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Health Science Adminstrators' Perception of Remediation with Students in the Professional Track Programs

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2016

Abstract

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MA, Wayne State University, 1993

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Doctoral Study Submitted in Partial

Requirement for the Degree of

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Abstract

Remediation to improve student retention is rapidly becoming an important part of health science programs in higher education. A career college located in the midwestern United States implemented remediation for students to address declining enrollment health science professional-track programs. The purpose of this qualitative case study was to explore how remediation was carried out by college instructors and their perceptions of instructional best practices for students in health science programs in the context of current research. The conceptual framework that guided this study was based on constructivism and adult learning theory. Research questions focused on how instructors were carrying out the processes for remediation and explored their views of effective remediation practices. The sample of 11 participants included 4 program directors, 3 fieldwork coordinators, and 4 adjunct faculty members. Data were collected from individual interviews, classroom lab observations, and program documents. Data were open coded and analyzed for themes. Findings indicated that instructors who conducted remediation used instructional techniques that matched effective practices found in the current research literature, e.g. videos, case studies, patient simulation, mind-mapping, and mock practicals. Based on the findings of best practices, recommendations were proposed for the development of a formal remediation plan for the health science programs to improve the success rate for student completion. This study may promote positive social change by standardizing the use of effective instructional techniques for remediation in the professional-track programs, thereby improving student retention and declining enrollment in the career college health science programs.

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Dedication

I dedicate this research study to my father who stressed the value of education for me but was unable to see me complete this journey. He showed me his strength until the end of his fight against multiple strokes. Watching him strengthened my resolve to complete this study.

I also dedicate this study to Tamara Gerber, a colleague who was on this journey with me but passed away before she was able to complete her Ph.D. She inspired me to complete this study for the both of us.

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Section 1: Introduction to the Study

The problem that I focused on in this study was the declining enrollment at a local college in the professional-track health science programs from 2012 to 2015. Programs typically lost students each year as program content became more difficult. The administrators, particularly those of the limited enrollment programs, were charged with helping to increase retention by providing remediation to the students in the professional track of their programs. They were tasked with developing a remediation process for the students in their programs. This process was mandatory and each instructor was responsible for remediating the course content when students experienced difficulty. The students were not allowed to transition to the next phase of their program or attend clinical rotations or internships until the remediation was completed. Remediation had been carried out at the local campus but had not been executed system wide.

Remediation was intended to increase the retention rate of the students in the health science programs at the local college. Bahr (2008) explained that "remediation is by definition, a 'remedy' intended to restore opportunity to those who otherwise may be relegated to meager wages, poor working conditions, and other consequences of socioeconomic marginalization" (p. 422). Giving the students a second opportunity to pass may at difference stages of the programs may decrease the attrition for the health science programs.

Bettinger and Long (2008) found that remediation positively affected students' college outcomes. A "student must complete remediation to improve in areas where they have demonstrated deficiencies" (Pennington & Spurlock, 2010, p. 485). The remediation

process in the college health science programs varied. If remediation was going to be effective, both the instructor and the student had to be active participants with the planning. The review of the literature for this study provided various methods to plan a remediation program for students currently in health-related programs. Researchers have suggested that acknowledging interpersonal skills, identification of students' learning needs, developing an individualized lesson plan, and self-reflection are necessary as instructional strategies for planning a remediation process (Leung & Ratnapalan, 2011; Murray, 2011; Wong & Li, 2011). Leung & Ratnapalan, 2011; Murray, 2011; Wong & Li, (2011) noted that concept mapping, latent class analysis, face-to-face instruction, and using laboratory simulations as various strategies for successful completion of the remediation program. I discuss these plans and strategies in the literature review in Section 2.

The local college that I examined implemented a learner-centered instruction approach to instruction and faculty were observed and evaluated according to how they effectively delivered this approach to students. Student-led education had been cited in the literature review. The proposed research site included one local campus of 11 campuses and focused on the five programs that have a limited enrollment application process and award an associate of applied science degree. The leaders of these programs were encouraged to increase retention in their respective programs because there was a steady reduction in student registration during the past 3 years system wide.

Problem Statement

The initial problem was a steady decline in student enrollment at the local college. It was important for the limited enrollment programs to retain the students who were accepted into their programs. The instructors were charged to start remediation of students who were struggling. A uniform system-wide remediation process was lacking at the career college system located in the midwestern United States. Remediation was a process in place at the local campus but had not been carried out system wide. Remediation occurred after students failed an end of quarter laboratory (lab) practical. The lab practical was a culmination of the techniques learned during the quarter. Each program approached remediation differently, and a set time frame did not exist for the remediation to occur.

If the students were allowed and wish to continue in the program, remediation put them behind other students in the cohort. This delay also affected the clinical rotations. The clinical coordinators had to locate current sites willing to accept the students off rotation or find new sites for the remediating students. The instructors also had to use added time to focus on remediation with these students. This remediation occurred individually or in groups.

Nature of the Study

This study focused on the views of college instructors on best practices for remediation of students in health science professional-track programs. Three research questions guided this study:

1. How are the health science instructors providing remediation at the local college?
2. In what ways are the instructors using best practices noted in the current research during remediation?
3. What are health science instructors' perceptions regarding best practices for remediation of students in health science professional-track programs?

I conducted the investigation using interviews, observations, and document analysis of each program. The interviews were with the participants who were the directors, fieldwork coordinators, and instructors of the limited enrollment professional-track programs at the local college. I recorded and transcribed the interviews verbatim. I analyzed the data using a thematic coding process. Guest, MacQueen, and Namey (2012) indicated that "thematic analysis move beyond counting words or phrases and focus on identifying and describing both implicit and explicit ideas within the data" (p. 10). After the analysis was completed, "Codes were developed to represent the identified themes and linked to raw data as summary makers for later analysis" (Guest et al., 2012, p. 10). Observations were conducted with study participants who were full-time health science program faculty members. The documents analyzed included program files. I discuss this in detail in Section 3: Research Method.

Purpose of the Study

Because remediation was now mandatory, it was important for the instructors to own a process benefitting the students, programs, college, and system as a whole. The purpose of this case study was to explore how remediation was being carried out by

college instructors and to explore their perceptions and views of instructional best practices for students in health science professional-track programs in the context of current research.

Conceptual Framework

A completed study should have a theoretical or conceptual framework. It was suitable for this study to include a conceptual framework. Miles and Huberman (1994) pointed out that "a conceptual framework explains either graphically or in narrative form, the main things to be studied—the key factors, constructs, or variables—and the presumed relationships among them" (p. 18). The main aspect proposed in this study was the remediation process of the college. It was important to acknowledge the best practices to successfully remediate students. Because the remediation was being conducted with adult students, it was natural to desire an understanding of the most suitable procedures to complete a remediation process.

This study employed blending two theories as the conceptual framework. It included the adult learning theory and the constructivist learning theory. The adult learning theory made the notation of differentiating learning in childhood from learning in adulthood (Local College, 2014). The focus of the constructivist learning theory is on individuals having the knowledge of how they learn as well as making the learning personalized. These two theories were the basis for this study. I discuss the conceptual framework further in Section 2.

Operational Definitions

Limited enrollment program: Enrollment in the professional track of some programs was limited because of clinical site availability. Students compete to earn acceptance into these programs. Selection criteria have been developed to choose the most qualified students for limited enrollment programs (College Catalog, 2014, p. 99).

Medical laboratory technician: The medical laboratory technician is a skilled professional, who works in a clinical laboratory setting supervised by a qualified physician or medical technologist (College Catalog, 2014, p. 109).

Occupational therapy assistant: The occupational therapy assistant is a skilled health care practitioner supervised by a licensed occupational therapist in the planning and treatment of individuals affected by physical, emotional, and developmental disabilities (College Catalog, 2014, p. 110).

Opticianry: An optician is a professional responsible for dispensing eyewear, including spectacles, contact lenses, low-vision aids, and accessories (College Catalog, 2014, p. 110).

Physical therapist assistant: The physical therapist assistant (PTA) is a technical health care worker performing patient care supervised by a licensed physical therapist (College Catalog, 2014, p. 112).

Remediation: "Remediation can be defined as the act or process of correcting a deficiency" (Cleland, Mackenzie, Ross, Sinclair, & Lee, 2010, p. e185).

Surgical technology: A surgical technologist possesses expertise in the theory and applying sterile and aseptic technique and combining the knowledge of human anatomy,

pathophysiology, surgical procedures, and implementing tools and technologies to facilitate a physician's performance of surgery (College Catalog, 2014, p. 114).

Assumptions

Assumptions when conducting research have to be taken into consideration. Creswell (2009) noted that assumptions are beliefs held by the researcher about certain aspects of his or her research. The assumptions place the "research into a context that supports confidence in the likelihood that it will be completed as planned and will provide answers to the questions under investigation" (Hancock & Algozzine, 2006, pp. 71–72). This study was based on the following assumptions: (a) remediation is needed for failing students in professional-track health science programs, (b) the potential participants will be willing to take part in the study, (c) participants and researcher will be able to bracket their biases, and (d) participants will be able to express their perceptions of remediating with students in the health science professional-track programs.

Limitations

Limitations are important to note for all studies. Hancock and Algozzine (2006) stated that "limitations are factors that may affect the results of the study and that are generally beyond the control of the researcher" (p. 71). The authors stated this part of the study is "the limiting conditions or restrictive weaknesses of the study" (Hancock & Algozzine, 2006, p. 75). One limitation of this study included nonrandom sampling procedures with a small sample size. The reason for this is that the local campus was small and the study was confined to the five limited enrollment programs offering an associate of applied science degree at the local college.

Because all of the potential participants came from only the local campus, the results are not generalized to the college system or a greater population including other colleges or universities. This was the second limitation. Another limitation was the limited empirical research about remediation of the five programs associated with the study. Although extensive research exists on remediation in other health-related programs such as medical school, nursing, and pharmacy, little research addresses the types of programs supporting the focus of this study. Conclusions based on participants' perceptions may also be considered a weakness of this study.

Scope of the Study and Delimitations

The scope of this study focused on specific remedial programs at the local campus of the college. The system had nine campuses. The study included only instructors teaching in the professional track of the health science limited enrollment programs offering an associate of applied science degree at the local campus. The limited enrollment programs offered on the local campus included: Medical Laboratory Technician, Opticianry, Occupational Therapy Assistant, Physical Therapist Assistant, and Surgical Technology.

Significance of the Study

Study findings promoted a deeper understanding of remediation at the local campus. Remediation is a concept increasing throughout the country in health-related and medical programs (Winston, van der Vleuten, & Scherpbier, 2010, p. 1038). The professional application was to help the instructors in acknowledging the best practices for remediation of students in professional-track programs of health science in a college

located in the midwestern United States. The study may promote positive social change if the remediation process included effective instructional techniques which could lead to an increase in retention of the college and lower the declining enrollment of the college's health science programs.

Summary

Section 1included a brief overview: introduction, problem statement, nature, purpose, assumptions, limitations, delimitation, and significance of the study. This section also included the conceptual framework and operational definitions. Section 2 includes a review of relevant literature. In Section 3, I introduce the method for the study and include data collection and analysis procedures. Data collection included interviews with the faculty members of the five limited enrollment programs offered at the local campus, document analysis of student learning contracts and remediation plans, as well as observations of the lab courses of the five limited enrollment programs. In Section 4, I provide the results of the study including how the data were managed along with the findings, whereas in Section 5, I provide an overview of the study including interpreting results, implications for social change, recommendations for action, recommendations for further study, and a reflection.

Section 2: Literature Review

Introduction

In the literature review for this study, I investigate remediation from various viewpoints. The review includes a theoretical and historical review of the concept of remediation and a detailed explanation of the conceptual framework. The review includes information from scholarly articles that focused on the need for remediation at the college level in general and remediation of students who are in health-related programs. Such health-related programs included medical, nursing, and pharmacy schools.

If remediation is needed throughout a student's matriculation, it is important that the instructors provide the remediation using the best practices. Often, remediation carried negative connotations, but remediation programs can positively influence college access and student success (Davis & Palmer, 2010, p. 503). Remediation of students in professional-track health science programs was an important part of the literature review. Remediation for these students may occur during the program, during the clinical rotations, and after completing the program to help the students pass the national board examinations. The literature included addressing each of these areas and provided information on the best practices for improving remediation in the health science area of education.

The review is comprehensive, and I conducted the review using various databases. They included ERIC, Education Research Complete, Education from SAGE, Google Scholar, Thoreau, Medline with Full Text, Nursing & Allied Health Source, and Health & Medical Complete. I used the ProQuest Central database to search for

dissertations about remediation. The initial search term was *remediation*. The terms *education, college, allied health,* and *health-related* were included in the search and I used various combinations of these terms.

Limited number of peer-reviewed research exists on remediation in physical therapy programs. I expanded the search to other health-related programs including medical schools, nursing, and pharmacy. The review primarily focused on articles published within the 5-year span but included others as a basis for the historical context. Saturation was reached as it related to remediation in physical therapy programs. The search retrieved a greater number of articles about other health-related programs and remediation.

Conceptual/Theoretical Framework

The essential concept for this study was the idea of remediation of students in the professional-track portion of limited enrollment health science programs. Additional related concepts included shared control, facilitators of learning, and self-directed learning. Remediation of these students needed the instructors to have an understanding of how to teach adults as well as the knowledge blending the information for use in a clinical setting. There are two theories that addressed these concepts.

Constructivists also stress the cumulative nature of learning. This means "the new information must be related to other existing information for learners to retain and use it" (Knowles, Holton, & Swanson, 2005, p. 192). Constructivists favor an approach to learning that is different from what has been done in the past (Knowles et al., 2005, p.

192). There was a need for different approaches to teaching for various student learning styles.

The conceptual framework was supported by the adult learning theory or andragogy and the constructivist theory. Andragogy and constructivism are two theories that are closely associated. Knowles et al. (2005) stated, "The parallels between moderate views of constructivism and andragogy are rather striking as both stress ownership of the learning process by learners, experiential learning, and problem-solving approaches to learning" (p. 193). Knowles was also instrumental in promoting self-directed learning that is also closely connected. If adult students have taken ownership of their learning, like to experiment with different activities, and are able to problem solve, then the same students will also be able to add some input into their learning. Self-directed learning was an important topic for this study because students would have a difficult time completing a remediation program if they have not taken an active interest in their learning.

Knowles (1975) offered three reasons why people are more successful when they are involved in self-directed learning; people are "proactive learners" when they learn more and are more aware of the natural processes of psychological development, as well as when they have taken initiative in their own learning (pp. 14–15). Remediation will be ineffective if the instructors do not understand how adults learn or the students themselves do not have an understanding how they learn. Obtaining the health science instructors' perceptions through interviews and observations provided insight on how remediation is currently taking place at the local college. If the current remediation was

not effective, then the students would not be benefiting; hence, the remediation would be time consuming and costly.

Historical Context

Remediation was a process used at various levels during the educational tenure of a student. The National Center for Education Statistics (NCES) has been tracking the need for remediation for many years. The U.S. Department of Education's Elementary and Secondary Education Act indicated that "Every student should graduate from high school ready for college and a career. The department also noted that "four of every 10 new college students, including half of those at two-year institutions, take remedial courses, and many employers comment on the inadequate preparation of high school graduates" (U.S. Department of Education, 2010, p. 7).

If students were not prepared for college, then remedial courses would be unavoidable at the college level. Boylan and Saxon (1998) stated remedial courses have been offered at community colleges since their existence. It has been noted, "remedial coursework represents a lifeline in the ascent to financial and social structural stability for individuals who face significant deficiencies in foundational subjects" (Bahr, 2010, p. 209). This was very important since the U.S. Department of Education had made new rules for receiving student aid by college students in 2013. They have instituted a "maximum eligibility period" limiting the time students can receive Direct Subsidized Loans to 150% of the published length of any given program meaning students enrolled in a 2-year program will only be given 3 years of financial aid to complete their program. According to federal guidelines, students enrolled in a 4-year college will be given 6

years of financial aid to complete their program or degree (Federal Student Aid, 2013). These new rules make colleges more accountable for providing an adequate education for students in a timely manner.

Colleges have to do a better job of preparing students for the coursework within their chosen programs. Increased preparation will help the students to complete their programs in a timely manner. Remedial coursework may be needed for general education courses as well as specific program courses. The authors suggested the need for remediation in writing and mathematical courses (Bahr, 2010; Bahr, 2011; Mahapatra, Das, Stack-Cutler & Parrila, 2010). Because colleges are going to be held accountable for ensuring that students matriculate successfully, "it is clear that remediation plays a prominent role in higher education" (Bahr, 2010, p. 211). Continuing to provide remedial coursework is going to be important.

Remediation is a skill used throughout a student's lifetime. Schnee (2014) found that there was "evidence of a positive impact of remediation" (p. 244). Mahapatra, et al. (2010) discussed using a remediation program with students as early as fourth grade. Remediation can be used for students in various subjects. Reading comprehension was the interest for the study by Mahapatra, et al. Bahr (2012) explored mathematical remediation as well as writing sequences. Lingwall (2010) stated remediation has also been used in journalism and mass communication programs. Davis and Palmer (2010) discussed the need for remediation of African American students. Remediation may be needed for various reasons.

The need for remediation was researched as it related to post-secondary preparation as well as the completion of college as a whole. Howell (2011) addressed the need for students to have remediation in college on their entrance into institutions. Howell, Kurlaender, and Grodsky (2010) "Investigated how participation in the Early Assessment Program, which provides California high school juniors with information about their academic readiness for college-level work at California State University campuses, affects their college-going behavior and need for remediation in college" (p. 726). The historical knowledge of remediation coupled with the ability to understand how individuals learn was an important piece for providing effective remediation of students.

Precollege Remediation

Remediation was a process used for many years but regarded as tutoring. Mahapatra, Stack-Cutler, and Parrila (2010) conducted a study about remediating reading comprehension for students in the 4th grade. They used the Planning-Attention-Simultaneous-Successive (PASS) Reading Enhancement Program to promote developing higher level tasks such as "activating relevant background information, generating inferences while reading, being less aware of when they do not understand what they read, and combining information in working memory to form mental representations of text" (Mahapatra et al., p. 429). The authors' study focused on cognitive-based training programs relevant to reading comprehension as early as grade 4.

Some might ask if teachers have the knowledge to help children learn, and since this is occurring very early in the students' education, why students are not prepared for high school or college. Howell, Kurlander, and Grodsky (2010) studied the effects of

providing an Early Assessment Program (EAP) to students before their senior year as a way to bridge the gap between K-12 education and postsecondary expectations. The goal of the EAP was to "improve the quality of information students have about the California State University standard for minimally acceptable levels of academic preparation in math and English" (p. 745). This information would be important for students to know. The NCES has documented an increased number of remedial courses being offered in colleges and universities. Bahr (2010) reported that "Nearly three in ten first-time freshmen (28%) enrolled in remedial coursework during the fall of 2000 (p. 211). It might lessen the frustration for students entering college if they know in advance remediation may be needed for them to be successful at the college level.

The knowledge of the number of students still needing remedial coursework in college was not enough to increase or change teacher instruction because, in 2001, the U.S. Department of Education established the No Child Left Behind, Elementary and Secondary Education Act (ESEA). One important piece of this act was to require states to develop a process for evaluating the teachers and for teachers to become "highly qualified." There is still documentation supporting that students are not college ready. Because of this documentation, the United States Department of Education developed A Blueprint for Reform, the reauthorization of the Elementary and Secondary Education Act. This March 2010 Act focused on the college and career-ready students by raising their standards for setting clear goals. This act needed the states and Intermediate School Districts (ISD) to develop and carry out systems of teacher and principal evaluation and support to identify those teachers and principals who needed support. This act also noted

that “Every student should graduate from high school ready for college and a career” (U.S. Department of Education, 2010, p. 7). With the current acts and laws in place, it was difficult to understand why many colleges were still required to provide remediation to the freshmen students.

College Remediation

Many colleges and universities have acknowledged the need for remediation of their students. Howell (2011) stated that “According to the U.S. Department of Education, 75% of postsecondary institutions in the United States offer remedial courses in mathematics and English” (p. 292). With this high percentage, remediation must be meaningful for the students because, as Bahr (2012) stated a majority of the students do not achieve competency in these courses. If the students are not successful in the remedial courses, there is a greater chance that they will not be successful in college. Bahr (2012) suggested that low-skill remedial students may be more likely to drop out of the remedial sequence. Adequate assessment plays an important part in addressing the needs of these students.

There are many other factors that contributed to students being unsuccessful during the time that they are taking remedial coursework. Those factors may include race and ethnicity and or socioeconomic status (Bahr, 2012, p. 662). Remediation is distinctive in higher education because it aims to equalize attainment between advantaged and disadvantaged groups. Bahr (2010) stated, “Historically, we would expect both groups would benefit from remediation, advancing up to college-level proficiency in core subjects at comparable rates” (p. 210), but often this has not been the case. Remediation

has been around long enough to have smoothed out the inconsistencies of students attending college for the first time.

There are still many students entering college with educational deficiencies. It should be noted that "Policymakers and college leaders face tough choices pertaining to equity and excellence in higher education" (Davis & Palmer, 2010, p. 513). It has been noted there are academic deficiencies as well as racial disparities (Davis & Palmer, 2010; Bahr, 2010). Davis and Palmer (2010) found postsecondary remediation is needed to have college access and success for African Americans. Bahr (2010) also pointed out that Blacks and Hispanics face significant disadvantages with remediation. The remediation needs to be meaningful and centered around each student's individual learning style.

One should also be aware that teachers who are educating African-Americans and/or Hispanics may have an added challenge. Howell (2011) stated, "High schools with greater African American and Hispanic representation have higher rates of math and English remediation at California State University" (p. 306). Davis and Palmer (2010) also noted that African Americans are most likely to rely on postsecondary remediation as a means of getting into college and are twice as likely to be found in remedial programs as white students (p. 503). These students should be reassured that remediation is needed for many students as a developmental stepping-stone to the 100 level courses.

Why Is Remediation Needed?

Students often have deficiencies in writing and math. These deficiencies may overlap into various programs including journalism and mass communication programs or even the health science programs. There are many reasons why remediation is needed.

Teacher experience may be a determining factor. Teachers with master's degrees appear to help the student become more successful than teachers who have lesser degrees (Howell, 2011, p. 307). Bhar (2012) noted that being first-time college students may play a part as well. Students cannot just fill out an application and submit their transcripts from high school anymore. Many factors have to be taken into consideration, and assessment is the key.

Remediation for Students in Health Science Programs

The focus of this study will be on the need for remediation of students in health science professional-track programs. One might assume that the students who are accepted into health science program are qualified students, but this is not always the case. Many of those students have mastered test taking or may have made it through the prerequisites without being adequately challenged. Every student who may have the desire to become a doctor, medical laboratory technician, nurse, occupational therapist, optician, pharmacist, physical therapist, or surgical technician may not have the intellectual capacity to complete those programs without needing remediation (Maize et al., 2010, p.1). This may be another reason to include remedial coursework in these programs.

Remediation may be needed to help students with the preadmission coursework. This may come in the form of tutoring. Documented tutoring has been provided at the local college for students in prerequisite courses including anatomy and physiology, pathophysiology, and kinesiology. Olivares-Urueta and Williamson (2013) conducted a study in which 144 students within the clinical nutrition, physical therapy, physician

assistant studies, and prosthetics and orthotics programs were offered to tutor. Their study also had 144 students who were a non-tutored group. Olivares-Urueta and Williams (2013) found that the students who needed more tutoring had lower GPAs and GRE scores. This supports that the students may not be prepared for the programs for which they are applying.

Once the students have been accepted into their professional-track program of choice, remediation will still be needed for many of them to complete those programs (Humphrey, 2010; Leung & Ratnapalan, 2011; Lynn & Donovan, 2011; Maize et al., 2010; and Pennington & Spurlock, 2010). Remediation may occur when students are in the process of completing the course work (Pennington & Spurlock, p. 486). The remediation needs to occur to satisfy the program director, accrediting organization or licensing body (Leung & Ratnapalan, 2011, p. 155). Remediation may need to also occur when the students reach their clinical rotations. It is important to note that "students struggling in the clinical environment present a risk to patients in the clinical setting" (Lynn & Donovan, 2011, p. 173). Lynn and Donovan indicated that remediation is needed to ensure that patients are not harmed.

Remediation of Medical Students

The time students spend in medical school, it could be assumed that all of the students are prepared when it is time to work in a hospital. This is not always the case. Many have presented research that says otherwise. Alkhayal et al. (2012); Humphrey (2010); Leung and Ratnapalan (2011); and Winston, Vleuten, and Scherpbier (2010)have conducted studies that highlighted various aspects of remediating with medical students.

An assessment was the focus of many researchers. Humphrey (2010) conducted a study on assessing physicians internationally using a self-completion questionnaire. The author noticed the assessment style varied. Some programs focused on summative assessment while others centered on formative assessment. According to Humphrey (2010), summative assessment explored "Discrete elements of competence or performance with the aim of producing reliable" assessment, while formative assessment "actively engages the physicians in achieving a greater understanding of their thinking and decision making" (p. 32). Both summative and formative assessments play an important role when remediating students.

Assessments may be used in other ways as well. Alkhayal et al. (2012) discovered varied uses of assessment tools. The authors specified the assessment tools as subjective technical skills assessment by 42% and non-standardized, subjective, or direct observation of technical skills assessment by 59% of participants (Alkhayal et al., pp. 99-100). Some additional assessment tools noted included the Objective Structured Assessment of Technical Skills (OSATS), videotaping, and the portfolios of the surgical residents (Alkhayal et al., p. 100). Todres, Tsimtsiou, Sidhu, Stephenson, and Jones (2012) stated students who were re-sitting for assessments did not cope as well as the high achievers (p. e328). They also found that the re-sitters had a difficult time explaining how they learn (Todres et al., p. e328). Self-assessment played an integral part in the success of medical students who were taking part in a remedial program.

Remediation of Nursing Students

Authors of nursing research address many aspects of successful completion of nursing clinical education. Lynn and Twigg (2011) and Wong and Li (2011) addressed simulation and personality characteristics respectively. Lynn and Twigg (2011) stated "The use of simulation in the literature is supported as an effective teaching strategy and has been found to help students with their confidence, knowledge, and clinical judgment, (p. 173). Wong and Li took a different approach to their study. The authors focused on interpersonal characteristics that coincided with providing safe anesthesia practice. They also stated the interview process did not predict clinical performance. One will have to consider many conditions for providing a suitable remediation program for nurses. Nursing programs also considered the students who have had difficulty with successful completion of the National Council Licensure Examination for Registered Nurses (NCLEX-RN). Licensure pass rates were important to the livelihood of current nursing programs. McCarthy, Harris, and Tracz (2014) focused on the significant correlation between academic variables and the NCLEX-RN (p. 156). This showed "measurements of academic aptitude often used to determine entrance into nursing programs are helpful in determining how students will perform on subsequent program assessments" (McCarthy et al, 2014, p. 156). Pennington and Spurlock (2010) focused on remediating interventions to improve the NCLEX-RN passing rates. Pennington and Spurlock (2010) stated that "All studies reported an increase in NCLEX-RN pass rates after intervention implementation" of remediation (p. 489). This reiterates the need for remediation from the beginning to the end of any health related program.

Remediation of Pharmacy Students

Pharmacy schools have policies for remediation as well. Ragan, Virtue, and Chi (2013) focused on assessment, while Poirier, Kerr, and Phelps (2013) focused on academic progression and retention. Ragan et al. (2013) used "In-class role plays, laboratory simulations, and objective structured clinical examinations (OSCEs)" as some of their methods of assessments (p. 1). The students reported a high satisfaction using "case realism and challenge following their participation" in the University of Kansas School of Pharmacy program" (Ragan et al., (2013), p. 5). The authors stated they were able to set up validity because of their ability to identify low performance at the advanced pharmacy practice experience sites (Ragan et al., (2013), p. 5). Ragan et al. acknowledged it is important for remediation to be facilitated before the students were allowed to be responsible for patient care (p. 1), asserting that safe patient care is non-negotiable for all medical fields of study.

Progression through the program falls under set standards and guidelines. There are progression policies "specify the conditions under which a student pharmacist cannot proceed in the curriculum" (Poirier et al., 2013, pg. 1). The authors focused on progression (maintaining minimum grade point average (GPA), probation (not maintaining minimum GPA), and remediation (Poirier et al., 2013, p. 2). There are three reasons noted when students had to be put on hold. These included "remediation of a specific portion of the curriculum (course), repeat of a section of the curriculum (semester or year), or dismissal from the program" (Poirier et al., p. 1). The authors stressed it was important to closely monitor students at each level.

Remediation of Physical Therapy Students

Physical therapy clinical education is probably the most important step for physical therapy students in completing their education. The American Physical Therapy Association (APTA) and Commission on Accreditation of Physical Therapy Education (CAPTE) have standards to help colleges in providing students with a quality clinical education. One aspect of students successfully completing their programs is developing critical thinking skills. Gilliland (2013) stated, "The development of clinical reasoning skills is a crucial component of professional physical therapist education" (p. 64). Critical thinking is also known as clinical reasoning. This is important because patients do not present as textbook cases and students need to have the ability to make adjustments to a patient's plan of care regularly.

If faculty members are going to help the students successfully, they would have to understand when and how to prepare the students for the clinical rotations and have a greater understanding when the students have developed their critical thinking skills. Huhn, Black, Jensen, and Deutsch (2013) found that the greatest changes in clinical reasoning skills occurred during the didactic portion of the student's education, not during clinical rotations (p. 29). This would align with providing the remediation before the student was approved to attend clinical rotations outside of the college. Seif, Brown, and Annan-Coultas (2013) stated: "Clinical reasoning is the decision-making process used by clinicians to determine the suitable examination and treatment interventions" (p. 32). Huhn et al. and Seif et al. (2013) suggested students should perform self-assessments throughout their programs to determine their level of clinical reasoning ability. The

authors suggested that the self-assessment should take place at the beginning of the program and at different intervals.

Researchers and instructors in the physical therapy profession have done much research on best practices in helping students successfully complete their programs. Many of the teaching techniques could be used during the remediation process. Some of the techniques include integrated clinical experience (ICE), patient simulation experiences, and increasing technology in the classroom, online learning, and lectures, and delivering information in different ways, such as demonstration, oral explanations, kinesthetic, and written (Francis-Coad & Hill, 2014, p. 44). The demonstration addressed the visual learning, the oral explanation addressed the aural learning, and the kinesthetic addressed the hands-on and self-practice learning. The written information, through role-play scripts and the laboratory workbook, allowed the students to read for clarity (pp. 44-45). Some additional things that students stated helped their learning were feedback, mock practical exams, discussion with peers, self-practice, and explanation of clinical relevance (Francis-Coad & Hill, p. 45). These ideas may be taken into consideration with the remedial education of physical therapy students.

Early Acknowledgement of Failing Students

To help students succeed in completing professional-track programs, it is important for instructors to acknowledge when students are not reaching competency early in the program. Lynn and Twigg (2010) stated, "Educators are failing those who fail by not providing appropriated assistance and guidance for students who are struggling" (p. 172). This is where the remediation should start. Winston et al. (2010) insisted remedial programs for at-risk students should be mandatory. As soon as there is a deficiency noted, instructors need to begin to develop a plan for those students, and students should be included in this process. Humphrey (2010) stated, "The more formal programs placed considerable emphasis on planning and oversight, agreeing to individualized objectives and action plans, and drawing up a formal educational contract" (p. 34). The contract makes both the institution and the student accountable for the student's success.

There are ways of knowing the areas in which the students are lacking. McCarthy et al. (2014) suggested there are certain predictors of the students' pass-fail rates of the NCLEX-RN specifically. These include pre-program GPA, communication, reading, math, science, and English (McCarthy et al., p. 154). Students aware of their weaknesses can develop a plan for the clinical rotations as well as study for their exams with the hope of increasing the students' pass rates on their national licensure exams.

How Should the Remediation Be Provided?

Remediation should be provided in the educational setting. Cleland et al. (2010) stated "Remediation usually consists of three steps - diagnosis, remedial activities, and re-testing" (p. e185). This should include "individualized remediation plans to address specific academic deficiencies of students" (Maize et al., 2010, p, 2). Ragan et al. (2013) added "in-class role-plays, laboratory simulations, and objective structured clinical examinations (OSCEs) are among several methods for assessing clinical competence during performance" (p. 1). Remediation may also occur in the clinical setting. This will give students the real-life experiences needed to help them learn.

Who Should Provide the Remediation?

Instructors currently teaching the students should provide the remediation. Humphrey (2010) acknowledged that the remediation "programs were designed and run almost entirely by physicians" for the physicians (p. 34). This would be equivalent to clinical instructors for other programs. Clinical instructors may serve a major role in providing remediation to students. CAPTE needs program leaders to provide summary results of the assessment processes for each of the criteria needed. This would include those who have not met competency or are not deemed entry level, depending on the language of the various programs.

Why Remediate Students in Health-Related Programs?

People in medical fields have to provide sound patient care to their patients. Patient safety is very important (Wong & Li, 2011, p. 227). It is important for students to have a strong foundation of safety skills before transitioning into their clinical rotations.

This is the case with all programs. The clinical rotations are used to help the students gain real-world experiences and master the skills learned and not give them the chance to make major mistakes (Wong & Li, 2011, p. 227). When mistakes are noted, remediation can be set up.

Although retention is another reason why these program leaders should try to keep their students matriculating, care should be exercised when demanding instructors maintain students in an effort to increase retention of students in health-related programs specifically. Todres et al. (2012) stated "Instructors having clinical and research commitments and the strain of increasing student numbers can hinder adequate detection and follow-up of students" having difficulty (p. e325). If remediation is thoughtful and purposeful, retention in health science programs would be successful.

Remediation and Retention

If colleges are losing a great number of students, the limited enrollment programs will continue to be scrutinized on retention practices. One of three freshmen students will not return to college and college officials are constantly finding ways to increase retention at their institutions (*U.S. News*, 2012). Instead of dismissing students who are having difficulty keeping up with the current program, colleges and accrediting bodies are turning to remediation. The Accreditation Council for Pharmacy Education (ACPE) Professional Standard has "19 requirements that the criteria and policies for academic progress, probation, remediation, and dismissal be stated and readily available" (Poirier et al., 2013, p 1). If accrediting bodies are including remediation in their documents and

colleges and universities are need remediation, it will be important to know what the best practices for completing a remediation program are.

Conclusion

The remediation process was used to help students successfully complete a health science professional-track programs. Without remediation, there may be an increase in the number of students being dismissed from these programs. Remediation should be meaningful for students who are participating in the process (Maize et al., 2010, p. 4). Remediation of these same students may also be the necessary tool that helping colleges and universities maintain or increase their retention numbers.

It was found remediation is a process used at all levels of education and should not carry a negative connotation. Remediation may be needed, but it should be conducted to best suit the student's needs. The review showed that remediation can take place in various ways and that it is important to have the student take part in the planning. Since the students in higher education are adult learners, they should have a good grasp of their learning styles. These students should also be able to draw on previous life experiences. When they are instrumental in the planning, the needs of the student as well as the requirements of the program can be met sufficiently.

The literature review was conducted in many remediation areas in higher education and as well as health science programs. The research studies reviewed showed remediation occurs in most colleges and universities. Remediation also takes place in medical, nursing, pharmacy, and physical therapy programs throughout the United States and beyond. The important piece to acknowledge remediation be provided to students in

a way to help them move forward with their clinical practice. The quality of the education has to meet the requirements of the programs, national associations, and accrediting bodies.

Section 3: Research Method

Introduction

In this section, I discuss the research design guiding the study. It also includes the context of the study along with the ethical considerations for the participants, role of the researcher, and participant selection process. It includes the data collection process as well as the data analysis. This section includes the reliability of the findings and a summary.

This study included interviews with the directors, fieldwork coordinators, and adjunct faculty of the limited enrollment programs at the local college. These programs included the Medical Laboratory Technician, Occupational Therapy Assistant, Opticianry, Physical Therapist Assistant, and Surgical Technology. I explored their perceptions of the best practices for remediating health science students. I used a qualitative case study methodology to obtain information related to various programs.

Research Design

The purpose of this case study was to explore the perceptions of health science instructors on best practices for remediation within limited enrollment programs at the local college. I used a case study because this was a descriptive study where "information is collected for the purpose of describing a specific group with no intention of going beyond that group" (Creswell, 2009, p. 4). The participants for this study were the faculty working in the limited enrollment health science programs at the local college. I used detailed protocols and process. I used a protocol as a plan of action and "a major way of increasing the reliability of case study research and was intended to guide the investigator

in carrying out the data collection" (Yin, 2009, p. 79). This study included three protocols: (a) interview, (b) observation, and (c) document review. Data collection included interviews, observations, and program documents.

Remediation is a real-life practice in higher education. Yin (2009) stated, "You would use the case study method because you wanted to understand a real-life phenomenon in depth" (p. 18). A case study can also be a study of a single case (Stake, 1995, p. xi; Gillham, 2010, p. 1). Stake stated "The cases of interest in education and social service are people and programs" (p. 1), whereas Gillham suggested that "a case study is one which investigates an individual or group to answer specific research question and which to seek a range of different kinds of evidence" (p. 1). I explored the perceptions of 11 instructors on remediation in the five limited enrollment programs.

I used an intrinsic case study approach. This is an approach focused "on a particular individual, event, situation, program, or activity" (Hancock & Algozzine, 2006, p. 33). Hancock and Algozzine (2006) stated that case studies may also include various designs. The design of this case study was a descriptive design. The "Descriptive design attempts to present a complete description" of the information studied (Hancock & Algozzine, 2006, p. 33). The focus of this study was remediation.

I collected data from 11 instructors teaching in the five limited enrollment programs offered at the local campus. The 11 participants for this study included four directors, three fieldwork coordinators, and four adjunct faculty members. The purpose of the study was to explore the perceptions of these employees about remediation, including their thoughts, best practices, likes, and dislikes about using remediation with the health

science students currently in the limited enrollment professional-track health science programs. The instructors' perception was important to help develop a complete remediation process that would be most adventitious for the students.

I considered an ethnography research study. This type of study "essentially refers to the beliefs, values, and attitudes structuring the behavior patterns of a specific group of people" (Merriam, 2009, p. 27). This would need me to conduct a study with "a lengthy period of intimate study and residence in a given social setting" (Merriam, 2009, p. 28). I would not have been able to complete a study of this nature because each program has different start and end dates. Another possible study that could have been conducted was a grounded theory study. I did not use the grounded theory because the purpose of the study was not to develop a new theory.

It was my intention to provide detailed information about participants' perceptions of remediating students in their health science programs. Information gathered from case study research is "bounded by time and activity, and researchers collect detailed information using a variety of data collection procedures over a sustained period of time" (Creswell, 2009, p. 13). I interviewed individuals from different programs to gain information from many perspectives. The knowledge that I gained from this study was interpreted differently by each participant because of the nature of each program's criteria. The faculty members came from various educational and employment backgrounds, which added to the wealth of knowledge gained. I gathered information related to the local campus.

Research Questions

The problem this study addressed was the local college did not have a formal remediation process in place. The purpose of this study was to explore how each instructor was presently conducting remediation with their students. The research questions guiding this study were:

1. How are the health science instructors providing remediation at the local college?
2. In what ways are the instructors using best practices noted in the current research during remediation?
3. What are health science instructors' perceptions regarding best practices for remediation of students in health science professional-track programs?

Context of the Study

The context of this study was a small private career college located in the Midwest of the United States. The college has 11 campuses statewide with 29 health science programs conferring an Associate of Applied Science Degree. There were 15 limited enrollment health science programs statewide. There were about 2,494 students at the local campus. There were about 601 students in the health science programs pursuing an Associate of Applied Science Degree. Approximately 102 of the 601 students were currently in the professional-track portion of the five limited enrollment programs at the local college. These numbers vary yearly as the students change their majors based on their individual performances in the prerequisites along with the enrollment numbers as a whole.

As shown in the College Catalog (2014), "enrollment into the professional track of some programs is limited because of clinical site availability. Students compete to earn acceptance into these programs. Selection criteria have been developed to choose the most qualified students for limited enrollment programs" (p. 101). These programs are competitive and "students who have successfully completed the prerequisite courses for their program are eligible to apply for admission into the professional track of the program" (College Catalog, 2014, p. 101). The criteria and process for entry into each program varied. Some of the programs required entrance exams while others did not.

Ethical Considerations

I contacted the president and the Vice President of Academics of the local campus for a letter of cooperation in order to gain permission to conduct the case study with the participants who met the criteria. This included emailing the letter of cooperation to be signed. After I had obtained the permission of the president and vice president, I gathered demographic information of the participants of the professional track programs at the local college. This information was obtained from the Instructional Specialist. This was an individual at the local college charged with collecting information for statistical purposes. I invited the eleven participants who included 4 program directors, 3 fieldwork coordinators, and 4 adjunct faculty members to take part in the study through email. I obtained the email addresses through the college email system with permission from the college officials. My email included my cellular phone number and Walden University's informed consent form, which included: (a) identification of the researcher, (b) identification of the sponsoring institution, (c) indication of how the participants were

selected, (d) identification of the purpose of the research, (e) identification of the benefits of taking part, (f) identification of the level and type of participant involvement, (g) notation of risks to the participant, (h) guarantee of confidentially to the participant, (i) assurance that the participant can withdraw at any time, and (j) provision of names of persons to contact if questions arose (Creswell, 2009, p.89).

I did not collected until I had received informed consent forms from each participant and all concerns were addressed. I obtained teaching and appointment schedules in order to set up times to conduct the interviews and observations at the convenience of the participants. I requested a copy of participants' schedules during the initial contact. At the start of the interviews, I explained to the participants that they have a right to not answer any question during the interview. I used pseudonyms to protect the identity of the participants and I did not link them to any program at the college. All information collected will be stored on my home computer that was accessed only by me. I was the only person who had access to the interview transcripts on my home computer. All participants received a formal letter of gratitude after completing their interview and observation.

Role of the Researcher

I conducted a case study to explore the participants' perceptions of remediation of students in the health science professional track programs. I obtained approval from Walden University's institutional review board (IRB) before I made initial contact with participants. I obtained approval from the local college before making contact with the participants. I maintained a demeanor which was positive and nonjudgmental while

interacting with the participants. All participants received information about my professional background. It was my responsibility to maintain a safe and comfortable environment for conducting the study.

I have had very little experience with remediation at the college level. I had no biases toward the process of remediation or the best practice for its process. Best practices were a focus of the study. I used the interview questions that were approved by the Walden IRB. I did not express my opinions of a remediation process to the participants. I had no supervisory role over any of the participants.

Participants

The participants were selected using the purposeful sampling strategy. Merriam (2009) mentioned "Purposeful sampling is based on the assumption that the investigator wants to discover, understand, and gain insight and therefore must select a sample from which the most can be learned" (p. 77). It was important for me to "identify key participants in the situation whose knowledge and opinions may provide important insights regarding the research questions" (Hancock & Algozzine, 2006, p. 39). The 11 participants for this study were 4 directors, 3 fieldwork coordinators, and 4 adjunct faculty working with the students in the professional track portion of the limited enrollment health science programs.

The limited enrollment programs offered at the local campus included Medical Laboratory Technician, Occupational Therapy Assistant, Opticianry, Physical Therapist Assistant, and Surgical Technology. The faculty members of these programs were the individuals who met the criteria for this study. Yin (2009) stated, "You must cater to the

interviewee's schedule and availability, not your own" (p. 85). I interviewed the directors, fieldwork coordinators, and adjunct faculty members individually and at their convenience. Also, I observed them during their individual instructional times. I conducted the observations during classroom times as well as laboratory timeframes as some of the sessions were a blend of the two. This allowed me to obtain a complete picture of each instructor's teaching styles and best practices.

Qualitative research generally includes a small number of participants because they are giving personal information which is detailed and thorough (Creswell, 2009. p. 90). This required more time to decipher and disseminate this type of information. Because the faculty members had been charged to maintain and increase retention, the limited enrollment program officials were recognized as an integral part of this process. They had information that assisted with this study's investigation.

Data Collection

Case study research needs to use multiple sources for gathering data. Yin (2009) stated, "The use of multiple sources of evidence in case studies allows an investigator to address a broader range of historical and behavioral issues" (p. 115). Using multiple sources provided triangulation (Hancock & Algozzine, 2006, p. 66; Lodico, Spaulding, & Voegtle, 2010, p. 267; Merriam, 2009, p. 215; Yin, p. 114). Triangulation is when a researcher uses the approach of gathering data from "different methodological standpoints" (Gillham, 2010, p. 13). I conducted interviews, observations, and analyzed program documents.

The interviews were conducted first. Kvale (2007) acknowledged that an interview "is a professional interaction, which goes beyond the spontaneous exchange of views as in everyday conversation and becomes a careful questioning and listening approach with the purpose of obtaining thoroughly tested knowledge" (p. 7). I used an interview protocol (Appendix A). Having a protocol "is a major way of increasing the reliability of case study research and is intended to guide the investigator in carrying out the data collection" (Yin, 2009, p. 79). I interviewed the program directors, fieldwork coordinators, and adjunct faculty of the limited enrollment health science programs. An interview protocol is a guide or set guidelines to identify open-ended or broad questions (Hancock & Algozzine, 2006, p. 39; Creswell, 2009, p. 129). The time for each interview was about 40 to 50 minutes. Hancock and Algozzine (2006) recommended that the researcher "Seek a private, neutral, and distraction-free interview location to increase the comfort of the interviewee and the likelihood of attaining high-quality information" (p. 40). The interviews were conducted in an office with the door closed.

The interviews were done using a semistructured approach. This technique was used because the "semistructured interviews are particularly well-suited for case study research" (Hancock & Algozzine, 2006, p 40). Using the semi-structured approach, I prepared predetermined questions that provided the opportunity for me to ask follow-up questions to the participants (Hancock & Algozzine, 2006, p. 40; Kvale, 2007, p. 11; Merriam, 2009, p. 89). The follow-up questions were about 20 to 25 minutes. The questions were reviewed for clarity, spelling, and grammar. I only used the research questions that were approved by Institutional Review Board (IRB). This process ensured

all the questions met the ethical standards of the university. I obtained permission from each participant to take notes and audiotape them. I recorded all of the interviews by using handwritten notes as well as using an audio recorder because "verbatim transcription of recorded interviews provides the best database for analysis" (Merriam, 2009, p. 110). The interviews were transcribed after each session. This allowed me to have the most accurate data for the study. I emailed the interviews to my personal computer, which was password protected.

I also collected data by conducting formal observations during one class period for 45 to 60 minutes. An observation protocol was used (Appendix B). The observation protocol was "a list of features to be addressed during a particular observation" (Hancock & Algozzine, 2006, p 40). I followed the protocol closely to ensure that all data points were addressed during each observation. This ensured accuracy for the study. I used the ethnographic observational technique for this study. Ethnography, also known as an observer-observed relationship, "essentially involves a researcher observing and recording human behavior in a particular setting" (Flick, 2013, p. 355). The settings included the classroom and laboratory for each program. I conducted the observations during a scheduled laboratory or remediation session. The purpose of observing the laboratory classes was to note the instructional strategies that each instructor employed. I coded the observations as well to determine the best practices used during the lab sessions or remediation sessions at the local college. The remediation sessions included one or more students. I also transcribed the handwritten notes from the observations immediately to maintain the accuracy of the observations.

I collected the data by gathering information from each program's documents. This was known as the document review. There was a protocol for the document review (Appendix C). This protocol or guide allowed me to gather the same information from each program. This ensured the accuracy of the information gathered from all programs. This also decreased the number of requests to view the documents. I obtained permission from program officials prior to obtaining any private documents. The documents gathered included private and public records. Both types of records were useful because "private records include any material produced by an individual that provides insights into the person's beliefs, attitudes, and behaviors" while "public records are documents that reflect beliefs, attitudes, and behaviors beyond those of a particular individual" (Hancock & Algozzine, 2006, p 51). The document review included gathering information from the files of each individual limited enrollment program. This included enrollment numbers, demographics, and statistics. The statistics included remediation and retention numbers for each program. This document analysis concluded the investigation by linking the number of students retained secondary to taking part in remediation. The document analyses were secured in a locked file cabinet.

Data Analysis

The data analysis was an important part of the study. Merriam (2009) stated, "The format of the interview transcript should be set up to enable analysis" (p. 110). The format of the interview was set within the protocol. Miles and Huberman (1994) stated that the researcher should "keep contact summary forms simple" (p. 128). I completed transcribing the interviews verbatim. Auerbach and Silverstein (2003) offered "six steps

for constructing a theoretical narrative from text" (p. 43). The steps were divided into three sections. Making the text manageable: (a) explicitly state your research concerns and theoretical framework and (b) select the relevant text for further analysis. Do this by reading through your raw text with Step 1 in mind, and highlighting relevant text. Hearing what was said: (a) record repeating ideas by grouping together related passages of relevant text and (b) organize themes by grouping repeating ideas into coherent categories. Developing theory: (a) develop theoretical constructs by grouping themes into more abstract concepts consistent with your theoretical framework and (b) create a theoretical narrative by retelling the participant's story in terms of the theoretical constructs (p. 43). Using these steps helped me to maintain organization of the data.

I used these steps for analyzing the interviews, observations, and documents. During the analysis, I used the iterative inquiry. The iterative approach "Involves seeking meaning and developing interpretive explanations through processes of feedback" and these processes are repeated until the accumulated findings showed nothing new is likely to emerge and that the research question has been answered" (Grbich, 2007, p. 17). This was known as coding the data. Saldana (2013) stated that "A code in qualitative inquiry is most often a word or short phrase that symbolically assigns a summative, salient, essence-capturing, and/or evocative attribute for a portion of language-based or visual data" (p 3). Guest et al. (2012) suggested that it would be "helpful to develop a quality-control code-book in a quality data-analysis software program and then code the interviews as they come in" (p. 24). I developed charts used to code the data.

While coding the data, the authors also recommended that researchers use the applied thematic analysis which was "An approach that explicitly takes into account the issues of resources and time as well as quality of the data in specifying and analytic research objective" (Guest et al, 2012, p. 28). Saldana (2013) added that coding should be done in two cycles as a way to check oneself for accuracy (p. 3). The interviews and observations initially reviewed and then again once all the data has been collected. Silverman (2010) recommended data collection must be organized (p. 216). I gathered all the data on one computer. I used a separate document for interviews, observations, and program documents. I stored all of the documents on a password-protected computer.

Trustworthiness of Findings

There were many ways to maintain the trustworthiness of the findings of this study. Katz (2014) stated that trustworthiness was "That quality that warrants our trusting another" (p. 622). I maintained the trust of the participants by reporting their information verbatim. Triangulation was one way to achieve trustworthiness. Rennie, Venville, and Wallace (2011) stated that triangulation "Consists of using multiple rather than single perspectives in relation to the same set of objects" (p. 145). Triangulation is the ability to "Demonstrate how findings are based on information acquired from multiple sources" (Hancock & Algozzine, 2006, p. 66). "Using triangulation in a qualitative study is a way of making a more systematic use of the variety of qualitative research methods or approaches" (Flick, 2009, p. 452). I made a list of similarities and differences of each interviewee's responses. This was also noted after the observations. This helped in determining the best practices for remediation in the health science programs.

Triangulation provided contradictory and complementary results from the use of multiple sources (Flick, 2009, p. 452). The multiple sources that were used for this study included interviews, observations, and a review of the program documents.

I used code-recode and verbatim quotes of the participants to improve the trustworthiness of the findings in addition to triangulation. Code-recode occurred when the transcripts were reviewed multiple times. I categorized the initial coding by likeness and dissimilarity; verbatim quotes were gathered from the audio taped interviews.

Conclusion

This section included the research methods for this study. After the introduction, I explained the research design. I addressed the research questions, the context of the study, ethical considerations, the role of the researcher, and participants. This section included the data collection and data analysis processes and closed with the trustworthiness of the findings. This section provided a synopsis preparing the reader for Section 4 which will include the data management and study findings. This then provided a transition into Section 5 which will include an overview of the entire study along with the interpretation, implications for social change, recommendations for action and further study, and will close with a reflection of the study.

Section 4: Results

Overview

The problem that I addressed in this study was declining enrollment at the local college in the professional-track health science programs. The administrators, particularly those of the limited enrollment programs, were charged with helping to increase retention by providing remediation to the students in the professional track of their programs. There were only five health science limited enrollment programs at the local college included in this study. Those programs were Medial Lab Technician, Occupational Therapy Assistant, Opticianry, Physical Therapist Assistant, and Surgical Technician. The purpose of this case study was to examine how remediation was being carried out by college instructors and explore their perception and views of instructional best practices for providing the remediation to students in the health science professional track programs. I chose a case study because the focus was on a small group of individuals at the local college and it allowed me to gather in-depth information through multiple sources. The sources that I used for this case study were interviews, observations, and document reviews for each of the five programs. I used an interview protocol, observation protocol, and document review protocol.

Data Management

This section includes the findings of the study including an explanation of the data collection and data analysis process. I received conditional approval from Walden's IRB, which allowed me to contact the local college president. The local college is a part of a system of 11 colleges that required me to complete the research policy form for IRB

approval from their system. I received the letter of cooperation from the local college president. I forwarded the letter of cooperation to Walden's IRB and received full approval to begin my research. My Walden University's approval number for this study was 05-05-15- 0158912.

I emailed my colleagues who were working in the limited enrollment programs at the local college with an invitation to take part in my research study along with an attachment of the consent form. Those willing to take part replied to me by emails stating, "I consent." I asked the participants to select dates and times for their interview as their schedule permitted. The data collection took place for 3 months. The data included interviews, observations, and a document review of each program.

I conducted the interviews in the privacy of each participant's office or my office behind a closed door. I conducted 11 interviews, which took approximately 40 to 50 minutes each to complete using the interview protocol. I recorded each interview using the voice memos application on my iPhone. I used the interview protocol (Appendix A) with additional clarifying questions. The interviews concluded with me asking each participant whether they had anything further to add. I immediately emailed a voice memo to myself and downloaded the audio file to my computer. The interview data were transcribed verbatim using the program Transcribe, purchased from https://transcribe.wreally.com. On completion of the transcription the interview data were transferred into a Microsoft Word document. Each interview was given a different label (e.g., A1, B2, C3) and saved in an interview folder on my password protected personal laptop. The documents were saved as PDF files. There were no labels or identifiable

information included in the transcripts or recordings. In total, I made transcripts of the 11 interviews. I coded the interviews and then recoded them again for accuracy using interview logs.

I made a list of the lab days and times. This helped me to develop a schedule for the observations. I scheduled the observations with the consent of the instructors. I completed the observations during the same time frame as the interviews. I conducted nine observations. There were one fewer observations because program C's instructors team taught their lab and one of program D's instructors was not teaching a lab during the data collection period. I observed lab classes until all of the items in the protocol were addressed. I collected and recorded the data from the observations individually. I transferred the information from the observation protocol on to observation logs. Reviewing the observation log assisted me with developing the themes for the findings.

I completed a document analysis for each program. The document analysis was completed by the program administrators of each program using the Document Review Protocol. The data requested by the document review protocol form included information concerning remediation of the students in their professional track of the five limited enrollment programs at the local college. I collected and reviewed five document review protocols (Appendix C); One for each of the limited enrollment programs. Each program director used the information from the program files, student files, and program statistics. This information was transferred to the document protocol logs. I identified each program with a letter, e.g., A, B, C, etc. The participants' letters were directly association with the

programs. Participant A1 is associated with program A. Participant B2 is associated with program B, and so on.

I read the transcripts many times to assess areas of similarities or categories. This helped to develop the themes for the study. I used an iterative analytic approach which, "involves seeking meaning and developing interpretive explanations through processes of feedback and these processes are repeated until the accumulated findings showed nothing new is likely to emerge and that the research question has been answered" (Grbich, 2007, p. 17). This is known as coding the data. As stated earlier, Saldana (2013) stated, "A code in qualitative inquiry is most often a word or short phrase that symbolically assigns a summative, salient, essence-capturing, and/or evocative attribute for a portion of language-based or visual data" (p 3). Recoding is repeating the coding process to assure that all the themes were discovered. This iterative approach helped me to take a deeper look at the data and allowed me to align the data with the research questions. I will discussed this further in the findings section.

The Findings

The initial problem was declining enrollment at the local college in the professional-track health science programs. To increase retention, instructional remediation was a way that college faculty believed could address the problem for students enrolled in the limited enrollment programs. If a student failed a major assessment, they were dismissed from their program. Remediation was an alternative to this policy. As remediation became accepted by faculty, college administration thought it important to study how it was provided. This was how the present study was developed.

The research questions were designed to inquire about the problem. The research questions that guided the study were:

1. How are the health science instructors providing remediation at the local college?
2. In what ways are the instructors using best practices noted in the current research during remediation?
3. What are health science instructors' perceptions regarding best practices for remediation of students in health science professional-track programs?

Given these questions, I needed to explore how the instructors were providing the remediation. I also wanted to determine if they were using the best practices for remediation that were noted in the literature. I also wanted to obtain their views. Participants included the faculty who are currently teaching in one of the five limited enrollment programs at the local college. I collected the data through individual interviews of 11 participants (one each for a total of 11 interviews). I conducted observations in the lab portion of the local college programs. I observed the interactions between the instructors and the students. The document review included the individual student files from each program. There was not any identifiable data collected from the students' records because I wanted to maintain their confidentiality. I used a protocol for the interviews, observations, and document reviews to address the research questions. I developed the themes based on the collected data to complete data analysis process.

Themes

Five themes emerged during the analysis of the interviews: (a) ongoing assessments, (b) multistep process, (c) best practices, (d) instructor's perceptions, and (e) remediation needed for student completion. I described the five themes consecutively. I began by stating which research question is addressed by the particular theme and then discuss the participant views which were the basis for developing themes. After a discussion of each of the five themes, I present the findings of the classroom observations and the document review. I conclude the findings section with a discussion of the Evidence of Quality for the five themes developed from the interviews, classroom observations and document review.

Interviews

Theme 1 addressed the first research question. Remediation took place in all five limited enrollment programs. Each of the programs on average had to remediate anywhere from two to 15 students in the professional-track of their programs. The professional track is the portion of the program where the students took courses in their major field of study. In each field of study, instructors used assessments to monitor their students' success.

Theme # 1: Instructor Use of Ongoing Assessments

It was important for the instructors to conduct ongoing assessments as a preparatory step of the remediation process. Although the assessment of assignments, quizzes, and exams are similar to the content of other courses, competencies and lab practicals are unique to the health science programs. A competency was a hands-on

assessment used to evaluate the student's understanding and mastery of a skill or concept, i.e. taking blood, making a splint, checking for glaucoma, performing a patient transfer safely, maintaining a sterile field, etc. The competencies were assessments given throughout the quarter after each new concept had been introduced and practiced. If a deficiency was noted, it was addressed with the student. Participant C2 stated, "discuss where the student was weak, falling behind, and having trouble with their competency." The instructor would set up a meeting with the student to discuss the student's needs to be addressed for the competency.

The final lab practical was an assessment culminating concepts taught and learned during the quarter. The lab practical was a combination of all of the competencies together forming a scenario. A scenario was a complete patient case or treatment plan depending on the program. It was a way to test the student from the beginning of their interaction with a patient, the hand washing or the introduction; to the end of the session, closure or clean-up. Many of the competencies and practicals were timed. Participant C1 "saw that either the skill was not where it needed to be or they could not complete the task fast enough or correctly at all." Participant E1 also noted the students "need to be able to do the skills without hesitation." The instructors revealed that being on the clock was a source of anxiety for many of the students. The anxiety had to be addressed as well.

If the deficiency had occurred with course work such as assignments, quizzes, or exams, then the information was reviewed and extra work may have been given to the student until they were able to show that they had gained an understanding of the topic.

The instructors used other ways to assess performance along with providing the students with added assignments such as having a book club or conduct reviews using educational games like Jeopardy or Family Feud. The online games allowed the instructors to add the concepts, definitions, skills or treatment techniques as the questions and answers. When a student was deficient in one of these areas, the instructors addressed the deficiency in the most effective way for the student. If the deficiency was with the hands-on skills or lab work, then formal remediation was employed.

One way to assure this was for the instructors to recognize the need for early acknowledgment of the students' deficiency. The instructors made sure to address the need for student assistance early on each quarter. This was done through the assessments and when a student did not receive a passing grade. A passing grade was at minimum a C or 78% on a competency, lab practical, assignment, quiz, or exam. The instructors approached the students as soon as a deficiency was noted. Participant C2 stated that "I got them before they failed their competency." When a deficit was noticed, the instructor stopped and addressed the issue immediately. The instructors would have to be very attentive to each student's performance and their performances. Participant E1 stated that if a student "didn't have the technical skills" to successfully complete the task at hand or was having difficulty mastering a task in the lab, this was considered a deficiency. Another way that the instructors acknowledged that a student was having some difficulty was by using the *Notice of Concern*. The notice of concern was completed if the issue was related to test scores, professional behavior, or technical skills. This notice was completed during the electronic attendance process and it automatically generated a

'notice' into the student tracking system. If the problem persisted, then the notice of concern was repeated. The notice made those closely involved with the student aware there was a potential problem. Those closely involved included the student, advisor, instructor, director, and dean. It was important to have this documentation because the notice of concern was another way to address the problem. After the instructor documented the results of the assessments, they had to determine when a student was a candidate for formal remediation.

Theme #2: Remediation was a Multistep Process

There are many steps to complete formal remediation. The remediation included a meeting with shared control between the student and the instructor. The steps typically involved goal setting, incorporating various tools, and hands-on techniques for practicing skills needed to successfully complete the programs. The remediation was initiated by the instructors and included a one on one meeting with the student. The meeting included a review of the main course concepts for a program. This was done with the first indication a student was struggling. It was important the remediation happened early on in the quarter because the concepts in a program build on one another. This needed the instructors to be fully aware of each student's abilities and struggles.

During the meeting between the instructor and the student, goals were made to determine the area(s) of concern for the student. The goals were agreed on by the student and the instructor. All of the participants recognized that it was important for the students to be involved with goal setting process. The students were encouraged to come up with ideas and informed the instructors of their weakness. Participant D2 stated when "the

students came up with a plan, we reviewed the plan to see if anything needs to be updated." Including the students with developing their remediation goals increased their ownership in the process.

The initial meeting was also the time when it was determined whether or not that the student needed to take part in a formal remediation. Formal remediation was either set up as an independent study to address the student's specific area of deficiency or as a group instruction session when there was more than one student having the same difficulty with the same concept or skill. The students spent time working on the areas in which they are having difficulty proving competency with a concept or skill. Formal remediation included weekly meetings to review the goals and discuss the student's progress.

Program officials stated the remediation process worked well because it was designed as a collaboration between the instructors and the students. While the students were responsible for making a list of those concepts, skills, and tasks they believed were lacking, the instructors were in charge of assuring that they were met, this often incorporated a learning contract, which consisted of a set of goals agreed on by the student and the instructor(s). The learning contract was a formal document that was placed in a student's file.

It was important for the instructors and the students to share in planning the remediation. The facilitation of the remediation was handled by the instructor from the course where the deficiency was noted. Participant D2 stated the facilitation of the remediation "depended on the material" so "the instructor, lab assistant, coordinator,

and/or director" could potentially be involved depending on their expertise. Since the programs have only one or two fulltime faculty members, the director or coordinator of the program often acted as facilitators. Directors of programs facilitated remediation 50% of the time. It was also noted when the director was not in charge of facilitating the remediation, the director still monitored the remediation process. This was important because the director was in charge of the success of the program and students' success. They had an obligation to the college to increase retention and to their respective accrediting bodies. They had to complete annual reports showing the number of students accepted into the program and the number successfully completed the program. The directors wanted to assure they were able to keep students for their respective programs.

Various instructional tools were used for a formal remediation. The tools could include open labs, videotaping, case studies, and mind-mapping. When open labs were employed, they were held outside of the formal-credited lab courses. All of the instructors used open labs as an integral part of the remediation process. Participant B3 stated that open labs gave the students an opportunity to "Come in and practice any of the concepts or techniques discussed in class. I would expect them to come in and practice, not work on papers, but practice the skills." Participant D3 added that the open lab "is not a time for teaching or learning new material; it is a time for the students to start actively working on their skills and practicing" concepts in which they were deficient. The instructors would be physically present in the open lab to be able to address the students' questions or concerns. Open labs were done individually or in groups. This was

considered additional time outside of the regularly scheduled labs and the instructors focused on students individually or in groups with the same remedial issue.

Videos were another tool often used in two ways. The instructors in Program C (Surgical Technology) made videos of themselves completing a task or competency. This was given to the students before actually teaching the skill. The students were asked to review the video again if they were having a difficult time mastering the skill. The instructors of Program D (Physical Therapist Assistant) made videos of the students while completing their mock and lab practicals. If the student was not successful or did not receive the score they believed they should have earned, the student was allowed to view their own video. The video was used to help the student understand how the instructors viewed their performance. Participant D2 noted the video "was a teaching and learning tool for the students. Not only do we look at it to evaluate the student's performance, the student may look at it to critique their own performance." Viewing the video occurred prior to their remediation. Along with the instructor's comments, the student gained more insight into their deficiency. This was also a tool used to clear up a dispute in the student's performances students could see errors and correct them for the future.

An additional tool incorporated was using case studies. Participant B3 noted that case studies were used along with the textbook "to help the student make the connection with how to complete a treatment session." The students were given a real life case or situation in which they were responsible for completing a treatment intervention. It was important to help the student from book work to clinical work. Using the case studies

helped increase the student's clinical decision-making skills. This was where the instructors helped the student transition from giving the classic textbook answer to developing a complete plan of care for their patient.

Mind-mapping was another tool used by Program D. Participant D3 stated Mind-mapping, "is a type of concept mapping where students graphically draw out how multiple concepts are related using pictorial representations." This technique was used for the visual learner. This allowed the student to draw out images of the information given to them. This helped with the connection between hearing it and seeing it. The student took notes on the information, drew out the actual concept, watched the instructor demonstrate the skill, and then perform the skill. Many students struggled to make the connection without mapping it out first.

Many of the participants acknowledged the students' repetitive performance of the competencies and practicals was a key factor for the students' mastery of the tasks. Participant D2 stated that "repetition is important" while Participant E1 offered that "Repetition is the way to learn" the material effectively. Participants noted the importance of repetition. Sometimes students had to repeatedly perform tasks from start to finish until they reached competency. This was important to note because all the above tools needed the student to perform them repetitively to master the skills at the entry-level required by each program. This had to occur in addition to the regularly scheduled course and lab times.

After the students have completed their remediation, they are evaluated using the actual competency, practical, or exam as the final assessment measure. This may be 78%

or better using the program rubric on a lab practical or course. Participant E1 stated students "Must demonstrate and pass with an 80% for each piece of equipment." The time frame to complete the remediation successfully has been taking anywhere from 30 minutes to eight weeks with four weeks being the median timeframe.

An important step in remediation process was providing the students the opportunity to practice their hands-on skills. Since all of the limited enrollment programs were health science related, students were required to actively take part in some form of patient care. This meant they had to develop a set of hands-on techniques to effectively work in their field of study. Some of the hands-on techniques that were employed were instrument practicals, patient simulation, and mock practicals. Some of the students may have required intervention during the actual exam portion of the course work. All of the programs had students that needed remediation with the hands-on components of the course to pass.

Hands-on components were used when a student was asked to perform a skilled task directly related to their chosen field of study, e.g. for example analyzing urine or blood, measuring the size of a patient's lens, making a hand splint, gait training a patient on the stairs, or properly passing a surgical instrument to a doctor. According to Participant C1, their students are introduced to a total of 300 surgical instruments in a ten-week time frame. During this time, they are tested on 10 instruments at a time. This is known as an instrument practical. Participant C1 stated Instrument practicals, "pertain to the knowledge and understanding of surgical instruments that were used in the operating room," and are done to assess a student's timing from start to finish with setting up an

operating room using these instruments. During this practical, the student had to maintain a sterile field.

In addition to the practicals, patient simulation was used during most lab classes. The patient simulation was incorporated into the remediation to give the student a glimpse of working with real patients. Such simulations were utilized for teaching bed transfers. An actual patient was not involved and a student role played the transfer. Mock practicals were also incorporated into the training of some students. Repetition was also important with Mock Practicals used by two participants in the (physical therapist assistant) program. The mock practical gave students an opportunity to experience the full practical with feedback from their instructor. The students were able to complete a full mock practical before the final lab practical. The student could then practice those skills before the final lab practical. They could also work with their classmates, who had been successfully completed the practical, to critique their performance. The mock practical was incorporated into the process to decrease the number of students who failed the final lab practical.

Theme #3: Remediation Best Practice Tools and Techniques

The instructors were using many tools and techniques to help the students have a successful remediation process. It was important to explore whether the instructors were using the same tools and techniques found in the literature. This theme addressed research question 2. All of the instructors used some combination of open labs, videos, case studies, mind-mapping, instrument practicals, patient simulation, and mock practicals during the remediation process. These tools or techniques helped students to

master the skills needed to start their clinical. All of the techniques used by the participants were best practices recognized in the literature. The fact the instructors were using more than one tool or technique together increased the successfulness of the remediation.

Theme #4: Instructors' Perception of Remediation in Health Science Programs

One important piece to this case study was examining instructor views on incorporating remediation into the professional track of the health science programs. Their views informed and addressed research question 3. All of the participants stated remediation was needed for some of the students to successfully complete the professional track portion of the limited enrollment programs. For a student to be allowed to take part in a remediation program, they had to be passing the course with a 78% or better. Students needed to pass the course because if they failed, remediation would not prevent them from being dismissed from their program. Participant D2 stated that remediation played "a big role" with students who struggled with their "clinical skills." Initiating a remediation process gave those students the opportunity to practice the skill where they lacked proficiency. Participant D3 stated instructors needed to figure out how a student learned best and then provide remediation and feedback "until they gained a complete understanding of what was required of them." Students often only knew one way to study, and the instructors had to suggest different ways for the student to master course content. This included, but was not limited to re-reading and making note cards of course material, studying with an application aligned with the textbook, group studying, suggesting online resources, and if needed getting a tutor.

Another approach which instructors perceived as supporting remediation was to increase professional interaction and collaboration between students in the different college programs. This occurred when the students of one program practiced their skills with the students of other programs. This helped students with their communication skills as well as their hands-on skills. When the instructors increased the professional interactions between the limited enrollment programs, the students had a better understanding of working with other professionals. This helped the students when they were attending their clinical rotations.

Participant E1's perception of remediation as a whole was that it "played a big part in the success of many students," and had they not participated in the remediation process, they probably would not have successfully completed the didactic portion of their programs. Participant E1 believed "there is a certain body of knowledge the student had to have; but if they did not get it, we have to go back" and remediate. The instructors had to reinforce knowledge until it was mastered. Mastery meant the students had to pass all assessments with at least a C (or a 78% score) before attending a clinical, fieldwork, or externship (as outside class activities or intern work experience were called).

The remediation was important to incorporate into the health science programs because many students needed the extra time to master the techniques presented. A student often would be competent with individual skills, but later have difficulty putting all of the skills together to form a complete process. Each program had a set of skills the students needed to be proficient in if they were going to be allowed to work in their prospective field of study. The Occupational or Physical Therapy students had to work

through a complete treatment plan from start to finish. Opticinary students had to complete all of the preliminary exams before the patient could be seen by the doctor. Medical Laboratory Technician students had to effectively complete a urinalysis and prepare the results. Surgical Technology students had to prepare, maintain, and clean-up an operating room. There were many steps to each of these tasks and remediation (extra time) was necessary to help prepare many of the students for their out of school work experiences.

Remediation was often needed before a student being allowed to attend a clinical rotation. Participant A1 stated, "they were not able to go on fieldwork until they had completed their remediation." Participant D3 stated that "a clinical rotation was a real-world learning experience with a clear set of objectives which takes place over a specific period of time." Full-time clinical rotations at the local college ranged from six to twelve weeks. Seven out of ten participant instructors noted that the students who were remediated had to successfully complete the remediation process before attending a clinical affiliation. When the students arrived at this point in their training, they realized they had to use all their knowledge and skills to help them arrive at the best outcome for their patient.

Another important milestone for students in their respective programs occurred when they were out on their clinical rotation, during which they had to show their ability to perform effective clinical reasoning. This was important for patient safety. Participant B2 stated some students "had to work on clinical reasoning skills" before attending the

clinical rotation. They had to take part in formal remediation to improve their reasoning skills otherwise, they would not have been able to successfully complete their practicals.

Theme #5: Remediation Necessary for Student Completion

Theme 5 addressed all three research questions. All the participants revealed the students would not have been able to take part in their actual clinical rotation had they not engaged in the remediation during the interviews. The participants also reported the remediation was needed for students to successfully complete the professional track portion of their programs. A student, unfortunately, may not show any problems until they have started their clinical training. Participant E1 recalled that there was a student in jeopardy of failing their clinical rotation. The instructor worked with the student "on the days that the student was not at the [externship] site. An externship is another term used for outside of class experience where the students got to apply hands-on skills while working with actual patients or customers. The student had to come in the lab with me and worked on the skills. By the time the student was done with the externship, the site hired her." A clinical, fieldwork, or externship was the final course of each program. If a student was unsuccessful with this final course, they would not be able to complete their respective program or earn their degree.

Problems did occur during remediation involving students with extraordinary issues. Participant D2 noted there was "A student in the cohort who came from another campus because he was struggling and was dismissed" from the other program. He did well with his lab practical because of all of the things we did with him during the first quarter to help him succeed. Some things to help remediate this particular student were

extra one-on-one time, a review of case studies, and having students role-play as his patient. It was reported by all of the participants that eventually their remediated students were successful. They either moved onto the next step in their education, i.e. continuing into the following quarter or were allowed to attend the clinical rotation.

After students completed their remediation, they were evaluated using the actual competency, practical, or exam as the final assessment measure. This meant achieving 78% or better using the program rubric on a lab practical. Participant E1 stated students "must demonstrate and pass" each competency for the program. The time frame to complete the remediation successfully took on average 30 minutes to four weeks within an eight-week time frame. Sometimes a student just needed one-on-one time with the instructor and reassurance that they could be successful. It was important to note sometimes students had an increased fear of failing when they were unsuccessful with a competency or lab practice. Instructors had to spend ample time redirecting the students into more positive constructive behaviors. This was an important part of the remediation process. Student success meant graduation, earning the degree, and employment in their field of study. When this happened, the instructors also helped to increase retention at the local campus.

Observations

The classroom observations addressed Research Questions 1 and 2 and tended to reinforce Themes 1, 2, and 3. I conducted 10 observations. During the observation periods, I witnessed the use of ongoing assessments, the various steps to complete a remediation, and the preferred best practices used by instructors. I conducted the

observations in the lab portion of the courses. The Observation Protocol (Appendix B) was used to complete this process. I scheduled the observations toward the middle of the class period to give each instructor the opportunity to have the instructions for the day completed and the students were well into the learning. I entered the classroom quietly and sat or stood away from the student. I did not interfere with the instruction taking place in the lab. There were as few as seven students and as many as 22 students taking part in the labs. Two of the groups wore scrubs, three of the groups wore polo-type shirts and khaki pants, three wore lab attire which included tank tops and shorts and one group wore casual clothes. It appeared this type of attire did not change the professional manner in which the activities were carried out.

The techniques that I observed included a review of case studies, re-teaching, demonstrations followed by a performance of the task, and patient simulation. Most of the lab classes grouped the students with two, four, or five students in each group. Programs A (Medical Laboratory Technician) and C (Surgical Technology) had students working individually because there were a smaller number of students present in the lab. Even when students worked individually, the other students were allowed to offer encouragement and assistance as needed. Three of the observations were completed with students who were starting the professional track portion of their programs. Five of the observations were with students at the end of their program. The majority of the labs had a greater number of females than males. One lab included an equal number of males and females.

All of the observations included the instructors demonstrating using their lab equipment. This included the actual items used in the clinical setting, i.e., test tubes, centrifuge machine, exercise balls, seat cushions, treatment mats, wheelchairs, manipulatives, plumb lines, sterile equipment, lens, and a lensometer (an instrument used to verify the prescription in glasses). This also included items to help simulate patient scenarios such as impairment goggles, which allowed the students to get an understanding what a patient was experiencing. This type of lab equipment gave the students a better understanding with how to accommodate for patient safety.

Assessments Observed

All of the students were engaged in hands-on learning skills. They took part in practicing the skills introduced in the lesson or observed the other student groups as they practiced or presented their case studies. All activities were hands-on activities. The instructors circulated around the lab and helped the groups or individuals with their task. The instructors also answered questions; often stopping to address the entire group. All of the instructors interacted with all of the students in the lab at one point. This included visual assessments, asking clarifying questions, as well as formative assessment. The formative assessments included completion of the task, the instructor verifying what was seen under the microscope, verifying landmarks while palpating various physical structures, competency checks off, students reporting out, or each group testing out by presenting findings or results from their case studies.

The instructors offered input to correct any student or group as needed. This often included the instructor repeating the correct manner in which students should complete

the task. The instructors often stopped a student to show the proper way to perform the task and then allowed the student to demonstrate with feedback or encouragement as needed. There were two instructors who included technology in this portion of the course. One instructor used a PowerPoint presentation to give the initial instruction. The other instructor used videos and a PowerPoint to help the student with understanding the concepts taught.

Best Practices Observed

The tools and techniques observed were similar to the best practices noted in the literature. During the observations, I noticed that the instructors would demonstrate the skills and techniques first. Then, the students would practice the skills and techniques while the instructors would circulate around the lab to help the students and answer any questions. The instructors would check on the students' progress and make corrections verbally or actually show the task or skill again for clarity. The instructors would re-assess the students individually or in groups to determine if the skills were mastered.

Research question 3 (What are health science instructors' perceptions regarding best practices for remediation of students in health science professional track programs?) was not addressed during the classroom observations. During the observation period, I did not ask the instructor questions. This time was used primarily to observe the lab classes to see how remediation occurred and if the instructors used the best practices as found in the literature. The final data collecting tool was the document review. This was used to collect statistical information for this case study.

Document Review

I completed the document review for this case study to complement and reinforce the data collected from the interviews and observations. The statistical information that I examined provided insight on the dynamics of each program. The document review did not directly address research questions 1 and 2 but gave some additional information to address research questions 3. A document review was completed for each of the five programs using the Document Review Protocol (Appendix C). The document reviews helped me to gain a better understanding of the make-up of the student population of each limited enrollment program.

The document review provided general information about each program. The programs took four, five, or eight quarters to complete the Associate of Applied Science Degree. The programs accepted from 10 to 22 students into the programs. All of the programs had more females than males. At the time of the study, there was a total of 62 females and 23 males. The specific gender numbers are illustrated by the program in Figure 1. The youngest student accepted into any program was 19 while the oldest was 54 years of age. The number of first-time college students ranged from Program D (Physical Therapist Assistant) which had only three students to 13 for Program B (Occupational Therapy Assistant). The number of students returning to college to change or improve their profession ranged from two to 10.

The college attendance is depicted by the program in Figure 2. Program A (Medical Laboratory Technician) had the least number of students (three students who were returning to college), while Program D (Physical Therapist Assistant) had the

greatest number of 18 students returning to college. Each of the programs had one, two, or four students who had received a college degree before enrolling at the local college. Each of the programs had one, two, or four students with a degree, but were not working in the field in which they received the degree. Each program had two, four, five, or seven students who had returned to college to change their career.

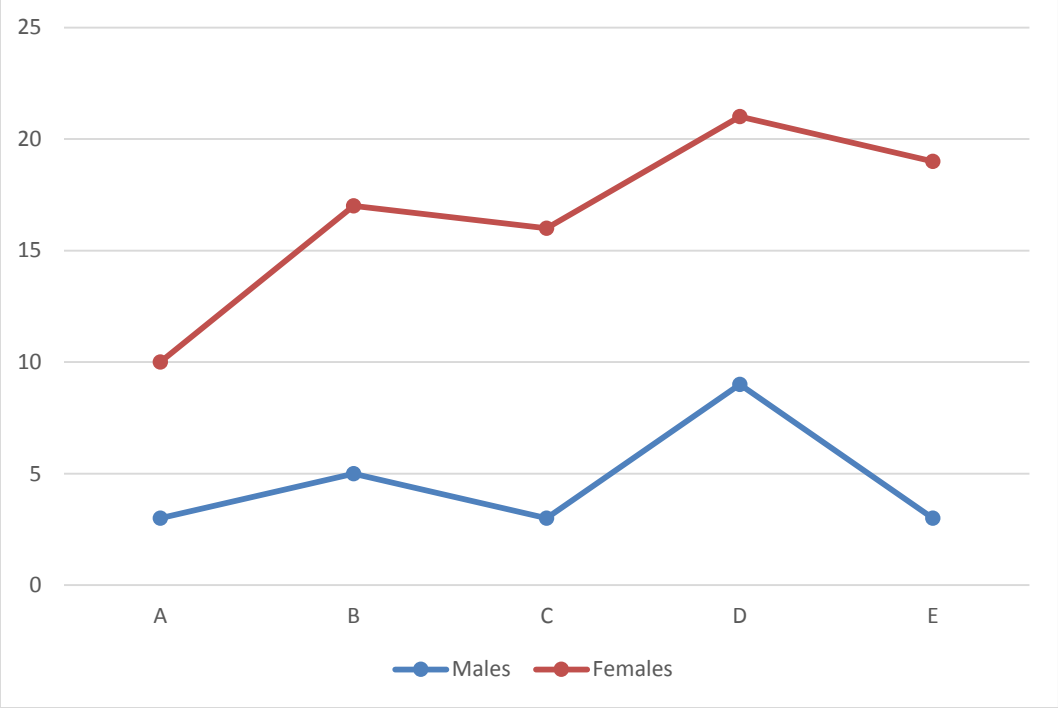

Figure 1. Gender.

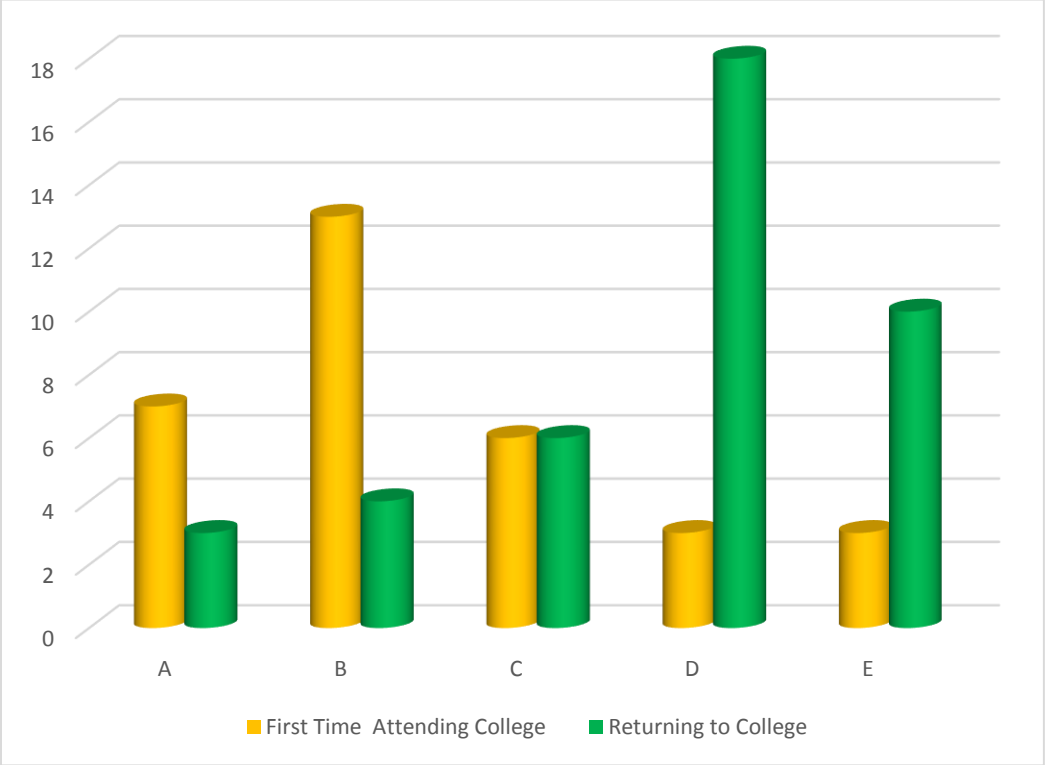

Figure 2. College attendance.

The latter portion of the document review protocol focused on the academic performance of the students in the five limited enrollment programs. This information is located in Table 1. Most of the students' GPA was above a 3.0 on a 4.0 scale. Only 5.62% of the students' grade point average fell below a 3.0. Programs C and D had students who were on a learning contract. Programs C, D, and E had a student who failed and was dismissed. Programs B, C, D, and E had students who chose to drop out. Only Programs B and C had students returning from the previous year. All of the programs had students who took part in a remediation process.

It was important to include data from the student records in this study to present a picture of student outcomes for each of the limited enrollment programs. The students who start in the limited enrollment programs are those who have had to earn a B- or better in all of their prerequisite course to be illegible to apply. Twenty-four students were the maximum number any one program was allowed to take per their accrediting body. One might assume these students would not have any difficulty after being accepted into a limited enrollment program. Many students had difficulty from the start because the curriculum of the health science programs was quite different from the prerequisite courses. Students were required to critically think instead of rote memorize information. The students are required to individually prove competency on the skills they have been taught. The students have to use what they learned to work in their field of study.

Students were under a tremendous stress. If they did not complete their program, they would have to start over in a different program. Many students were returning to school to change their career. Several students had to take care of their families and had to spend a great deal of time away from their families to attend classes and clinical rotations. These students struggled to maintain the GPAs they had before they entered their programs.

Table 1

Academic Performance of the Students Within Each Program

Programs	A	B	C	D	E
Average GPA	3.4	3.57	3.57	3.67	3.11
Learning Contract	0	0	1	6	0
Failed	0	0	2	2	3
Dropped Out	0	1	3	1	4
Returning Students	0	1	2	0	0
Remediation	2	2	3	6	3

The instructors made concluding remarks on incorporating remediation into the professional-track of the health science programs, which addressed research question 3. It is important to note the majority of the students who matriculated in the limited enrollment programs were honor students. A significant number of those students still needed to take part in remediation to complete their program and earn their degree. The instructors could not assume a student who had a 3.5 GPA would automatically transition into the professional track program without any difficulty. The health science programs are hands-on programs which were different from the pre-professional coursework. The students had to make the transition from in class didactic learning to the performance-based learning needed for clinical fieldwork. The students had to learn how to move from

classroom interaction with their instructors to providing competent treatment plans to meet their patients' needs. Students had to master the art of clinical reasoning during their clinical rotation. To ensure student competency in clinical reasoning, instructors had to use multiple instructional approaches during the remediation process. This included the visual (watching the instructor, videos of the instructor or even themselves complete the task or skill), auditory (lecture, listening to an audio tape or video), and kinesthetic techniques (actually performing the hands-on skills) techniques discussed earlier.

Evidence of Quality

I followed three analytic procedures for this study to assure accuracy and validity of the data: Verbatim transcripts, coding and recoding, and triangulation. I used purposeful sampling to select the participants. I used three data sources: individual instructor interviews, classroom observations, and program and student documents. I began the data collection after I received the signed letter of cooperation from the local college and approval from Walden University's IRB. I transcribed the interviews verbatim and checked against the recordings. I coded the interviews and observations along with program and student documents reviewed. Coding and re-coding of the interviews were needed to assure that the major themes reflected the views of the participants. The triangulation process involved a rigorous series of comparison and cross-checking of the three data sources to confirm and reinforce the interview findings with the observation and document review data. The interview, observation, and document review protocols are included in the Appendices.

Conclusion

Remediation is an integral part of the limited enrollment programs at the local college. Remediation played a large role in the professional portion of the health science programs. Typically, program directors initiated the remediation for the students. This assured the process would take place in a way best for each student. All of the students who received remediation appeared to be successful in their programs. The remediation process had the potential to improve overall retention for the limited enrollment programs as well as the local college as a whole.

Section 5: Discussion, Conclusions, and Recommendations

Introduction

The purpose of this case study was to explore how college instructors were carrying out remediation and to explore their perceptions and views of instructional best practices for students in health science professional-track programs in the context of current research. Because there had been a steady decline during the last 5 years, the administrators were encouraged to seek ways to help decrease the attrition in their respective programs, which would result in increasing retention for the entire campus. The program directors of the limited enrollment programs were spotlighted because the students of those programs had to apply and be selected for a limited number of enrollment slots. Those students were considered the top-performing students and thought to be able to successfully complete the professional track of their programs without difficulty. The program directors were charged to incorporate more formal remediation programs with students who were deficient. If they maintained their entire annual cohort, it was assumed by the administrative staff that the retention rates of the local college would also increase.

I addressed the initial research problem of declining college retention. I used the case study to address the overall perceptions of the instructors as it related to remediating the students in the limited enrollment programs. The participants were a part of a purposeful sample of those instructors who taught in the limited enrollment programs at the local college. The five limited enrollment programs were Medical Laboratory

Technician, Occupational Therapy Assistant, Opticinary, Physical Therapist Assistant, and Surgical Technology.

I obtained the data through interviews with the faculty of the five health science limited enrollment programs. I also collected the data through observations of the lab classes and program document reviews of each program. The documented data that I collected by verbatim transcripts of the interviews, coding and recoding of the interview transcripts, and the observations, and recording the information received about each program. I executed the three data collecting procedures to address the three research questions.

The research questions which guided this study were:

1. How are the health science instructors providing remediation at the local college?
2. In what ways are the instructors using best practices noted in the current research during remediation?
3. What are health science instructors' perceptions regarding best practices for remediation of students in health science professional-track programs?

Five themes emerged during the analysis of the interviews: (a) ongoing assessments, (b) multistep process, (c) best practices, (d) instructor's perceptions, and (e) remediation, which was needed for successful student completion. I linked the observation data to Themes 1, 2, and 3, whereas the document review, which provided me insight on the instructors' perceptions of remediation, was linked to Themes 4 and 5.

Interpretation

The purpose of this qualitative case study was to examine the perceptions of the health science instructors on remediation of their students in the professional-track portion of their programs. Ciampa and Revels (2012) stated the following:

> Remediation may be defined as a class or activity intended to meet the needs of students who initially do not have the skills, experience, or orientation necessary to perform at a level that the institutions or instructors recognize as regular or competent. (p. 88)

I focused on the five limited enrollment programs offered at the local college and I explored the process in which the instructors used to provide remediation to their students. I drew the following four conclusions from the themes: (a) ongoing assessments, (b) shared control, (c) multiple techniques, and (d) clinical reasoning.

Conclusion #1: **Ongoing Assessments Was a Necessity**

Completing ongoing assessments was a necessity. Conducting ongoing assessments was not something new or special to the participants. Using the assessments in a more meaningful way was the catalyst to determine whether or not a student would be a candidate for remediation. The instructors had to examine the entire profile of a student to determine whether they had a rough start or were in jeopardy of actually failing a course or the program as a whole. Ragan et al. (2013) suggested that at-risk students be identified in order to minimize failures. This may have taken some extra effort on the part of the instructors. This required the instructors to check and record all results into their blackboard shell efficiently. They also had ongoing consultations with the students to

make sure they were making progress every step of the way. Pell, Fuller, Homer, and Roberts (2012) suggested a "need for longer term performance data to help us look critically at the remediation and further assessment of underperforming students" (p. 149). Tracking the students' progress and how they were learning was extremely important to the process. But it was just as important for the instructors to help the students perform ongoing self-assessments. Self-assessment led to self-directed learning. Self-directed learning is an important part of the conceptual framework for this study. Knowles (1975) stated, "there is convincing evidence that people who take the initiative in learning (proactive learners) learn more things and learn better" (p. 14). When students in higher education know what their deficiency was, had some input in the steps to correct the deficiency, they had a better chance of being successful. The most effective way for success and completion was to complete the assessments throughout the quarter and consistently.

When the assessments were done consistently, this helped the instructors to acknowledge the need for remediation early on in the quarter. This acknowledgment occurred after the first test, during the practicing of the skills and tasks, or unsuccessful completion of a competency. When the acknowledgment occurred early in the quarter, the students still had the time to be successful. The instructors had to acknowledge a deficiency as soon as possible. Participant C2 stated acknowledging a student was having difficulty occurred before the student was actually failing. Pell et al. (2012) noted "weak students need additional time to consolidate existing learning" (p.150). This is where the remediation needed to start. Lillis, Takai, and Francis (2014) stated "the educational

program is organized around a set of specific objectives that are based on deficits found in the assessments" (p. 98). As soon as there is a deficiency noted, instructors needed to develop a plan for those students. If the students who were recognized as needing additional instruction were remediated in a timely fashion, the possibility for successful completion of their program and degree was realized.

After the student took part in a remediation program, the students had to be assessed again. It was important to note that the students were given a summative assessment as part of the remediation. Ragan et al. (2013) expressed the importance of "assessing clinical competence during performance" (pg. 1). The instructors were consistently re-assessing the students to make sure they were mastering the skills being taught. The students were required to successfully complete an exam, competency, or final lab practical. This was important because each of the programs was responsible for assuring all students met certain requirements per their individual accrediting bodies. Hawthorne, Chretien, Torre, and Chheda (2014) stated "educators have a societal responsibility to identify trainees who are not competent and only graduate them when they demonstrate competence and readiness to assume the additional responsibilities and functions of the next level of practice (p. 4). The students were not be passed along because they would also have to prove their competence when they were taking part in the clinical rotations, fieldwork, or externships.

Conclusion #2: The Remediation Process Should Incorporate Shared Control

If the remediation was going to be successful, the process needed to include input from the student and the instructor. It was important to include the students with the

development of the remediation plan. Incorporating the self-assessment would allow the student to recognize their own deficiency and help them with developing their goals during the remediation. Instructors gave students an opportunity to offer input in areas of instruction they were having difficulty. This was important because the instructors were dealing with adult learners and adults should always have some ownership of their learning. The conceptual framework which included adult learning theory and constructivist theory "stressed ownership of the learning process by learners, experiential learning, and problem-solving approaches to learning," (Knowles et al, 2005, p. 193). The students were required to develop their own goals. Huhn et al. (2013) suggested that the self-assessment should occur at the beginning of the program and completed at various times throughout (p. 27). The instructors met with the students individually and reviewed the program goals. The remediation process was primarily a one-on-one program between the student and instructor. Lillis and Takai (2014) stated "a successful remediation plan should focus on identified deficiencies using an individualized approach and tutoring should be on a one-to-one basis and proceed at a pace comfortable" for the student (p. 100). Having the remediation one-to-one assured the student received the attention he needed.

The remediation process was a partnership between the student and the instructor. It was important for the parties involved to work together to make the process meaningful to them individually. The instructors were responsible for disseminating the didactic portion of the program, but the students should know and understand how they learn. Once the remediation began, the instructors facilitated the learning. They monitored the

progress of the students. The instructors were also responsible for assuring each student was mastering the skills needed for them to move to the next level of their program or attend their clinical rotation. The instructors had to meet certain standards including those of the college and their respective accrediting bodies. Doyle (2011) stated educators are the facilitators of the learning process. To facilitate learning, the instructors had to assure that students met all the requirements of their program. Ciampa and Revels (2012) stated "self-remediation without instructor involvement provided a larger difference between pre- and posttest scores than remediation with the instructor involvement" (p. 95). It was important that the student was not left to figure things out on their own. Combining the instructors and students input helped to shape the remediation process so that it was meaningful for each student. The students could practice all day and night by themselves, but, if they were practicing incorrectly, they would not be successful. It was important for the instructor to be present during the remediation to offer support to the student as well as make corrections when needed.

Conclusion #3: Successful Remediation Required the Use of Multiple Techniques

A large part of the remediation process included various techniques to help students master course material. This was very important because students learn in a variety of ways. The authors stressed the importance of using multiple instructional techniques during remediation (Francis-Coad & Hill, 2014; Ciampa & Revels, 2012) . Some of the techniques used included additional lab time, videotaping, and using case studies. All three techniques were supported by the best practices found in the literature. Francis-Coad and Hill (2014) found that additional lab time and using videotaping

increased student comprehension. Ragan et al. (2013) focused on using case studies as an integral part of the remediation process. Instructors believed that when the remediation included multiple ways in which to help the students learn, the potential for student success increased. In addition to these remediation best practices which found support in the literature, the programs also included hands-on techniques.

All of the health science programs included some sort of hands-on activity. The instructors were getting the students ready to work in the world with real patients. The techniques, skills, and treatments they were going to be using in the field had to be taught, practiced, and mastered before the students were allowed to attend their clinical rotation. The clinical instructors were supposed to help students transition to the clinic setting and work with real patients. The clinical instructors were not responsible for teaching the basic knowledge. The basic knowledge had to be acquired in the didactic portion of the program.

Patient simulation and mock practicals were the hands-on techniques used by the instructors. Both patient simulation and mock practicals were supported by the best practices found in the literature. Ragan et al. (2013) used laboratory simulations as one of their methods for re-teaching (p. 1). Lynn and Twigg (2011) stated "The use of simulation was an effective teaching strategy and has been found to help students with their confidence, knowledge, and clinical judgment" (p. 173). Francis-Coad and Hill (2014) advocated the use of mock practicals as a way for students to practice before they applied their knowledge in a clinical setting. Instructors selected the learning technique which would best assist the student. The technique was then included in the student's

remediation plan. All of the health science programs had to work with the students to improve their skills and hands-on techniques. Improving hands-on skills was one of the most important tasks students had to master before they could to move on to their clinical rotations.

Often more than one technique (additional lab time, videotaping, or using case studies) was incorporated into the student's remediation plan along with one or more hands–on techniques (patient simulation or mock practicals). According to Francis-Coad and Hill (2014) delivering course content in different ways such as "Demonstration, oral explanations, kinesthetic, and written forms was important to student success" (p. 44). It was important for the students to understand how they learned best. This directly related to the conceptual framework for this study. Knowles (1975) held that when "People are 'proactive learners,' they learn more, are more in tune with the natural processes of psychological development, and have taken a good deal of initiative in their own learning" (p. 14-15). When the students at the college, being adult learners, were able to offer some input into the best way they are able to retain information, the instructors could design the remediation plan to fit the student's needs.

During the observations, I witnessed interactions between the instructors and their students. The instructors used various techniques when conducting remediation with the students. The techniques included case studies, re-teaching, demonstrations followed by a performance of the task, and patient simulation. The technology was used during the lab session to assist the students with understanding a concept. I observed the instructors providing demonstrations, oral explanations, and allowing the practice of hands-on

techniques during the lab classes. Often the instructors used more than one technique at a time. When the instructors were using a combination of tools or techniques, students have a better opportunity to learn course content. I was able to observe the instructors incorporate these techniques which were in line with the best practices found in the literature. Francis-Coad and Hill (2014) stated that including "integrated clinical experiences (ICE), patient simulation experiences, increasing technology in the classroom, online or lectures and delivering information in different ways" were all important for student success (p. 44). Since students learn differently, the chances for them to master the concepts that are being taught will increase when visual (demonstration), aural (oral explanation), and kinesthetic (hands-on practice) teaching are included in remediation. The observations confirmed what the participants stated during their interviews.

Conclusion #4: Remediation was Required to Master Clinical Reasoning Skills

The instructors took care to fully prepare the students prior before their full-time clinical rotations. The clinical rotations, which were out of class learning experiences, were the link between the classroom and the clinic. The clinical rotations occurred at the stage in the health science programs that required effective clinical reasoning skills be fully developed. Huhn et al. (2013) suggested "The greatest changes in clinical reasoning skill occurred during the didactic portion of the students' education, not during clinical rotations" (p. 29). It is important to acknowledge "students struggling in the clinical environment present a risk to patients in the clinical setting" (Lynn & Donovan, 2011, p. 173). Clinical reasoning skills develop with practice and should also be assessed

throughout the students' tenure in the professional track of their program. Along with the hands-on skills, the instructors have a duty to ensure the students also possess sufficient clinical reasoning skills. Furze, Gale, Black, Cochran, and Jensen (2015) recommends the creation of a "Clinical Reasoning Grading Rubric to assess the clinical reasoning skills of PT students and evaluate their readiness to enter the clinical setting" (p. 38). Evaluating student competence of clinical reasoning skills was needed to meet the requirements of each programs' accrediting body and assure that the students are safe with the patient population in which they would be servicing.

Reasoning skills were necessary for the students to have mastered before participating in their clinical education. It was important the instructors acknowledge that remediation may need to be ongoing at various stages during the professional track program especially when the student is not showing good clinical judgment. Carr (2011) stated, "Remediation at all levels remains an important feature of the nursing program" (p. 388). Remediation cannot be considered a one-time occurrence for students and should be integral through the program.

There may be students who do not show poor clinical reasoning skills until after they have started a clinical rotation. Various authors noted this point. Todres et al. noted the need for remediation once the residents entered the hospital setting (p. e328). In their study Huhn et al. (2013) showed the need for the remediation during the transition from the classroom to the clinical rotation for physical therapy students. Ragan et al. (2013) held that there was a need for remediation before attending their clinical rotation. Instructors from all health science programs needed to assure the students were

successful from start to finish. This was noted in the literature discussed in this section as well as in the study.

At this critical stage in the health science programs, it was most important for the student to be actively engaged in their learning as well as their performance. The related concepts for this study (students should participate in shared control, be facilitators of learning, and self-directed learning) is important at this stage in the professional track of the health science programs. The conceptual framework for this study noted the need for students to be active with their learning. Knowles et al. (2005) stated "Both constructivism and andragogy stress ownership of the learning process by learners" (p. 193). When adults were required to take part in the planning of their educational process, they are more likely to take ownership. The students are also required to provide goals to their clinical instructors prior to attending a clinical rotation. Having the students participate in setting their own goals was an important aspect of the adult learning theory and aligned with the conceptual framework.

Recommendations for Further Study

Research studies on remediation have been minimal in the professional-track of health science programs at the college level. A closer examination is needed to get a clearer understanding of how remediation can influence the college. There were three limitations of this study. This study had a small sample size. I recommended that a larger sample is used for any studies in the future. This study focused on the local college only. It is recommended a study is conducted to include more campuses of the system of colleges. This study focused on the college in which I am currently employed. It is also

recommended that a study be conducted to include other colleges which have limited enrollment programs and possibly universities.

Participants were limited to discussing the remediation provided within their individual programs. Other than practicing hands-on skills, each program used different techniques to complete the remediation process. Because remediation had a positive influence on the educational environment at the research site, it would be advantageous to explore the remediation process of other college programs in the system. This study focused on the five limited enrollment programs offered at the local college. Additional studies including more limited enrollment programs which received an Associated of Applied Science Degree are necessary to broaden the literature and increase the awareness of the positive effects of remediation in the professional track health science programs. Additional studies should also include nursing programs. Although the Nursing Program was a limited enrollment program at the local college, it was not included because this program received an Associate of Nursing Degree which was a different degree than the programs included in this study.

Implications for Social Change

The focus of this study was on increasing retention at the local college. The instructors of the five limited enrollment health science programs incorporated remediation into their programs to increase the retention of their respective programs. The instructors worked with the students to guarantee that they would progress through the professional track portion of their respective programs. Poirier et al. (2013) held that it was important for students to understand the policies on remediation in order to

progress through a health science program. The local college and the system needed a formal remediation policy put in place. If students were successful with their remediation program, the retention rate in the limited enrollment programs at the local campus would increase. If each program incorporated a remediation chapter into their program manual for new students being accepted into their programs, the number of students who withdraw from these programs could potentially decrease.

Reflection

Completing this research study gave me an opportunity to explore the way instructors were using remediation at the local college. Perhaps having four children, with three in college, made me wonder how instructors assured the success of their students. I have experienced firsthand a child who needed accommodations to be successful in school. Some students may need the teacher to think outside the box, differentiate instruction, or reteach a concept. I initially thought that the participants would be apprehensive about discussing why remediation was needed in the professional-track programs, but surprisingly they were excited to share their remediation experiences. Because I work with the instructors any potential anxiety or trepidations they may have had was minimal. Although all the instructors were enthusiastic about participating in my study, some were nervous about being audio taped.

I enjoyed conducting the observations. I had a basic understanding of the skill set needed for each program. It was enlightening to see the different processes the instructors used to teach concepts to their students. I was impressed by the professionalism of the students. I was also impressed with the concentration and focus students displayed during

the observations. After their instructors introduced me, the students proceeded with their lab activity without notice of my presence. I am grateful to my participants for sharing their remediation experiences, program documents, and allowing me to observe their lab classes. I hope that I can be instrumental in developing a remediation process that will provide consistency across the health science limited enrollment programs at the local college.

Conclusion

This experience has reinforced the observation generally confirmed by the literature, that students learn differently. I am reassured instructors are more than willing to help those students who have academic shortcomings. Since all of the instructors have worked in their field of study, they are not only knowledgeable of the skills that the students need but can provide real world experiences which can give students a better understanding of what to expect in their field of study. The students who received remediation were successful in their prospective programs at the time of the study. I am convinced the current instructors will do everything possible to assure their students' success. The instructors have an excellent understanding of teaching the adult learner. If remediation helps even one student to complete the professional-track portion of a health science program, it will also help to increase retention at the local college. If remediation was a catalyst for decreasing attrition at the local college, which this study indicated, then it warrants additional research in other programs across the system.

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Appendix A: Interview Questions

1. How long have you been teaching?
    - How many years have you taught or worked at the local college?
    - How many years have you been a director?
    - In all these years taught, what role or factor has remediation played?
2. Have you participated in remediation?
    - If yes, how many times? How many students?
    - Describe your experience with remediation and the most noteworthy incidence with the students involved.
    - If not, what is your view on the needs of the program regarding remediation?
3. About how many students needed remediation in the professional track program this year?
4. What are the factors that determined that students would be allowed to remediate as opposed to being removed from a program?
5. Please discuss your experience with students who have needed remediation before being able to take part with fieldwork or clinical rotations?
6. How is the remediation set up?
7. What are the techniques that you use during a remediation session? i.e. re-teaching, video, patient simulation, mock practicals, etc.
8. Does the student take part in the planning of the remediation?

- Is there shared control between the instructor and the student?
- Describe what shared control looks like as a negotiated agreement (learning contract) between teacher and student?

9. Who facilitates the learning during the remediation?
10. Describe what the process of facilitation typically involves? Is self-directed learning employed during the remediation process?
    - If so, describe how is self-directed learning monitored and assessed?
11. How long does the remediation last?
    - Number of hours?
    - Number of days?
    - Number of weeks?
    - If the period of remediation is long, what does it typically mean or involve? If short?
12. After the remediation, were students successful with the task in which you were remediating them?
    - How are the students who receive remediation evaluated after they have completed the remediation?
    - What does the evaluation entail?
13. In your discipline or subject area, what tasks typically requires remediation?
    - Are students who require remediation automatically placed on a learning contract?

- Can you describe the consultation process between the teacher and a student in drawing up a learning contract?

Appendix B: Observation Protocol

Observations will take place during the lab classes of each limited enrollment class. The purpose of the observation was to note the teaching strategies used at the local college during these classes. I will be seeking to observe the best practices during the lab class and whether remediation is occurring.

Is remediation occurring during the observation?

- Yes
- What is the type of remediation occurring? i.e., re-teaching, video, patient simulation, mock practical, etc.
- What is the subject area?
- How many participants?
- What are the instructional approaches being used?
- Does the content of the subject area shape the instructional intervention?
- How is the remediation designed and enacted with the students?
- No
- Additional notes
- What is the subject area?

Attire of the Group:

- Scrubs
- Polo and khaki
- Professional Attire
- Additional notes:

Number of students present in the lab: _____

Males: _____

Females: _____

Is the instructor demonstrating using laboratory equipment?

- Yes
- No
- Additional notes:

Are all of the students engaged in the laboratory activity?

- Yes
- No
- Additional notes

Are the students in groups?

- Yes
- How many students per group?
- Do the students interact with students outside of their groups?
- Do the students stay in the initial group assignments for the entire timeframe?
- No
- Additional Notes

Is the activity a hands-on activity?

- Yes
- What is the activity?
- No
- Additional notes

Does the instructor include technology in the laboratory session?

- Yes
- What type?
- No
- Additional notes

How many students does the instructor personally interact with?

How does the interaction occur?

- Visual
- Asking questions
- Formative exam

Do the students assist one another?

- Yes
- No
- Additional notes

Appendix C: Document Review Protocol

The document review includes the files from each limited enrollment program. The purpose of the review is to get information about remediation relating to each individual program. I will review the documents and files in privacy behind a closed locked door. I will seek to get the information listed:

1. How long is the program (quarters)?
2. What is number of students accepted into the professional program?
3. How many students are currently in the professional track program?
    a. Males
    b. Females
4. What are the ages of the students?
5. What is the number of students who are the first time in college?
6. What is the number of students who returned to college?
    - What is the number who have a degree, but are not working in that field of study?
    - What is the number of students who returned to college for a change in career?
7. What is the grade point average of each student?
8. What is the average GPA of the students in the program?
9. What is the number of students on a learning contract?
    a. What quarter did the learning contract commence?
10. What is the number of students who withdrew from the current cohort?
    - Failed out

- Dropped out
- Reason unknown

11. What is the number of students who are returning from the previous year?
12. What is the number of students who received remediation and why?
    a. What is the number of students who completed the program after receiving remediation?
    b. What is the number of students who were dismissed or dropped out of the program after receiving remediation?