University IRB.

Sincerely,

[redacted]