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Examining the Effects of a High School Healthcare Summer Immersion Program

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To the Graduate Council:

I am submitting herewith a dissertation written by Jenny M. Holcombe Curry entitled "Examining the Effects of a High School Healthcare Summer Immersion Program." I have examined the final electronic copy of this dissertation for form and content and recommend that it be accepted in partial fulfillment of the requirements for the degree of Doctor of Philosophy, with a major in Educational Psychology.

Gary J. Skolits, Major Professor

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(Original signatures are on file with official student records.)

Examining the Effects of a High School Healthcare Summer Immersion Program

A Dissertation Presented for the
Doctor of Philosophy
Degree
The University of Tennessee, Knoxville

Jenny M. Holcombe Curry
December 2012

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DEDICATION

This dissertation is dedicated to my parents, Jimmy and Elaine Holcombe, whose unfailing support and encouragement through the years has always been a source of motivation.

This dissertation is also dedicated to my son, Isaiah. I hope that my persistence and dedication in completing my doctorate will serve as a source of inspiration to him in the years to come.

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Dr. Gary Skolits was the professor of the first class I took in pursuit of my doctorate in 2004. During the past eight years his presence as my dissertation chair has been one of the few constants in my life. I am forever indebted to him for his patience, understanding, encouragement, and unwavering support.

ABSTRACT

The purpose of the current study was to assess the effectiveness of the DREAMWork (Diversity Recruitment and Education to Advance Minorities in the nursing Workforce) summer high school program within the context of the substantial current and anticipated nursing shortage in the United States (Buerhaus, 2002). Previous research has shown that creating positive perceptions of nursing through programs like DREAMWork can lead to an increase in student desire to pursue a career in nursing (Cohen, Palumbo, Rambur, & Mongeon, 2004; Tomey, Schwier, Marticke, & May, 1996). More specifically, this study was interested in significant student changes (desire to pursue a career in nursing, knowledge of nursing, etc.) as a result of program participation and stakeholder perceptions of the program including student impact.

A mixed method, within subjects design was used to collect multiple quantitative and qualitative measures from program participants as well as the major stakeholders of the DREAMWork summer high school program. Descriptive analyses and paired samples *t* tests were used to assess the data.

Results indicate that students experienced significant improvements in knowledge of academic content related to nursing and realistic perceptions of nursing as a career. Overall perceptions of the program by all stakeholder groups were overwhelmingly positive; students enjoyed learning new things and participating in new experiences; other stakeholders highly rated the importance of the DREAMWork program goals and the impact of the program on the student participants.

Implications of the findings will be discussed along with potential reasons for results that were not significant. Potential changes for future DREAMWork summer program cohorts will also be explored. For future study, a longitudinal design is recommended as well as the incorporation of more consistent measures across all stakeholder groups.

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CHAPTER 1: INTRODUCTION

Examining the Effects of a High-School Healthcare Summer Immersion Program

This chapter describes the purpose of the research, the problem being investigated and the significance of the current study. To help ground the setting and circumstances of the study, appropriate contextual background elements are introduced. This chapter also introduces study assumptions and limitations. The chapter concludes with a preview of the entire study laid out chapter by chapter.

Study Problem and Purpose

The immediate problem this study addresses is the need for an assessment of the effectiveness of the DREAMWork (Diversity Recruitment and Education to Advance Minorities in the nursing Workforce) summer program. However, results of the current study will address a much larger issue than the effectiveness of one program. This study directly relates to the substantial current and anticipated nursing shortage in the United States (Buerhaus, 2002). In December 2009, the Bureau of Labor Statistics estimated a 22% increase in the RN workforce through 2018. Within the last year, almost 300,000 jobs have been added in the healthcare sector. While the field is experiencing significant growth, there is also an issue of retention/attrition leading to a decrease in the number of trained nurses choosing to remain in the field (Crow, Hartman, & McLendon, 2009). These combined factors create a more complex problem; not only is there an issue of recruiting more students into the field to fill increased positions, but once the positions are filled there is the issue of keeping them filled (Glossop, 2002). A parallel

phenomenon exists in the educational realm of nursing, as the number of students entering nursing education programs is low and subsequently the number of nursing students graduating is even lower. Graduation rates in baccalaureate nursing programs approach 50% nationwide leaving much room for improvement (Buerhaus, 2002; HRSA, 2010; Newton & Moore, 2009; Peter, 2005).

Ultimately, the DREAMWork summer program is attempting to favorably impact the recruitment and retention of future nurses. Previous research has shown that a need exists for realistic job previews to lessen the gap between student expectations of a career in nursing and what the profession actually requires and/or has to offer (Crow, Hartman, and McLendon, 2009). The DREAMWork students are given a realistic view of the nursing occupation through the introduction of nursing-related curriculum as well as hands-on and observational experiences at local clinical locations.

Recruitment is directly influenced by student perceptions of what it means to be a nurse including the daily tasks involved and the necessary knowledge/education required (Cowan & Johnson, 2011; Matutina, Newman, & Jenkins, 2010; Price, 2008). If the DREAMWork summer program shows a significant increase in student desire to pursue a career in nursing the program could be seen as a potential recruitment tool. Additionally, by providing a realistic job preview of nursing as a career, the DREAMWork summer program has the potential to positively influence retention after the students enter the field of nursing because their expectations are more closely in line with the responsibilities of a nursing career. Hom et al. (1998) found that only 8.5% of nurse

given realistic job previews voluntarily quit in contrast to 17.8% of nurses not given realistic job previews.

Regardless of a students' desire to enter a particular field of study, nursing included, ultimate success is contingent upon the students' ability to successfully complete the required training (Newton & Moore, 2009). In this context the required training is the undergraduate curriculum for a bachelor's degree in nursing. The analysis of multiple pre/post measures will assess how well the DREAMWork summer program assists students in becoming more successful in their pursuit of higher education.

It can be argued that for an intervention or training program to be considered successful it should not only show significant improvements for the participants but should also be well received by its major stakeholders (McCoy & Hargie, 2001). The stakeholders should perceive the program as accomplishing the goals and objectives it claims to address. Post evaluations by all major stakeholders will be assessed to determine how the DREAMWork summer program is perceived and what, if any, potential changes may need to occur in future years.

Accordingly, the purpose of the current study is to determine the effectiveness and impact of the DREAMWork summer program on the participants in regards to their awareness, knowledge, and skills related to the nursing profession. The DREAMWork summer program began in 2008 and is part of a larger Health Resources and Services Administration (HRSA) grant funded project targeting several groups including: transition to college students, pre-nursing undergraduate students, and undergraduate nursing students. The summer program is targeted towards disadvantaged and/or

minority high school students with an interest in nursing/healthcare related careers. HRSA defines *disadvantaged* as coming ‘from an environment that has inhibited the individual from obtaining the knowledge, skill, and abilities required to enroll in and graduate from a health profession school...or from a family with an annual income below a level based on low income thresholds according to family size published by the U.S. Bureau of Census.’ (HRSA, 2012) The purpose of the DREAMWork summer program is to expose students to a wide range of content and experiences that will provide them with a more realistic view of the day to day expectations and responsibilities of a nurse and to prepare them for success as an undergraduate nursing student. A full listing of program content by summer can be found in Appendix B.

Research Methodology, Questions, and Procedures

Four cohorts of high school students have participated in the summer program since the DREAMWork grant obtained funding in 2008. Students were selected to participate from applications received from local high schools. Representatives from the DREAMWork program were in contact with guidance counselors and presented information on the DREAMWork program to students throughout the school year to encourage applications. To qualify to participate, students had to be a rising junior or senior in high school, have at least a 2.75 GPA, and come from a minority or disadvantaged background (DREAMWork program director, personal communication, February 2011).

The methodology for this study is a mixed method, within subjects design. This approach was chosen to present a clearer, more complete understanding of the DREAMWork summer program by incorporating and integrating both quantitative and qualitative data from multiple sources (Creswell, Klassen, Powell Clark, & Smith, 2011).

There were two guiding research questions for this study:

- (1) What, if any, changes are experienced by the students who participate in the DREAMWork summer program in terms of expected program outcomes (e.g., interest in nursing as a career, critical thinking, academic-related measures)?
- (2) How is the DREAMWork summer program perceived by the major stakeholders (participants, parents, staff/faculty)?

Research Question 1: What, if any, changes are experienced by the students who participate in the DREAMWork summer program in terms of expected program outcomes (e.g., interest in nursing as a career, critical thinking, academic-related measures)?

DREAMWork Daily Student Evaluations (Appendix C) as well as overall post evaluations (*DREAMWork Student Evaluation Survey* – Appendix D) were collected from the students in each cohort. Additionally, two pre/post student measures were collected for the Summer 2011 cohort specifically to assess student preparedness to pursue higher education. These assessments included the *Nelson-Denny Reading Test* and the *Watson-Glaser Critical Thinking Appraisal*. These measures (or sample items, where appropriate, from these measures) are located in the appendices (Appendix E – H). Where applicable, pre measures were collected at the beginning of the summer program and post measures were collected on the final day of the summer program.

Frequency and descriptive analyses were conducted on *DREAMWork Daily Student Evaluations* and the *DREAMWork Student Evaluation Survey*. Paired samples *t* tests were conducted on the pre/post data for the additional student measures collected for the Summer 2011 cohort. Content analysis (Elo & Kyngas, 2008) was used to identify themes among respondents for the open-ended items on the *DREAMWork Daily Student Evaluations* and the *DREAMWork Student Evaluation Survey*.

Research Question 2: How is the DREAMWork summer program perceived by the major stakeholders (participants, parents, staff/faculty)? Student perceptions of the DREAMWork summer program were collected each summer using the *DREAMWork Student Evaluation Survey* (Appendix D). Parent perceptions were collected for the Summer 2009 cohort using the *DREAMWork Parent Evaluation Survey* (Appendix I). During Summer 2012 stakeholder perceptions (i.e., faculty/staff) were collected using an online version of the *DREAMWork Stakeholder Evaluation Survey* (Appendix J).

Descriptive and frequency analyses were conducted to organize and synthesize the responses collected on the student, parent, and stakeholder versions of the DREAMWork Evaluation Surveys. Content analysis was also used to determine similar themes for the open-ended items on the surveys.

Additionally, interviews were conducted during Summer 2012 with the DREAMWork program director, the school of nursing director, and several former DREAMWork students currently enrolled in college. Questions during the interviews addressed the goals and objectives of the DREAMWork summer program as well as

perceived student benefits. Content analysis was used to identify themes across responses. Interview protocols are located in the appendices (Appendix K – L).

Study Assumptions and Limitations

There was very little control by the researcher in regards to the types of measures used and the data collection process. All of the student data analyses (with the exception of the student interviews) in the current study used data collected from the previous four summer cohorts. There is some consistency in the type of data collected because only minor changes have been made to the *DREAMWork Daily Student Evaluations* and the *DREAMWork Student Evaluation Survey* over the last four years. However, there is considerable missing data across the four cohorts. Table 3 shows all the measures analyzed in the current study and the participants for which they exist.

While student and some parent data were collected, prior to this study no data existed for staff/faculty over the first four years of the program. There is obvious need for this type of data but because it was not collected for each individual cohort, the only way to obtain it now is through retrospective ratings provided by the staff/faculty. Some of these ratings may come almost four years after the last interaction with the DREAMWork program.

The students participating in the DREAMWork summer program are self-selected. They must complete an application and meet certain requirements for participation but they do not constitute a random sample in any form. This creates a problem for generalizing the results to other high school students beyond this sample.

The purpose of this study is not to determine the ‘best’ design for a high school summer nursing exposure program. However, based on various data analyses and program comparisons, recommendations will be made regarding desirable characteristics. These recommendations can be used to shape the future direction of the DREAMWork summer program and hopefully will be useful to others attempting to develop a similar program or improve an existing program.

Often evaluators are asked to conduct evaluations after measures have already been determined and/or administered leaving them with little control. There is no set format for conducting this type of retrospective evaluation process. The completion of this study allowed the researcher to gain insights into this process that will be shared in the discussion section.

Chapter Summary and Preview of Remaining Chapters

This chapter explained the purpose of the study, the problem being investigated and the significance of the current study. Contextual information for the DREAMWork program was also presented to provide the foundation for the current study and introduce potential assumptions and limitations. Chapter 2 will present an extensive review of the literature supporting this study. Topics of interest will include the nursing shortage, retention/attrition issues, recruitment, realistic job previews, and programs similar to DREAMWork. Chapter 3 will describe the study participants and context as well as the mixed methods study design. Chapter 4 reports the findings and conclusions of the study

and is organized by research question. Finally, Chapter 5 presents the discussion and provides recommendations for future research.

CHAPTER 2: REVIEW OF LITERATURE

This chapter reviews the literature relevant to this study including contextual factors leading to the need for student enrichment programs in nursing. The current and projected nursing shortage is discussed as well as the factors influencing the shortage and programs similar to DREAMWorks that have previously attempted to address these factors. Potential impacts and consequences of successful programs are also examined lending support for the need for a thorough evaluation of the DREAMWork program.

Nursing Shortage

By 2020 the nursing shortage in the United States will reach such an extreme level that an additional 800,000 registered nurses will be needed than exist (Buerhaus, 2002). Many potential reasons for this shortage are explored in the literature including: (1) women, who have traditionally been associated with the nursing profession, exploring other career options (Buerhaus, 2002), (2) the increasing average age of the nursing workforce (Buerhaus, 2002), (3) the undesirable view of nursing as a career option (Cohen, Palumbo, Rambur, & Mongeon, 2004) (4) declining enrollment in nursing programs nationwide (Grossman, et. al. 1989), and (5) disparate recruitment, retention, and graduation rates among minority students (Underwood & Fay, 1996; Sherrod, 1995). The DREAMWork summer program does not directly address these contributing factors to the nursing shortage; however, it is anticipated that several of these factors may be indirectly impacted (Buerhaus, 2002; Drenkard, Swartout, & Hill, 2002). The current review will specifically address perceptions of nursing as a career and the combined

issues of recruitment, enrollment, retention, and graduation rates, especially as they relate to minority and underrepresented populations.

Perceptions of Nursing

Previous research has shown that student perceptions of nursing are not very positive and do not serve to attract them to the career (Campbell-Heider, Sackett, & Whistler, 2008; Morris-Thompson, Shepherd, Plata, & Marks-Maran, 2011). Many students associate a career in nursing with the lack of upward mobility (Grossman, et. al., 1989), lack of respect and/or appreciation (Hemsley-Brown & Foskett, 1999), lack of autonomy (May, Champion, & Austin, 1991), and lack of academic rigor (Cohen, et. al., 2004). These characteristics for which nursing is perceived to be lacking are identified as desirable characteristics of an 'ideal' career (Cohen, et. al. 2004; Hemsley-Brown & Foskett, 1999; Tomey, Schwier, Marticke, & May, 1996). Other research has shown that these perceptions tend to change over time between the early to late teen years from more positive perceptions to more negative/less desirable perceptions of nursing as a career option (May, et. al. 1991). This would suggest that high school students fall within the ideal age range for a program designed to positively influence these perceptions.

Grossman and her colleagues (1989) surveyed 300 high school juniors to assess their perceptions of nursing as career choice. The twenty-two item Perception of Nursing Survey (PNS) also asked whether the student was considering a career in nursing and whether they had exposure to any nursing role models. Most of the students surveyed seemed unaware of opportunities for upward mobility or potential expanded roles

(teaching, research, etc.) in the field. Paired samples *t* tests revealed that students considering a career in nursing had significantly more positive perceptions of nursing ($p < .002$). Additionally, chi square analyses showed that students with access to a nursing role model were significantly more likely to consider nursing as a career path. Programs like DREAMWork are designed to provide exposure to these nursing role models (Bowman, Stilson, & Girardeau, 2005; Jaffe-Ruiz, Stokes, & Thomas, 1989).

Hemsley-Brown and Foskett (1999) used focus groups with a total of 410 youth ages fourteen to seventeen to examine students' reasons for choosing or rejecting nursing as a career path. Their results were different from those of other researchers, in that over half the students considered nurses to be 'very well thought of' indicating a certain level of admiration or respect for the career. However, students also viewed nurses as participating in manual work, having fewer opportunities to reach the top, and less decision-making ability than other career options leading to a perception of diminished status. The contrast between the perceived level of respect and the lack of status of the occupation led researchers to conclude that career desirability should be considered as a combination of admiration (respect) and envy (desire to emulate).

May and his colleagues (1991) also examined perceptions of nursing careers. Using a convenience sample of 1,116 mixed-age participants including; 330 school age, 327 parents, 76 school nurses, 81 teachers/counselors, and 302 college students, the researchers compared perceptions of the 'ideal' career and nursing as a career. A 17 item instrument was created with a 5-point Likert scale ranging from strongly disagree (1) to strongly agree (5). 'Ideal' careers were viewed as more financially rewarding, more

respected, and more powerful than nursing. Four characteristics associated with ideal careers and nursing careers were found to be: (1) application of intelligence, (2) caring for people, (3) career security, and (4) scholastic and academic achievement (May, et. al., 1991).

The DREAMWork summer program addresses each of these four components (Lindgren & Harris, 2007). Students learn about the academic requirements of a nursing degree and the necessity of individual courses to nursing practice. Classes are also offered in core content areas essential to success in high school and subsequent success in college. Job shadowing experiences allow students to see real nurses caring for real people in a working environment. Finally, students are exposed to a variety of nursing opportunities demonstrating career security, upward mobility, and varied employment settings.

Research has shown that an optimal time may exist for exposing students to nursing roles. May, et. al. (1991) found that eighth grade students had more positive perceptions of nursing than college freshmen indicating a potential shift in career perceptions from middle school to college. Researchers also noted that adults with a high school education or less had a significantly more positive attitude toward nursing. This finding was in line with previous research showing that the field of nursing is now attracting more people from lower socio-economic levels (May, et. al., 1991).

Tomey and his colleagues (1996) used the 17-item instrument developed by May, et. al. (1991) to assess the impact of a presentation about nursing on career perceptions among 347 high school students. Results were similar to those of May et. al. (1991) that

students desired significantly more appreciation, money, power, and safety in an 'ideal' career than they perceived available in a nursing career. After the presentation, the students rated power, leadership, and money as more significantly related to a career in nursing. This significant finding supports the use of presentation-based techniques for changing student perceptions about nursing careers. The DREAMWork program incorporates information about the field of nursing with didactic and hands-on learning opportunities (Lindgren & Harris, 2007).

In another study using the same 17-item instrument created by May, et. al. (1991), Cohen and her colleagues (2004) compared perceptions of 'ideal' careers with careers in nursing using a convenience sample of 301 youth ages nine to fifteen. Two additional items were added to the instrument; one about having a family member who is a nurse and one about recent hospitalizations. Similar to previous findings, students viewed nurses as having less decision-making, being busier, being more hands-on, and making less money than the 'ideal' career. Additionally, while students perceived having a college degree as necessary for both the 'ideal' career and a nursing career, the need for good grades was not rated as high for a career in nursing. The researchers feel this discrepancy between the need for a college degree and the need for good grades may indicate a perceived lack of academic rigor or necessary intellect to be a nurse. DREAMWork addresses this discrepancy by exposing students to academic content they would encounter in an undergraduate nursing program (Lindgren & Harris, 2007).

Improving Perceptions of Nursing

The research involving career perceptions has led to a wealth of recommendations on how to improve the desirability of nursing as a career option. Suggestions for establishing role model programs (buddy system, shadow-a-nurse, etc.) have been presented as a way to positively influence the recruitment of high school students into baccalaureate nursing programs and ultimately nursing careers (Grossman, et. al. 1989). During the high school years many students have rejected most jobs on the basis of perceptions alone (Hemsley-Brown & Foskett, 1999). Programs designed to combat the negative perceptions, or to reframe them as positives, could have a major impact on students' desire to choose nursing as a career path and a potential positive impact on the current and predicted nursing shortage. DREAMWork addresses negative perceptions by educating students about nursing as a career and providing positive nursing role models (Lindgren & Harris, 2007).

Recruitment and Retention

Another set of issues greatly impacting the current nursing shortage, and more specifically, the disparity of minorities represented in nursing, includes recruitment, enrollment, retention, and graduation rates. Each of these issues represents a specific problem but they are also interdependent, each one building on the previous. Graduation rates (especially number of graduates) are directly influenced by retention rates, retention rates are directly influenced by enrollment rates, and enrollment rates are directly influenced by recruitment.

Low numbers of minority graduates has remained a persistent problem in the United States over the past three decades (Public Health Foundation, 2001). Underrepresented minorities (URMs) make up approximately twenty-five percent of the U.S. population but only account for about ten percent of all health professionals. According to the Health Resources and Services Administration (2010), the greatest barrier to URMs entering healthcare fields is lack of persistence – completing high school, failure to enroll in and graduate from college. URMs make up thirty percent of the U.S. college age population but only fourteen percent of all U.S. college graduates (HRSA, 2010). The disparity in these numbers may indicate a problem somewhere along the educational pipeline.

The best place to impact all of these issues (recruitment, enrollment, retention, & graduation rates) at the same time is through recruitment/enrollment, the first step in the sequence. Recruitment and enrollment will be discussed simultaneously because recruitment is typically not deemed successful unless it results in enrollment. One of the main objectives of the Healthy People 2010 initiative is to “increase the number of underrepresented minorities entering health professions programs” (Public Health Foundation, 2001, p. ii). This objective shows the importance of focusing on recruitment/enrollment as the first step to decreasing the nursing shortage and increasing the number of URMs in the field.

Barton & Swider (2009) note that baccalaureate nursing programs struggle with recruiting and retaining minority students. Some of this difficulty is due to student educational deficits and perceived barriers to program entry. Summer nursing camps at

the high school level have been identified as an evidence-based recruitment intervention. These camps can help alleviate some of the secondary school deficits and inform students of the necessary steps to enter an undergraduate nursing program (Barton & Swider, 2009). DREAMWork attempts to accomplish this objective through didactic nursing-related instruction, college preparation curriculum content, as well as realistic job experiences (Lindgren & Harris, 2007).

Fried (2002) believes realistic job previews are an effective recruitment tool because they present actual information about job requirements and the work environment. The presentation of both the positive and negative aspects of the job has been shown to result in reduced turnover and improved retention in nursing (Hom, Griffeth, Palich, & Bracker, 1998; 1999). DREAMWork students have multiple opportunities during the summer program to shadow nurses in their environment observing daily activities and responsibilities.

Crow and his colleagues (2009) suggest that one of the main challenges faced by the healthcare field is retention, especially for nurses. The question becomes, once students have been attracted to and entered in a program of study in nursing, how are they supported and encouraged to continue along that path to the ultimate goal of graduation and entry into the field? Additionally, there is a continuing disparity in the number of URMs who persist through the educational pipeline to graduation (AAMC, 2007). An increase in the number of URMs entering baccalaureate programs does not necessarily lead to an increase in the number of graduates (Childs, Jones, Nugent, & Cook, 2004) but it would be a good place to start.

Many programs have been developed to assist students navigate the educational pipeline to a degree in nursing or some other health related field. However, most of these initiatives have focused on recruitment and not helping students once they have entered a baccalaureate program of study. Lack of academic preparation for the rigor associated with an undergraduate program is one of the main reasons given for high attrition rates in these programs, especially among URM students (Childs et al., 2004). Exit interviews with nursing students who have dropped out of a program support academic difficulties as a main reason for attrition (Glossop, 2002). DREAMWork seeks to address this problem by exposing students to the academic content required for an undergraduate nursing degree (Lindgren & Harris, 2007).

Even though academic difficulties or lack of academic preparation is provided as a reason for attrition, it is a problem that should be addressed long before it causes dropout. Most initiatives that address academic issues are set up as interventions for current students. These types of programs include student mentoring (Price & Balogh, 2001), enrichment program study groups (Jeffreys, 2001), and required summer pre-matriculation courses (Hesser, Pond, Lewis, & Abbott, 1996). While some of these programs have been successful at reducing attrition, student enrichment programs like DREAMWork that address academic preparedness issues prior to entry into a nursing program may serve to reduce future attrition rates before academic problems arise.

Programs Similar to DREAMWorks

Other programs have attempted to address some of these issues as well. Some of these programs share similar characteristics with the DREAMWork summer program. Each has had varying levels of success as measured by different measures specific to the individual program. Drenkard, Swartout & Hill (2002) present findings from one of the first middle school focused summer nursing immersion programs. The two week camp exposed students to multiple healthcare settings, skills labs, and professional nursing opportunities. At the conclusion of the program students were more likely to consider nursing as an occupation.

Bumgarner, Means & Ford (2003) describe a summer health career program that has existed for ten years. The program was designed to encourage underrepresented and minority junior and senior high school students to enter health careers. Both didactic content classes and clinical observations were used to 'recruit, educate, and motivate' students for careers in health professions. The program begins with four days of didactic classes and a day of observation/tours. Then the students participate in forty hours of clinical observation in a setting of specific interest to each student. Longitudinal data on program participants show that 70% of participating students (N=160) are pursuing a degree or currently employed in a health profession and 50% of these are nursing specific.

Yeager & Cheever (2007) studied the outcomes of a four day, three night residential nursing summer camp offered to high school sophomores. The camp was designed to influence perceptions toward nurses and nursing careers and merge those

perceptions with those of the 'ideal' career. At the end of the program participants believed nurses were smarter and better educated, that nursing jobs were more flexible and more exciting, and that nurses have good job security.

Chapter Summary

The driving force behind the DREAMWork grant is to increase nursing education opportunities for disadvantaged and/or minority students. A direct result of the successful completion of this aim is increased numbers pursuing a career in nursing and successfully entering the job market. This goal is directly in line with the objectives of Healthy People 2010 Guidelines which call for the development of programs that promote health career opportunities and the promotion of health professions in high school and minority populations (Public Health Foundation, 2001). These demographic groups are identified in previous research as underrepresented in the nursing population (Hodgman, 1999) and underprepared for the rigor of healthcare related studies at the university level (Public Health Foundation, 2001; Wilson & Murphy, 1999).

The previous research presented in this section shows that students exposed to the nursing profession and educational content necessary to become a nurse may be more likely and better prepared not only to pursue a career in nursing but to be successful in the field. Programs similar in structure to the DREAMWork summer program have shown success in changing student perceptions about nursing, desire to become a nurse, and greater preparedness in future educational pursuits (Drenkard, Swartout, & Hill, 2002; Bumgarner, Means, & Ford, 2003; Yeager & Cheever, 2007). The purpose of the

current study was to explore the effects of one program specifically designed to promote the nursing profession among select high school students (i.e., students representing underrepresented populations in the nursing profession) on program participants.

The two guiding research questions for this study were:

- (1) To what extent do program participants achieve expected outcomes (e.g., interest in nursing as a career, critical thinking, academic-related measures)?
- (2) How is the DREAMWork summer program perceived by the major stakeholders (participants, parents, and staff/faculty)?

CHAPTER 3: METHOD

This chapter introduces the study research questions and methods as well as serves to provide the rationale behind the design of the study. It describes the unique context of the setting and participants involved in this study as well as the instruments and the data collection methods employed.

Research Questions and Their Rationale

The two guiding research questions for this study were:

- 1) What, if any, changes are experienced by the students who participate in the DREAMWork summer program in terms of expected program outcomes (e.g., interest in nursing as a career, critical thinking, academic-related measures)?
- 2) How is the DREAMWork summer program perceived by the major stakeholders (participants, parents, staff/faculty)?

This section will explain the rationale behind the research questions that guided this study.

Research Question #1. What, if any, changes are experienced by the students who participate in the DREAMWork summer program in terms of expected program outcomes (e.g., interest in nursing as a career, critical thinking, academic-related measures)?

The DREAMWork summer program has not been substantively evaluated previously with regard to participant outcomes and potential impact. While program changes have been made from summer to summer, they have been based primarily on the

subjective assessment and rationale of the project director and staff rather than data driven. Therefore, this research question was directed toward a more rigorous examination of potential changes experienced by the DREAMWork summer program students during a given summer.

Although the curriculum and schedule have changed across the years/cohorts, the *DREAMWork Daily Student Evaluations* completed by students each summer have remained relatively the same. The *DREAMWork Student Evaluation Survey* also remained relatively the same (although it was not administered both pre and post to each cohort) allowing for similar analysis of data by individual cohorts and analysis across cohorts on open-ended items. Table 1 presents all measures in the current study and the cohorts for which they were collected.

One of the items included in the *DREAMWork Student Evaluation Survey* (2009 & 2010) addresses the students' desire to pursue a career in nursing. A major objective of the DREAMWork summer program is to increase student knowledge of nursing/healthcare fields and subsequently increase student desire to pursue education in those fields. The results of the analysis on this item are of paramount importance to the DREAMWork grant.

Significant additions were made to the instruments used to evaluate the 2011 cohort of students. This cohort had pre and post administration of two new instruments: the *Nelson-Denny Reading Test* and the *Watson-Glaser Critical Thinking Appraisal*. The results of these measures were examined to determine whether any changes occurred

specifically for the 2011 cohort and to determine whether these measures should be included in the evaluation of future summer cohorts.

Ultimately, the goal of any intervention is to have some effect (usually a positive one) on the participants. This question directly responded to that goal using measures collected over the last four years. The results for this question will be used formatively to shape the curriculum content and establish the evaluation instruments needed for future summers of the DREAMWork program.

Research Question #2. How is the DREAMWork summer program perceived by the major stakeholders (participants, parents, faculty/staff)?

Stakeholders play a very important role in the direction of any program by providing feedback about the program itself and identifying potential concerns or issues. During the first four years of the DREAMWork summer program student feedback was paramount but very little, if any, information was collected from other stakeholders. Other important stakeholders for the DREAMWork summer program include: parents, DREAMWork faculty/staff, the DREAMWork project director, and the director of the school of nursing.

Data from these stakeholders could provide interesting insights about the participating students and the DREAMWork summer program as a whole. Parent feedback was collected for some summers but not all. Due to lack of record keeping on parents, gathering new/additional data from parents was feasible. Faculty/Staff were not surveyed in the past but were asked to complete a retrospective instrument about their

experiences with the DREAMWork program for the purposes of this study. Finally, individual interviews were conducted with the DREAMWork project director, the school of nursing director, and former DREAMWork participants currently enrolled in college.

Table 1. *Collected Measures by Time*

Student Measures		2008	2009	2010	2011	Post 2012
<i>DREAMWork Student Evaluation Survey</i>	Pre	X	X	X		
	Post	X	X	X	X	
<i>DREAMWork Daily Student Evaluations</i>		X	X	X	X	
<i>Nelson-Denny Reading Test</i>	Pre				X	
	Post				X	
<i>Watson Glaser Critical Thinking Appraisal</i>	Pre				X	
	Post				X	
Stakeholder Measures		2008	2009	2010	2011	Post 2012
<i>DREAMWork Stakeholder Evaluation Survey</i>						X
<i>DREAMWork Director Interview</i>						X
<i>Department of Nursing Director Interview</i>						X
<i>DREAMWork Student Interview (previous student)</i>						X
<i>DREAMWork Parent Evaluation Survey</i>	Pre		X*			
	Post		X*			

* Pre and Post items were not parallel

Design of Study

Much of the data used in this study was already collected as part of the DREAMWork grant, but was not analyzed in conjunction with other measures. The purpose of any analysis to this point has been solely for reporting to the grant funding agency. The data collected in previous years from all DREAMWork summer students was used to answer Research Question #1. Because of curriculum and schedule changes from year to year the data from each cohort was analyzed and reported separately.

In addition to existing data, new data was also collected to answer Research Question #2. The *DREAMWork Stakeholder Evaluation Survey* was used to collect data from faculty and staff involved with the DREAMWork high school summer program. Additionally, individual interviews with former DREAMWork high school student participants, the DREAMWork program director, and the director of the school of nursing were conducted to examine possible themes regarding the perception and impact of the DREAMWork program.

The methodology for this study is a mixed method, within subjects design. This approach is most appropriate to present a clear and complete understanding of the DREAMWork summer program by incorporating both quantitative and qualitative data from multiple sources (Creswell, Klassen, Powell Clark, & Smith, 2011). Mixed methods were used in this study to help contextualize the program and the participants.

Context of Study

The DREAMWork program is a HRSA grant funded initiative designed to increase educational opportunities and the representation of students from disadvantaged backgrounds (specifically racial and ethnic minorities; first generation college students; low socioeconomic status). The three main objectives of the DREAMWork program as a whole are: (1) pre-entry preparation for individuals interested in nursing; (2) student stipends to increase the ability of disadvantaged students to pursue nursing as a career; and (3) retention activities that address barriers throughout the educational experience specific to this disadvantaged population. The program targets five distinct groups of participants including: (1) middle school students; (2) high school students; (3) transition to college students; (4) pre-nursing students; and (5) students enrolled in the School of Nursing (Lindgren & Harris, 2007).

The three-fold strategy of the DREAMWork summer program is to: a) expose high school students to nursing through didactic instruction on topics necessary to becoming a nurse; b) expose high school students to nursing through 'hands-on' activities parallel to those a nurse would encounter on a daily basis (job shadowing); and c) provide general college preparation information designed to encourage high school students to pursue higher education (Lindgren & Harris, 2007).

The summer program under investigation in this study addresses the three main objectives of the overall DREAMWork grant in addition to the high school specific goals. First, the DREAMWork summer program provides pre-entry preparation to high school level students with an interest in a career in healthcare. Next, students in the

DREAMWork summer program are given stipends, providing an opportunity for students without the financial ability to participate. Finally, it is expected that the DREAMWork summer program will assist in attracting students to healthcare careers and retaining them in the future (DREAMWork program director, personal communication, November 2010).

The data for the current study were collected from participants in the DREAMWork summer program and identified stakeholders of the program. Thus, the focus of the current study is only on one of the five groups impacted by the overall DREAMWork grant. To qualify to participate in the DREAMWork summer program, a student must be a rising junior or senior in high school, have a GPA greater than 2.75, and be from an identifiably disadvantaged or minority background.

The high school summer program began in 2008 and at least some student evaluation data exists for the four individual summer cohorts. Any qualitative data collected about the program as a whole was combined across cohorts. Additional data was collected for the Summer 2011 cohort including measures of critical thinking and reading ability. These additions created the need to evaluate the Summer 2011 cohort separately on these measures.

Participants

Participants in this study included high school students, parents, DREAMWork faculty/staff, the DREAMWork program director, and the director of the school of nursing. Parents of DREAMWork high school participants are major stakeholders in this program, entrusting their students to the DREAMWork staff for a two to four week

period (depending on the summer in which the student participated). Anyone presenting content to students in the summer program, past or present, was included as a DREAMWork faculty/staff stakeholder.

Upon acceptance to the DREAMWork high school summer program, students and their parents attended an orientation session outlining the structure and schedule of the program. During the orientation session, parental consent and student assent forms were signed for the purpose of research and evaluation related data collection. The purpose and anonymity of the data collection process was explained to the parents and student participants with time made available for questions and/or concerns.

Student Participants. Characteristics of DREAMWork summer program students from 2008-2011 are presented in Table 2. A complete list of program content covered by cohort year is included in Appendix B.

Summer 2008 (N = 24). There were twenty-four participants in this cohort. The *DREAMWork Evaluation Survey* and the *DREAMWork Daily Student Evaluation* were completed by this group of students. This cohort had fourteen student meeting days during a four week period.

Summer 2009 (N = 16). There were sixteen participants in this cohort. The *DREAMWork Evaluation Survey* and the *DREAMWork Daily Student Evaluation* were completed by this group of students. This cohort had eight student meeting days over two week period.

Summer 2010 (N = 22). There were 22 participants in this cohort. The *DREAMWork Evaluation Survey* and the *DREAMWork Daily Student Evaluation* were

completed by this group of students. This cohort had ten student meeting days over a three week period.

Summer 2011 (N = 27). There were 27 participants in this cohort. The *DREAMWork Evaluation Survey* and the *DREAMWork Daily Student Evaluation* were completed by this group of students. Additionally, this cohort completed the following measures: the *Nelson-Denny Reading Test* and the *Watson-Glaser Critical Thinking Appraisal*. This cohort had seventeen student meeting days over a five week period.

Previous DREAMWork Student Participants (N=1). These students were identified as previous DREAMWork student participants who are current undergraduate students at the university where the DREAMWork program is housed. Individual interviews were scheduled to gain insight on their experience in the summer program, *Stakeholder Participants*. These participants were identified as having a significant interest in the outcomes of the DREAMWork summer program.

DREAMWork Faculty/Staff (N=13). This stakeholder group included anyone who presented content material to the students during any of the previous summers. An electronic version of the *DREAMWork Stakeholder Evaluation Survey* was used to collect feedback about their experiences with the students and their perceptions of the DREAMWork high school summer program as a whole.

DREAMWork Project Director/Director of School of Nursing (N=2). These individuals were interviewed individually using the *DREAMWork Director Interview* protocol. Both played a significant role in the development of the DREAMWork program overall and writing the original HRSA grant to obtain funding.

Parents of DREAMWork Students (N=13). The data for this group was not collected every year. Post evaluation data was collected for the parents of participants in the 2009 cohort only using the *DREAMWork Parent Evaluation Survey*.

Table 2. *Characteristics of Students in the DREAMWork Summer Program*

Student Characteristics	2008	2009	2010	2011
<i>Number</i>	24	16	22	27
<i>Gender</i>				
<i>Males</i>	*	2 (12.5%)	2 (9%)	2 (7%)
<i>Females</i>	*	14 (87.5%)	20 (91%)	25 (93%)
<i>Ethnicity</i>				
<i>African American</i>	*	12 (75.0%)	15 (68.2%)	*
<i>White/Caucasian</i>	*	2 (12.5%)	6 (27.3%)	*
<i>Mixed Race/Other</i>	*	2 (12.6%)	1 (4.5%)	*
<i>Age (range)</i>	*	15-17	15-17 (16.14)	15-17
<i>Year in School</i>				
<i>Junior</i>	*	6 (37.5%)	10 (45%)	*
<i>Senior</i>	*	10 (62.5%)	12 (55%)	*

* Indicates unknown value

Measures

The following quantitative and qualitative measures were used for data collection. Table 1 presents all of the measures used in the current study and the cohorts for which they were collected.

Student Measures. Student measures were used to assess several specific aspects of the DREAMWork program. First, students were asked to rate each day of the DREAMWork program as well as their overall perceptions of the DREAMWork program. Program

directors identified reading and critical thinking as important skills for successful nursing students leading to the introduction of measures assessing these areas for the 2011 cohort. Finally, it was important to assess student perceptions of the summer program after beginning their college careers.

DREAMWork Student Evaluation Survey. A pre- and post- survey was developed by the DREAMWork staff to assess student perceptions and feelings about the DREAMWork summer program. Pre- items addressed topics such as: (1) how the student learned about the DREAMWork summer program, (2) how likely they are to choose a career in nursing, and (3) knowledge of necessary nursing related content. Post-items addressed topics such as: (1) student satisfaction with the DREAMWork summer program, (2) how likely they are to choose a career in nursing, and (3) knowledge of nursing related content. Pre survey data was not collected for the 2011 cohort.

DREAMWork Daily Student Evaluations. Each day of the DREAMWork summer program contains new content information and activities. The students completed daily evaluation forms developed by DREAMWork staff to rate the content presented that day on dimensions such as: usefulness, clarity of presentation, and whether the content should be included in the curriculum the following summer.

Nelson-Denny Reading Test. The *Nelson-Denny Reading Test* (NDRT; Brown, Fishco, & Hanna, 1993) Form G and Form H each consists of two parallel subtests, Vocabulary and Comprehension. The Vocabulary subtest has a time limit of 15 minutes. There are 80 items, each with five answer choices. The Comprehension subtest has a time limit of 20 minutes with the first minute used to determine the reading rate of the

test taker. There are 38 questions, each with five answer choices. Alternate forms reliability ranged from .81 to .90 on the subtests and total score and .68 for the reading rate. This test has been used in employment screening for police and law enforcement personnel resulting in a grade level cut-off score of 11 being considered 'critical' for training success and lack of academic difficulties (1993). [2011 cohort only]

Watson-Glaser Critical Thinking Appraisal. The *Watson-Glaser Critical Thinking Appraisal* (WGCTA; Watson & Glaser, 1980) consists of five subtests: Inference, Recognition of Assumptions, Deduction, Interpretation, and Evaluation of Arguments. There are sixteen items on each subtest. Split-half reliability was calculated on ten different norm groups resulting in a coefficient range from .69 to .85. Alternate forms reliability was calculated at .75 between forms A and B. [2011 cohort only]

Previous DREAMWork Student Interview. This interview protocol was specifically developed by the researcher to gain insight from current undergraduate students who previously participated in the DREAMWork summer program for high school students.

Stakeholder Measures. These measures were important for assessing the individual perceptions of the multiple stakeholder groups important to the DREAMWork program.

DREAMWork Stakeholder Evaluation Survey. The *DREAMWork Stakeholder Evaluation Survey* was designed by the researcher to collect data from the faculty and staff involved with the DREAMWork program during the first four years of the grant. The instrument was designed to assess stakeholder's experience with the DREAMWork program as a whole. Individual items ask respondents to rate the program overall, the

students, the structure, and the curriculum. Faculty/staff were contacted via e-mail to solicit their participation and the instrument was administered using an online, electronic survey format (<http://surveymonkey.com>). This is a retrospective instrument because the faculty and staff were asked to reflect on past experiences with the DREAMWork program that may have occurred up to four years prior to data collection.

DREAMWork Director Interview. This interview protocol was specifically designed by the researcher to gain insight from the DREAMWork program director and the School of Nursing director regarding the goals and objectives of the summer program.

DREAMWork Parent Evaluation Survey. A survey was developed by DREAMWork staff to assess parent perceptions and feelings about the DREAMWork summer program. Parents were asked to rate the usefulness and interest of the program as well as whether or not they would encourage their students to participate in DREAMWork related activities during the school year. This instrument was only used for the 2009 cohort.

It is important to note that all of the measures developed as part of the DREAMWork program do not have established reliability and/or validity. These instruments were created out of necessity to measure particular aspects of the program for which there were no effective existing instruments.

Data Collection

With the exception of the *DREAMWork Student Interview*, all student participant data was collected during the students' respective year of participation in the

DREAMWork summer program from 2008-2011. Each pre/post measure was collected during orientation and on the last day of the summer program to allow maximum time between pre and post administrations. The *DREAMWork Daily Student Evaluation* was collected at the end of each day.

The *DREAMWork Stakeholder Evaluation Survey* was administered online (<http://surveymonkey.com>) with invitations sent out via e-mail to all faculty/staff identified as having presented curriculum content. Response rate was anticipated to be high due to the small size of the group being surveyed and their knowledge/appreciation of the research process. Fifty-four percent of the twenty-four stakeholders identified completed the survey instrument. The online survey was available during a two week period in the summer of 2012 and e-mail notifications/reminders were sent upon initiation, one week, and two days prior to the closing of the survey. The reminders were an effort to encourage participation and yield a higher response rate.

Interviews were conducted with the DREAMWork program director, the department head, and a former DREAMWork student currently enrolled in college. Prior to conducting interviews each interviewee signed an informed consent explaining the purpose of the study. Interviews with the program director and the school of nursing director took 30-40 minutes to conduct while student interviews took 15-20 minutes to conduct. The content of responses was examined for themes related to the perceived purpose and success of the DREAMWork summer program.

Prior to the administration of any instruments, informed consent was obtained from the students and from the parents for student participation in all data collection

activities during the DREAMWork summer program. Informed consent was also collected from the parents for their participation in data collection activities. As a part of the faculty/staff data collection process in the summer of 2012, informed consent was obtained online prior to the completion of the *DREAMWork Stakeholder Evaluation Survey*.

Analysis of Data

All statistical analyses were conducted using SPSS (Statistical Package for the Social Sciences) Version 20 (IBM, 2011). Each data set was examined for missing data, data entry errors, and to ensure it was properly coded and labeled. Basic frequency and descriptive analyses were conducted on all data sets. All quantitative data was analyzed by cohort. All qualitative data/responses were grouped by question and placed in individual files for the purposes of analysis.

The student measures that were only collected for the 2011 cohort were combined into a single file. Each student in this cohort selected a code name that was used on all data collection instruments. The ability to link student responses across multiple measures in this cohort allowed for correlations between these measures.

Table 3 presents an overview of each research question, the variables involved, the instruments used to measure each variable, and the data analyses used. The following section provides a more detailed account of that information.

Research Question 1: What, if any, changes are experienced by the students who participate in the DREAMWork summer program in terms of expected program outcomes (e.g., interest in nursing as a career, critical thinking, academic-related measures)?

Paired samples *t* tests were conducted for each student measure where pre and post data exists within each individual cohort. This analysis answered the question of whether the students experienced any changes as a result of participating in the DREAMWork summer program. Specifically for the 2011 cohort this analysis determined whether any changes occurred for critical thinking or reading ability.

Research Question 2: How is the summer program perceived by the major stakeholders (participants, parents, and staff/faculty)?

Descriptive and frequency statistics were conducted on all stakeholder data: *DREAMWork Student Evaluation Survey*, *DREAMWork Parent Evaluation Survey*, and *DREAMWork Stakeholder Evaluation Survey*. Any qualitative data obtained on these measures was subjected to a content analysis to determine common themes. The goal of this analysis was to determine how the DREAMWork summer program is perceived by those who were most involved with it. Additionally, content analysis was used to review all information obtained through interviews with the project director, school of nursing director and former DREAMWork students.

The purpose of the qualitative data analysis was to determine how the DREAMWork summer program is perceived by those who were most involved with it. A structured approach to content analysis was used to ensure the final conclusions drawn

from the data were meaningful and added to the understanding of the program. First, the data was organized by question and open coding was used to make notes and identify themes. The data was then organized by theme to identify patterns and potential connections. Finally, the data was interpreted to attach meaning and significance (Taylor-Powell & Renner, 2003; Elo & Kyngas, 2008; Bazely, 2009).

Chapter Summary

This chapter provided information about the research question rationale, participants, and instruments used to conduct this study. The procedure for collecting data was presented as well as detailed information about each statistical analysis. In the next chapter, results from the analyses will be presented for each research question.

Table 3. *Research Questions and Data Table*

Research Questions	Variables	Data Sources	Proposed Data Analysis
Q1: What, if any, changes are experienced by the students who participate in the DREAMWork summer program?	<ul style="list-style-type: none"> • Reading skills • Critical thinking • Desire to pursue a nursing career • Knowledge of nursing 	<ul style="list-style-type: none"> • Nelson-Denny Reading Test (NDRT) • Watson Glaser Critical Thinking Appraisal (WGCTA) • DREAMWork Student Evaluation Survey • DREAMWork Daily Student Evaluations 	<ul style="list-style-type: none"> • Descriptive statistics • Frequency analyses • Content analysis of open-ended items • Paired samples (pre/post) <i>t</i> tests where appropriate
Q2: How is the summer program perceived by the major stakeholders?	<ul style="list-style-type: none"> • Usefulness of the program content • Perceptions of the program • Concerns/suggestions for the program 	<ul style="list-style-type: none"> • DREAMWork Student Evaluation Survey • DREAMWork Daily Student Evaluations • DREAMWork Parent Evaluation Survey • DREAMWork Stakeholder Evaluation Survey • Interviews – students, project director, SON director 	<ul style="list-style-type: none"> • Descriptive statistics • Frequency analyses • Content analysis of interview responses/open-ended items

CHAPTER 4: RESULTS

The purposes of this study were to assess the effectiveness of the DREAMWork summer high school program and to describe the meaning of the program to the major stakeholders. This chapter presents the results of analyses of the qualitative and quantitative data collected through internal surveys, externally produced academic-related instruments, and interviews. The student participants in the DREAMWork summer high school program and other identified major stakeholders - parents, DREAMWork faculty/staff, DREAMWork program director, and school of nursing director - provided the population for this study.

Research Questions

Two research questions guide this study, as follows:

- (1) What, if any, changes are experienced by the students who participate in the DREAMWork summer program in terms of expected program outcomes (e.g., interest in nursing as a career, critical thinking, academic related measures)?
- (2) How is the DREAMWork summer program perceived by the major stakeholders (participants, parents, faculty/staff)?

Instrumentation

Four separate cohorts of students serve as participants in this study spanning four summers. The student participants completed a variety of instruments including the *DREAMWork Student Evaluation Survey*, the *DREAMWork Daily Student Evaluation*,

the *Nelson-Denny Reading Test*, and the *Watson Glaser Critical Thinking Appraisal*. The major stakeholders identified for this study included parents, DREAMWork faculty/staff, the DREAMWork project director, the school of nursing director, and former DREAMWork student participants. The stakeholders completed a variety of instruments including the *DREAMWork Stakeholder Evaluation Survey*, the *DREAMWork Director Interview*, the *Department of Nursing Director Interview*, the *DREAMWork Student Interview*, and the *DREAMWork Parent Evaluation Survey*. Table 1 provides a listing of all study measures and when each instrument was administered.

The *DREAMWork Daily Student Evaluation* is an instrument developed to evaluate the individual content offered to the participants. At the conclusion of each day participants were asked to respond to questions regarding the preparation of the instructor, the interest of the module, whether the content helped them become a better student, the presentation of the content, the usefulness of the content, whether the content was new information, whether the student would recommend the content for future summers, and how important the content is to the field of nursing. Each element was rated on a scale of (1) Strongly Disagree to (5) Strongly Agree. Two open-ended items were also included on this instrument for the 2009 and 2011 cohorts: (1) The best thing I learned today was and (2) If I could change one thing about today it would be.

The *DREAMWork Student Evaluation Survey* is an instrument developed to evaluate the participants' perception of various content elements addressed during the DREAMWork program as well as the program overall. Participants were asked to rate how much they know about various topics including CPR, vital signs, college admissions

requirements, financial aid, APA writing style, and several academic subjects using a scale of (1) Nothing At All to (5) A Great Deal. The instrument has changed each year with the addition and/or deletion of items. Participants in the 2010 and 2011 cohorts were asked to rate 'how likely it is that you will choose nursing as a career' using a scale of (1) Very Likely to (10) Very Unlikely. These two cohorts were also asked to rate the overall DREAMWork summer program on aspects of usefulness, interest, a good learning experience, well managed, worth my time, and stimulating their interest in nursing on a scale of (1) Not At All to (5) A Great Deal. All versions of this instrument are located in Appendix D.

The *Nelson-Denny Reading Test* (NDRT; Brown, Fishco, & Hanna, 1993) was used to assess the vocabulary, comprehension, and reading rate of the student before and after participation in the DREAMWork summer program. Vocabulary is measured by an 80 item subtest with a fifteen minute time limit. Comprehension is measured by a 38 item subtest with a twenty minute time limit. Both types of questions have five possible answer choices. Sample items from each subtest are located in Appendix G. The first minute of the comprehension section is used to determine the students' reading rate.

The *Watson-Glaser Critical Thinking Appraisal* (WGCTA; Watson & Glaser, 1980) was used to assess the critical thinking skills of the students before and after participation in the DREAMWork summer program. The instrument is comprised of five subtests (Inference, Recognition of Assumptions, Deduction, Interpretation, and Evaluation of Arguments) with a total of eighty items. Sample items are located in Appendix H.

The *DREAMWork Stakeholder Evaluation Survey* was used to assess staff/faculty perceptions of the DREAMWork summer program and the participants. Specifically, staff/faculty were asked to rate their interaction with DREAMWork students, the importance of DREAMWork summer program goals and the success of the program in achieving those goals, their experience with the DREAMWork summer program, and the benefit to participants. The *DREAMWork Stakeholder Evaluation Survey* is located in Appendix J.

Several interview protocols were employed to obtain information from the some of the major stakeholders. The *DREAMWork Program Director/School of Nursing Director Interview Protocol* and the *Former DREAMWork Student Interview Protocol* were used to assess perceptions of DREAMWork summer program goals/objectives, benefit to participants, experiences with the DREAMWork summer program, and potential changes. The *DREAMWork Program Director/School of Nursing Director Interview Protocol* and the *Former DREAMWork Student Interview Protocol* are located in Appendix K and Appendix L.

The *DREAMWork Parent Evaluation Survey* was only used for the 2009 cohort. At orientation parents were asked, 'What do you hope your child will learn in this summer camp?' and 'How important is the stipend?' At the conclusion of the DREAMWork summer program parents were asked to use a Likert scale ranging from (1) Nothing At All to (5) A Great Deal to rate the usefulness, level of interest, quality of the learning experience, program management, and ability to stimulate interest in nursing. Parents were also asked to rate the overall usefulness of the camp and whether

they would encourage their child to continue participation with the DREAMWork program during the school year.

Participants

Selection Method

Participants in this study were all students and faculty/staff who participated in the DREAMWork summer program from 2008 – 2011, parents of the students in the 2009 cohort, the DREAMWork program director, and the school of nursing director. All participation in surveys, instruments, or interviews was voluntary and signed informed consent was collected from each participant prior to any data collection.

Response Rate

High response rates were typical for all student participant data likely because measures were collected during the normal course of program activities. Response rate was not as favorable for some of the other stakeholder groups; 94% of parents from the 2009 cohort ($n = 15$), 54% of faculty/staff ($n = 13$), and 13% of identified former students currently enrolled in college ($n = 1$).

Findings

Research Question 1:

What, if any, changes are experienced by the students who participate in the DREAMWork summer program in terms of expected program outcomes (e.g., interest in nursing as a career, critical thinking, academic-related measures)?

The purpose of this question was to determine whether students in each cohort experienced any changes as a result of participating in the DREAMWork summer program. To address this question paired samples *t* tests were conducted for each student measure where pre and post data exists within each individual cohort. Table 4 presents all means and paired samples *t* test results for all versions of the *DREAMWork Student Evaluation Survey* across all cohorts with indicators for significant differences between the pre and post administration.

DREAMWork Student Evaluation Survey. The 2008 version of the *DREAMWork Student Evaluation Survey* consisted of thirteen items assessing students' knowledge of nursing/academic topics, perceived preparation to participate in nursing/academic activities, and perceived comfort with nursing/academic topics/activities. Ten of the thirteen items (80%) received significantly higher mean ratings at post administration.

The 2009 and 2010 versions of the *DREAMWork Student Evaluation Survey* each consisted of the same nineteen items assessing student interest in a nursing career, the importance of various topics to nursing success, and knowledge about various nursing-related topics. For the 2009 cohort, fourteen of the nineteen items (74%) received significantly higher mean ratings at post administration. For the 2010 cohort, thirteen of the nineteen (68%) items received significantly higher mean ratings at post administration.

The 2011 version of the *DREAMWork Student Evaluation Survey* consisted of forty-three items; all the items from the 2008 version, all the items from the 2009/2010 versions, and three additional items rating overall enjoyment of the summer program, the

classroom experience, and the hospital experience. The 2011 version of the *DREAMWork Student Evaluation Survey* was only administered as a post test at the end of the summer program.

There appear to be similarities in the topic/knowledge areas that have significant changes between pre and post test across cohorts. The main question of interest – *How likely is it that you will choose nursing as a career?* – did not show a statistically significant increase from pre to post questioning. Potential reasons for the lack of significance will be explored in the discussion.

2011 Specific Measures. Four pre/post administered measures were collected for the students who participated in 2011. These instruments were selected to assess academic-related abilities and whether they were impacted by the DREAMWork summer program. Table 5 presents all means and paired samples *t* test results for the *Nelson-Denny Reading Test* and the *Watson Glaser Critical Thinking Appraisal* with indicators for significant differences between the pre and post administration.

The paired samples *t* tests for the 2011 specific instruments revealed several significant results. While the overall mean score on the *Nelson-Denny Reading Test* did not significantly improve from pre to post administration, the comprehension subtest score and the overall reading rate did show significant improvement. This significant result along with the lack of significant results on the other measures will be fully explored in the discussion section.

Table 4. Means and Paired Samples *t* tests for the DREAMWork Student Evaluation Survey

Items	2008 (n=21)			2009 (n=15)			2010 (n=22)			2011 (n=27)	
	Pre	Post	<i>p</i>	Pre	Post	<i>p</i>	Pre	Post	<i>p</i>	Pre	Post
How knowledgeable are you about the role of nursing within society?	3.67	4.52	.000							X	4.35
How prepared do you feel about writing an APA style term paper?	2.90	3.43	ns							X	3.04
How comfortable do you feel using the library for research?	4.05	4.33	ns							X	4.08
How knowledgeable do you feel about the history of nursing?	2.48	3.86	.000							X	3.46
How comfortable do you feel about finding your way around campus?	4.48	4.67	ns							X	4.65
How knowledgeable are you about your basic math skills & dosage calculations?	3.71	4.29	.004							X	3.96
How knowledgeable are you about microbiology?	1.90	3.19	.001							X	3.00
How knowledgeable are you about anatomy & physiology?	2.57	3.62	.000							X	3.35
How prepared do you feel about writing an effective English paper?	3.57	4.14	.007							X	3.65
How comfortable do you feel using the UTC Blackboard system?	4.05	4.81	.014							X	3.23
How comfortable do you feel in a 'hands-on' nursing environment within society?	3.90	4.43	.024							X	4.50

How prepared do you feel in providing culturally competent care in a culturally diverse environment?	3.81	4.57	.006						X	4.12	
How prepared do you feel to begin the Fall semester?	4.19	4.76	.024						X	4.25	
How likely is it that you will choose nursing as a career? (1-10)				2.71	4.00	ns	3.40	4.55	ns	X	5.65
Indicate how important <i>mathematics</i> is for success in nursing				4.27	5.00	.006	4.18	4.81	.019	X	4.77
Indicate how important <i>English</i> is for success in nursing				4.40	4.87	.048	4.18	4.50	.050	X	4.42
Indicate how important <i>Public Speaking</i> is for success in nursing				3.87	4.33	ns	4.23	4.55	ns	X	4.31
Indicate how important <i>Critical Thinking</i> is for success in nursing				4.40	4.93	.041	4.55	4.91	ns	X	4.85
Indicate how important <i>Respect for Others</i> is for success in nursing				4.93	5.00	ns	4.82	5.00	ns	X	4.92
Indicate how important <i>Understanding Cultural Differences</i> is for success in nursing				4.87	4.73	ns	4.64	4.92	ns	X	4.77
Indicate how important <i>Using the Library</i> is for success in nursing				4.00	4.80	.001	3.73	4.32	.034	X	3.92
Indicate how important <i>Using the Internet</i> is for success in nursing				4.00	4.80	.017	4.09	4.64	.004	X	4.38
Indicate how important <i>Science</i> is for success in nursing				5.00	5.00	ns	4.77	5.00	ns	X	4.85
How much do you know about <i>CPR</i> ?				3.07	5.00	.000	3.64	4.73	.000	X	4.88

How much do you know about <i>Qualifications to be a Nurse?</i>	2.93	4.93	.000	3.23	4.41	.000	X	4.54
How much do you know about <i>What a Nurse Does Day to Day?</i>	2.93	4.80	.000	3.14	4.55	.000	X	4.58
How much do you know about <i>Using APA Style for Writing?</i>	2.00	4.20	.001	2.41	4.23	.000	X	3.58
How much do you know about <i>How to Take Vital Signs?</i>	2.00	4.93	.000	2.50	4.73	.000	X	4.42
How much do you know about <i>What is Covered by HIPAA?</i>	1.73	4.93	.000	3.18	4.23	.001	X	4.35
How much do you know about <i>How to Apply for Financial Aid?</i>	2.93	5.00	.000	2.95	4.05	.000	X	4.46
How much do you know about <i>Requirements to be Admitted to College?</i>	4.20	4.93	.003	4.00	4.59	.012	X	4.73
How much do you know about <i>Requirements for the School of Nursing?</i>	2.73	4.93	.000	3.09	4.64	.000	X	4.46
How much did you enjoy the summer program? (1-10)							X	8.31
How much did you enjoy the classroom experience? (1-10)							X	6.69
How much did you enjoy the hospital experience? (1-10)							X	8.62

Note. Italicized values indicate significant pre/post paired samples *t* test. Effect sizes can be found in Appendix K.

Table 5. Means and Paired Samples *t* tests for the 2011 Cohort Measures

Measure	Pre	Post	<i>p</i>	Cohen's <i>d</i>
<i>Nelson-Denny Reading Test (n=25)</i>	80.16	83.96	ns	.16
<i>Vocabulary</i>	38.24	37.64	ns	.05
<i>Comprehension</i>	41.92	46.32	.014	.34
<i>Reading Rate</i>	197.00	226.13	.000	1.29
<i>Watson Glaser Critical Thinking Appraisal (n=24)</i>	44.17	42.88	ns	.17

Note. Italicized values indicate significant pre/post paired samples *t* test.

Research Question 2:

How is the DREAMWork summer program perceived by the major stakeholders (participants, parents, staff/faculty)?

The aim of the analysis for this question was to gain an understanding of the DREAMWork summer program as viewed by the major stakeholders. Multiple pieces of data from several instruments were used to fully explore this question.

DREAMWork Daily Student Evaluations. First, the *DREAMWork Daily Student Evaluations* were examined for each cohort to determine student perceptions of the day to day curriculum and flow of the DREAMWork summer program. A composite variable was created using the students' ratings of their interest in the content, the usefulness of the content, and whether they would recommend the content for future cohorts. This resulted in a summed variable with a minimum possible score of (3) Strongly Disagree and a maximum possible score of (15) Strongly Agree. Table 6 shows these composite daily ratings across cohorts.

Daily composite ratings on the *DREAMWork Daily Student Evaluation* were high across all cohorts. The lowest mean rating was given by the 2011 cohort to the topics of *Dosage Calculations* ($M = 13.19$) and *Library Experience/Blackboard Training* ($M = 13.19$) and the highest mean rating was given by the 2008 cohort to the topic of *Cultural Sensitivity & Ethics* ($M = 15.00$).

Open ended comments on the *DREAMWork Daily Student Evaluation* were analyzed for the 2009 and 2011 cohorts. At the end of each day participants were asked to respond to two open ended items: (1) *The best thing I learned today was* and (2) *If I could change one thing about today it would be*. All responses were organized by day within cohort and reviewed to identify common themes.

For the first open ended item (*The best thing I learned today was*) several themes were identified including: *New Knowledge*, *Experience*, and *Fun*. *New Knowledge* was exemplified by comments such as: “How to do CPR,” “How to check vital signs,” and “How the cath lab works.” Examples of the *Experience* include “yoga,” “how to give a shot,” and “feeding newborns.” *Fun* was coded for comments such as “Pin Strikes was fun!” in response to a bowling outing.

There were sixteen participants in the 2009 cohort and eight meeting days during the summer program which resulted in 128 total possible responses to this open ended item. There were 126 total participant responses resulting in a response rate of 98.4% for this item. All of the responses for this cohort were categorized as either *New Knowledge* or *Experience* (or both). *New Knowledge* represented the theme of 79.4% of the responses while *Experience* represented the theme of 24% of the responses.

There were twenty-seven participants in the 2011 cohort and seventeen meeting days during the summer program which resulted in 476 total possible responses to this open ended item. There were 207 total participant responses resulting in a response rate of 43% for this item. All of the responses for this cohort were categorized as either *New Knowledge*, *Experience*, or *Fun* (or a combination thereof). *New Knowledge* represented the theme of 86% of the responses while *Experience* represented 39% of the responses. *Fun* only accounted for 1.4% of the responses to this item.

For the second open ended item (*If I could change one thing about today it would be*) several themes were identified including: *Environmental*, *Organizational*, *Length of Presentation*, and *Nothing*. The *Environmental* theme was exemplified in comments such as “the weather” and “people talking during class.” Comments about *Organization* included “more organized,” “the late start,” and “everything to go as planned.” *Length* was present in comments such as “Length of anatomy class,” “The long lectures,” and “More time at the hospital.” *Nothing* was included as a theme because it was a commonly occurring response and needed to be set apart from no response being given. Taking the time and effort to write ‘nothing’ instead of leaving the space blank may be seen as an affirmative that nothing should be changed instead of assuming that a blank space indicates nothing should be changed.

There were sixteen participants in the 2009 cohort and eight meeting days during the summer program which resulted in 128 total possible responses to this open ended item. There were 103 total participant responses resulting in a response rate of 80.5% for this item. *Nothing* represented 65% of the total responses to this item. *Environmental*

themes represented 15% of the responses while *Organizational* themes represented 5% of the responses and *Length* themes represented 4% of the responses.

There were twenty-seven participants in the 2011 cohort and seventeen meeting days during the summer program which resulted in 476 total possible responses to this open ended item. There were 193 total participant responses resulting in a response rate of 40.5% for this item. *Nothing* represented 49% of the total responses to this item. *Environmental* themes represented 16.6% of the responses while *Organizational* themes represented 19.2% of the responses and *Length* themes represented 7.3% of the responses.

DREAMWork Stakeholder Evaluation Survey. Next, the *DREAMWork Stakeholder Evaluation Surveys* were examined to evaluate faculty/staff perceptions of the DREAMWork summer program as a whole and the impact of the program on the student participants. The items for this instrument are located in Appendix J. Twenty-four faculty/staff were identified as participants for this portion of data collection but only thirteen surveys were completed for a response rate of 54%. It is unknown whether the 46% of stakeholders who did not respond had positive or negative experiences with the DREAMWork program.

The average respondent had been involved with the DREAMWork summer program almost three years; 30.8% for two years, 46.2% for three years, and 23.1% for four years. All of the respondents had been involved with the DREAMWork summer program for at least two years. Despite the varied number of years of participation, 53.8% reported interacting with students more than twenty-five hours. Table 7 presents

the descriptive statistics for the items on this instrument. All items received a mean rating higher than four indicating above average ratings and positive feedback from the faculty/staff.

Table 6. *Mean Composite Daily Ratings of Curriculum Content by Cohort*

Curriculum Content	2008 <i>(14days)</i>	2009 <i>(8days)</i>	2010 <i>(10days)</i>	2011 <i>(17 days)</i>
CPR		14.06 <i>(n=16)</i>	14.09 <i>(n=22)</i>	13.68 <i>(n=25)</i>
Vital Signs	14.78 <i>(n=23)</i>	14.63 <i>(n=16)</i>	14.36 <i>(n=22)</i>	14.23 <i>(n=26)</i>
Medical Terminology	14.63 <i>(n=16)</i>	14.63 <i>(n=16)</i>	14.73 <i>(n=22)</i>	13.85 <i>(n=27)</i>
Simulation Lab/ SIMMAN Experience	14.91 <i>(n=23)</i>	14.44 <i>(n=16)</i>	14.73 <i>(n=22)</i>	14.25 <i>(n=24)</i>
Hospital Tour	14.35 <i>(n=23)</i>	14.44 <i>(n=16)</i>	13.86 <i>(n=22)</i>	14.46 <i>(n=14)</i>
Anatomy & Physiology	14.83 <i>(n=24)</i>	13.93 <i>(n=15)</i>	14.36 <i>(n=22)</i>	14.18 <i>(n=25)</i>
Math Skills	13.96 <i>(n=24)</i>	14.50 <i>(n=16)</i>	14.05 <i>(n=22)</i>	13.90 <i>(n=24)</i>
Dosage Calculations	13.96 <i>(n=24)</i>	13.93 <i>(n=15)</i>	14.73 <i>(n=22)</i>	13.19 <i>(n=24)</i>
English/Writing Lab/Assignment/Literature Review	14.14 <i>(n=22)</i>		14.19 <i>(n=21)</i>	13.85 <i>(n=27)</i>
Myths & Facts About Nursing Careers		14.63 <i>(n=16)</i>		
Scavenger Hunt			13.86 <i>(n=22)</i>	13.62 <i>(n=17)</i>
Undergraduate Nursing Admissions Requirements		14.06 <i>(n=16)</i>	14.09 <i>(n=22)</i>	
Job Shadowing		14.50 <i>(n=16)</i>	14.05 <i>(n=22)</i>	14.10 <i>(n=20)</i>
Financial Aid & Admissions		13.73 <i>(n=15)</i>	14.09 <i>(n=22)</i>	14.50 <i>(n=22)</i>
College Survival Skills	14.63 <i>(n=24)</i>	13.62 <i>(n=16)</i>		14.80 <i>(n=25)</i>

Library Experience/Blackboard Training	13.96 (n=24)		13.19 (n=24)
Culture Sensitivity & Ethics	15.00 (n=24)		14.55 (n=22)
Skills Lab/Basic Nursing Skills	14.65 (n=23)	13.67 (n=15)	14.64 (n=25)
Drug Education – Effects of Drugs on the Body			13.82 (n=22) 13.85 (n=27)
Nutrition for Academic Success/Physical Activity			13.82 (n=22)
Time & Stress Management			13.82 (n=22)
Resume Building/Interview Skills/Professionalism			14.36 (n=22) 13.77 (n=24)
Grady Hospital – Advancements in Acute Care Nursing			14.86 (n=21) 13.81 (n=26)
History of Nursing	14.57 (n=23)		
CDC – Disease Investigation	14.35 (n=23)		14.86 (n=21)
Study Skills			14.18 (n=25)
Bodies Exhibit			14.68 (n=25)
EKG Lab			13.90 (n=24)
Pharmacology			14.80 (n=25)
PPE & Infection Control			14.50 (n=22)
Pathophysiology			14.64 (n=25)

Table 7. *Descriptive Statistics for the DREAMWork Stakeholder Evaluation Survey*

Items	Mean	SD
Please rate your interaction with the students in the DREAMWork high school summer program.	4.15	.689
Please rate the importance of exposing high school students to nursing through didactic instruction on topics necessary to becoming a nurse.	4.50	.798
Please rate the importance of exposing high school students to nursing through ‘hands on’ activities parallel to those a nurse would encounter on a daily basis.	4.67	.778
Please rate the importance of providing general college preparation information designed to encourage high school students to pursue higher education.	4.83	.577
Please rate the success of the DREAMWork high school summer program in exposing high school students to nursing through didactic instruction on topics necessary to becoming a nurse.	4.00	.775
Please rate the success of the DREAMWork high school summer program in exposing high school students to nursing through ‘hands on’ activities parallel to those a nurse would encounter on a daily basis.	4.09	.831
Please rate the success of the DREAMWork high school summer program in providing general college preparation information designed to encourage high school students to pursue higher education.	4.42	.669
Overall, my experience with the DREAMWork high school summer program was positive.	4.42	.669
Overall, the DREAMWork high school summer program is successful.	4.17	.835
Overall, the DREAMWork high school summer program is beneficial to students.	4.58	.669

Participants were also asked explicitly whether they had ‘seen any signs that the DREAMWork high school summer program has an impact on students.’ Eleven of the thirteen participants responded to this item for a response rate of 85%. All respondents agreed they had seen signs that the DREAMWork summer program had impacted student participants and ten provided prompted elaboration to their response. Sixty percent of the responses were focused on students’ awareness of and preparation for college success. One faculty/staff member stated:

The students seem to be more serious about college and completion of college (DREAMWork faculty/staff, personal communication, August 2012).

Other faculty/staff members (40%) mentioned pursuit of college and/or a nursing degree; an example follows:

The DREAMWork summer program has impacted several students in the program. Some of these students have entered college and are majoring in Nursing (DREAMWork faculty/staff, personal communication, August 2012).

Skill improvement was also mentioned in several comments by faculty/staff in response (20%) to the type of impact the DREAMWork summer program had on student participants; an example follows:

I am involved with the professional interviewing skills portion of the program and I have seen first-hand examples of students applying the skills taught during the mock-interview event. It is exciting to see young students grow comfortable with answering tough questions and presenting themselves professionally in an

interview setting (DREAMWork faculty/staff, personal communication, August 2012).

DREAMWork Student Evaluation Survey. The 2009, 2010 and 2011 versions of this survey included a series of post only items assessing participant perceptions of the program on the following dimensions: useful, interesting, a good learning experience, well managed, worth my time, and stimulating my interest in nursing. All mean ratings across all three cohorts were higher than 4.48 (many were 5.00 – the highest rating possible) with the exception of the ‘well managed’ dimension for the 2011 cohort (3.36). Table 8 shows the means and standard deviations across cohorts for the *DREAMWork Student Evaluation Survey*.

Students were also asked if they would recommend the program to a friend who was interested in nursing and whether the program length should be reduced, extended, or stay the same. All respondents said ‘yes’ they would recommend the DREAMWork summer program to a friend who was interested in nursing. Respondents across all three years thought the summer program should be the same length or longer.

Open ended items were also included on the 2009 and 2011 versions of the *DREAMWork Student Evaluation Survey*. Students were asked to name their favorite part of camp. The overwhelmingly favorite response was the hospital experience and job shadowing experience; 75% of 2009 cohort and 88% of 2011 cohort. Field trips were named next by the 2011 cohort (36%) while meeting people was named next in the 2009 cohort (27%). Simulation experience was also popular in both cohorts; 27% of 2009 cohort and 16% of 2011 cohort.

In addition to being the favorite part of camp both cohorts wished there had been more hospital experience and job shadowing; 46% of 2009 cohort and 73% of 2011 cohort. When asked to list three things that would make camp better, the most popular response was environmental factors (food, weather, etc.) for the 2009 cohort (53%) and organizational factors (diversity, choice of opportunities, etc.) for the 2011 cohort (70%). Finally, students were asked, 'If you could change one thing about the camp what would it be?' Environmental factors were most in need of change for the 2009 cohort (42%) while organizational factors were most in need of change for the 2011 cohort (52%).

DREAMWork Parent Evaluation Survey. This instrument was collected for the parents of the 2009 cohort. There were twelve parent respondents at orientation (75%) and thirteen parent respondents at the conclusion of the summer program (81%). At orientation parents responded to the questions, 'What do you hope your child will learn in this summer camp?' and 'How important is the stipend?' Parents were most hopeful their children would learn general nursing skills (83%), be exposed to realistic expectations associated with college and/or a career in nursing (42%), and gain insight into deciding whether they wanted to pursue a career in nursing (25%). Parents rated the importance of the stipend on a scale of (1) *Not at all* to (5) *A great deal*. The mean stipend rating was 3.6 indicating the stipend had an above average impact on student participation during this cohort.

At the end of the summer program for the 2009 cohort, parents were asked 'What do you think your child learned in this summer camp?' and to provide 'any feedback that you think will help us improve the camp next year.' Parent responses were very positive

concerning their child's experience during the summer program. With regards to what their child learned, the majority of parents (62%) mentioned *general nursing skills*, an example follows:

She learned how to perform CPR. I was really proud and so was she. She also learned how to do blood pressure and read vital signs. The camp was great (parent-2009 cohort, personal communications, June 2009).

Another parent response about what her child learned focused on *student expectations* (23%) and *excitement* (31%) in regards to nursing, an example follows:

This really made my daughter a lot more interested in camp. She was really undecided if that is what she wanted to do but this really helped her make up her mind. Thanks for offering this program. I couldn't think of a better way for my child to spend her time (parent-2009 cohort, personal communications, June 2009).

The majority of other comments provided by parents mentioned how good the program was for the students. Other themes included continuing the summer program for future summers and extending the length of the program.

Interviews. The final piece of data collected in response to the second research question was interviews with the project director ($n = 1$), the school of nursing (SON) director ($n = 1$), and a former DREAMWork summer program participant who is now an undergraduate student ($n = 1$). Separate interviews were scheduled with the program director and the SON director to discuss the goals/objectives of the DREAMWork summer program and the impact on student participants. Nine former DREAMWork

summer program students who are currently enrolled in college were identified and contacted via e-mail numerous times over a three week period in an attempt to schedule an interview. Unfortunately only one student responded to the interview request. Interview protocols are located in Appendices K and L.

The *DREAMWork program director interview* took approximately thirty minutes to complete. She was eager to discuss the DREAMWork program; the success of the program, the impact of the program on the participants, and what she would do differently. When asked about the goals and objectives of the summer program, she had the following to say:

Through the summer program I was hoping students would leave here with a better understanding of what the academic expectations are for obtaining a BSN degree. Another goal was that I was hoping the students would have a more realistic understanding of the roles nurses play in healthcare. And lastly I was hoping that students, those that had another year of high school, would be more academically prepared to be successful in their high school because as a summer program we provide so many academic enrichment opportunities that students, if they truly took advantage of those opportunities, it would help them be successful in high school or their first year of college (DREAMWork program director, personal communication, August 2012).

When asked how she would rate the DREAMWork summer program on achieving the aforementioned goals/objectives she was very positive. She emphatically stated that academic expectations and nursing role expectations had been met. However,

she felt that academic readiness, on the part of the students, is a factor that is student dependent and could potentially be addressed through raising the GPA for program eligibility. The current GPA requirement for entry into the DREAMWork summer program is 2.75 (DREAMWork program director, personal communication, August 2012).

The DREAMWork program director was eager to discuss the various ways the summer program addressed the specific goals/objectives in terms of curriculum content. The first goal of academic readiness was addressed by employing university faculty to teach academic courses, specifically those that students traditionally struggle with in BSN programs – English (writing), Science (chemistry and anatomy & physiology), and Math. The university recruitment coordinator spoke with students regarding academic expectations for entry into the university. More specifically, students were introduced to the online application process and the additional requirements for entry into to the school of nursing. Finally, nursing roles were introduced to the students through extensive job shadowing experiences. The students were exposed to the operating room, the emergency room, intensive care units, long-term nursing facilities, and wound care units (DREAMWork program director, personal communication, August 2012).

When asked about the benefit of the DREAMWork summer program to the student participants, the program director immediately mentioned the number of previous students who are currently enrolled in undergraduate programs. Of the 89 participants over the four years of the program, twenty-one are currently enrolled in undergraduate programs representing 24% of all participants. She also noted that several students had

been valedictorians in their high school and scholarship recipients (DREAMWork program director, personal communication, August 2012).

Finally, the program director was asked, ‘What changes would you make to the DREAMWork high school summer program if you were able to start over?’ She had the following to say:

I would do it where students could get college credit for some of the academic courses they have done. We put so much time and energy and we put so much effort into it that I think that would be good for students. I would require it to be a true on campus experience. And then the other thing is that I would raise the GPA...I would raise it to 3.0 (DREAMWork program director, personal communication, August 2012).

The *School of Nursing director interview* took approximately thirty minutes to conduct and provided a slightly different perspective than the DREAMWork program director interview. When asked about the goals and objectives of the DREAMWork summer program her response seemed more focused on overall student growth and experience as evidenced by the following comments:

Basically the literature shows you that you have to get started early getting folks interested in nursing and understanding what nursing is. It might not be all that they think it is. Oftentimes they don’t understand that they have to have a good science background in high school; that they have to study in high school so they have a good foundation to come to a university and continue that path. You know we stress that it’s a numbers game; nursing is so competitive that you have to start

off right. We also talk about other things, not just the mechanics of things that will help them get in but also give them the opportunity to see how exciting nursing can be with all the things you can do and shadow a nurse and have the opportunity to learn some of the low level skills like blood pressure, have them do simulation and see what that's all about. And even if they're not going into nursing to show that if there's something you really want to succeed at doing that you have to go for it that you can't just play around (school of nursing director, personal communication, August 2012).

When asked about the success of the summer program in achieving its goals she said it has been remarkable. She discussed the growth of the program over the years and the development of the program director and other staff in achieving the goals/objectives of the summer program. Additionally, in response to specific activities that assisted in achieving the goals, she said:

I don't know if I can say which activity but it's sort of the whole Gestalt of the thing; getting them engaged. You know you can't say one activity but it's the whole contextual plan, the activities, that they understand from an academic side, that nursing can be fun, that there are opportunities, that it's a service to mankind and that you can make a difference. I wouldn't say that there's one activity (school of nursing director, personal communication, August 2012).

The school of nursing program director had different ideas about what should be done differently in the DREAMWork summer program if it could be started over. Longitudinal tracking of the participants was the first thing she mentioned to assess long

term benefits of the program and determine what specific undergraduate majors they chose to enter and whether they were successful in college. Another suggestion was to expose participants to undergraduate nursing students to give them a realistic preview of what to expect while in college – attending a class, experiencing clinicals and talking with the students. She believed they should be aware of the camaraderie among students in a nursing program (school of nursing director, personal communication, August 2012).

The *former DREAMWork student participant interview* took approximately twenty minutes to complete but was rich with information and positive feedback. The student is currently a freshman at the university and has declared pre-med as a major. She participated in the DREAMWork summer program at the suggestion of one of her high school teachers and because she had an interest in entering the medical field (former DREAMWork student, personal communication, August 2012).

When asked what she learned from the summer program, she had the following to say:

I know I've never really had a problem with sights or seeing anything gross but figured out that smell is a really big thing for me. I didn't know that about myself, I didn't realize smells would make me sick. That was something I found really, really important (former DREAMWork student, personal communication, August 2012).

This statement presents a very practical, and probably unintentional, learning experience from this student that could be a major factor in determining what type of

career she chooses to pursue. She was also asked about her favorite part of the summer program and offered the following:

Honestly I probably liked the classes the most. I'm sure not everyone else really did but I liked the actual information that we learned because I geek over that stuff. I mean, of course the nursing and going and job shadowing was fun too but I just happened to enjoy the classes better. I just like understanding, for example one of the classes I found interesting was the pharmaceutical one [class] because that was a lot of stuff I didn't know. That officially gave me a lot of information, now when I go to the store I know what I'm looking at so I mean, that's really nice. I like learning how things work (former DREAMWork student, personal communication, August 2012).

She had a clear understanding of the goals/objectives of the summer program, specifically mentioning student education, what it takes to become a nurse, and the roles that nurses play in the workplace. She also thought the program is successful in achieving these goals. When asked whether other students should participate in the summer program she answered with an emphatic, 'Absolutely!' Although the program did not influence her decision to attend college (she was already planning on it) she said it did make her consider whether to enter the school of nursing or declare pre-med as her major (former DREAMWork student, personal communication, August 2012).

When asked if she had any suggestions for improving the DREAMWork summer program she had the following to say:

It was already like a really good program to begin with. I mean it was really awesome. They provided lunch for us and they really did prepare me for college because we really didn't have anyone with us all the time which is like college. Try not to put students with the floor nurse. I mean have them maybe shadow the floor nurse for a few minutes so they realize if you end up being a nurse you might have to cover the floor and that's gonna be a boring day for you but I wouldn't leave them there the whole time because we were there maybe two hours and it was kinda boring.

In this statement, the student seems pleased with the summer program overall, especially the way the students were allowed to move about campus on their own. This statement also provides important information into the type of shadowing activities that might be best for the students involved in the summer program.

Overall, the interviews present a positive view of the DREAMWork summer program while providing insight into several specific elements on which to improve. The way the interview comments compliment the quantitative data will be explored further in the discussion section.

Chapter Summary

Research Question 1

The first research question sought to determine whether the student participants in the DREAMWork summer program experience any changes as a result of their participation. Through the evaluation of data from the *DREAMWork Student Evaluation*

Survey administered to all cohorts as well as data from instruments specific to the 2011 cohort (*Nelson Denny Reading Test* and *Watson Glaser Critical Thinking Appraisal*), it was determined that students did experience some changes.

Data shows significant improvement in knowledge and in student perceptions of the importance of academic content related to nursing as evidenced by the *DREAMWork Student Evaluation Survey*. Students reported perceived knowledge gains in topics such as CPR, vital signs, college admissions requirements, financial aid, and qualifications to become a nurse. At the conclusion of the summer program students were more likely to associate academic content such as English, math, and critical thinking as important to the role of nursing. In the 2011 cohort, student showed significant improvement in reading comprehension and reading rate as evidenced by the *Nelson-Denny Reading Test*.

Research Question 2

The second research question was answered using a combination of quantitative and qualitative data sources. The focus of this question was on stakeholder perceptions of the DREAMWork program. Data shows overwhelmingly positive perceptions of the DREAMWork summer program by all stakeholder groups – participants, parents, and faculty/staff.

Mean ratings on a composite variable (interest + usefulness + recommendation) for the *DREAMWork Daily Student Evaluations* were high across all days/topics indicating participant satisfaction with the program content. Data from the *DREAMWork Daily Student Evaluations* show participants thought the best part of the summer program

was the *new knowledge* they gained and the *experiences* they had through job shadowing, simulation, and skills labs. When asked daily what could be changed the majority of students responded with *nothing* indicating satisfaction with the daily content.

Parent perceptions were measured for the 2009 cohort using the *DREAMWork Parent Evaluation Survey*. When asked for feedback about their experience with the summer program, almost all parents responded with comments about the quality of the program and their satisfaction with the experience their child had as a participant.

DREAMWork faculty/staff were asked to retrospectively evaluate their experience with the DREAMWork summer program using the *DREAMWork Stakeholder Evaluation Survey*. Faculty/staff rated all facets of the summer program as above average; the importance of program goals, success with meeting program goals, and overall ratings of their experience with the program. All respondents also indicated they had seen signs that the DREAMWork summer program was having a positive impact on the student participants.

Overall, the response to both of the research questions guiding this study is positive; students did experience some significant changes by participating in the DREAMWork summer program and perceptions of the DREAMWork summer program were positive by all major stakeholders. In addition to the positive, these data also provide insights into potential changes that should be made to the DREAMWork summer program including environmental and organizational aspects which will be explored in the following chapter.

Table 8. Means for Overall Program Ratings on Post-DREAMWork Student Evaluation Survey

Item	2009		2010		2011	
	N	Mean (SD)	N	Mean (SD)	N	Mean (SD)
I would rate the program as:						
<i>Useful</i>	15	5.00 (.00)	20	5.00 (.00)	25	4.84 (.37)
<i>Interesting</i>	15	4.93 (.26)	20	4.95 (.22)	25	4.76 (.60)
<i>A Good Learning Experience</i>	15	5.00 (.00)	20	5.00 (.00)	25	4.96 (.20)
<i>Well Managed</i>	15	4.93 (.26)	20	4.85 (.37)	25	3.36 (.91)
<i>Worth My Time</i>	15	5.00 (.00)	20	5.00 (.00)	25	4.48 (.65)
<i>Stimulating My Interest in Nursing</i>	15	4.93 (.26)	20	4.90 (.31)	25	4.60 (.71)

CHAPTER 5: DISCUSSION

Conclusions were provided at the end of Chapter 4. The purpose of Chapter 5 is to discuss the results for each research question; implications for the DREAMWork summer program, implications for future research, and the limitations of the results of the current study.

Discussion

Research Question 1

What, if any, changes are experienced by the students who participate in the DREAMWork summer program in terms of expected program outcomes? (e.g., interest in nursing as a career, critical thinking, academic related measures)?

Cohen, et. al. (2004) discusses student perceptions of a career in nursing being related to a lack of academic rigor. This perception may lead to diminished student preparation or perceived lack of importance of academic preparation for a career in nursing. This faulty belief could result in students with a genuine interest in pursuing a nursing career but are unable to do so because they do not meet academic admissions requirements for nursing programs.

The *DREAMWork Student Evaluation Survey* measured student perceptions of knowledge and importance of various academic topics to a career in nursing. Pre versus post data from the 2008, 2009, and 2010 cohorts showed significant perceived knowledge gains for almost all of the academic and nursing related content presented during the summer program. Pre versus post data from the 2009 and 2010 cohorts showed

significant increases in perceptions of importance of academic related content for success in nursing. These results show an increase in student perception of knowledge and perception of academic rigor necessary to pursue nursing as a career.

Improved awareness and knowledge in this area could assist in alleviating the educational deficits that create difficulty for BSN programs to recruit and retain minority/disadvantaged students (Barton & Swider, 2009). Additionally, this awareness could save students potential time and money wasted in pursuing a career that does not match their abilities and/or skills.

Students were also asked to respond to the question, 'How likely is it that you will choose nursing as a career?' on a scale of (1) very likely to (10) very unlikely. The responses to this question were surprising. For the 2009 and 2010 cohorts there was a decrease (though not significant) in students' likelihood of choosing nursing as a career from the pre to post administration of the *DREAMWork Student Evaluation Survey*. In line with these results was the mean post rating for the 2011 cohort indicating low likelihood of choosing nursing as a career.

The fact that students' decision to pursue a career in nursing is lower at the end of the program as opposed to the beginning is counter to the program objectives. However, it may not be an indicator of a problem. A requirement of program participation is student interest in nursing as a career but this interest may not be based on any experience or first-hand knowledge on the part of the student.

By participating in the DREAMWork summer program students have been exposed to the academic rigor present in undergraduate nursing programs, admission

requirements to enter such programs, and the day to day activities associated with being a nurse. As mentioned in Chapter 1, Hom et al. (1998) found that only 8.5% of nurses given realistic job previews voluntarily quit in contrast to 17.8% of nurses not given realistic job previews. The DREAMWork summer program as a whole may serve as a realistic preview for pursuing a career in nursing such that some participants decide after participating in the program that nursing is not an appropriate career choice. This is a surprising and definitely unintended consequence of the program. However, it could be argued that helping students who are not ‘cut out’ for a career in nursing choose to pursue a different path is just as important as helping students who are ‘cut out’ for a career in nursing choose to continue along that path.

Another potential complication with the *DREAMWork Student Evaluation Survey* is a possible measurement issue with the item, ‘How likely is it that you will choose nursing as a career?’ Not only is this item one of the few with a 1-10 response scale but it is the only item on which a higher value indicates less agreement. Future administrations of this instrument should change this item to a scale of (1) very unlikely to (10) very unlikely to flow better with the rest of the instrument. Power, as assessed by the Cohen’s *d* coefficient, was low for this item for both the 2010 and 2011 cohorts indicating a low ability to detect a significant difference if one actually exists.

Additional academic related measures were added for the 2011 cohort. The only positive significant results from these measures was on the *Nelson Denny Reading Test*; the comprehension subtest and the reading rate both improved significantly from pre to post test administration. The 2011 cohort had the most meeting days of all the cohorts

and assigned articles to read and discuss throughout the program (DREAMWork program director, personal communication, August 2012) which most likely contributed to this significant finding.

Grade equivalent scores on the overall raw scores for the *Nelson Denny Reading Test* ranged from 10.4 (pretest) to 10.8 (post test). This is important to note in light of previous research in employment settings that shows those with grade equivalent scores less than 11 experience academic difficulties with respect to job training (Brown, et al., 1993). This critical grade equivalent score may be a necessary benchmark by which future success and academic readiness of DREAMWork participants would be measured.

Research Question 2

How is the DREAMWork summer program perceived by the major stakeholders (participants, parents, staff/faculty)?

Students. Students used the *DREAMWork Daily Student Evaluation* form to rate the daily content of the summer program on various dimensions. Three of these dimensions – interest in content, usefulness of content, and recommend for future cohorts – were summed to create a composite rating variable with possible values ranging from (3) very low agreement to (15) very high agreement. Across all cohorts the average composite rating scores were very high with scores ranging from 13.19 (2011-*Library Experience/Blackboard Training*) to 15.00 (2008-*Cultural Sensitivity & Ethics*). When the 2009 and 2011 cohorts were asked ‘If I could change one thing about today it would

be,' the majority, 65% for 2009 and 49% for 2011, responded that 'nothing' should be changed indicating satisfaction with the activities/content for the day.

Post student ratings on the *DREAMWork Student Evaluation Survey* were also overwhelmingly positive. The 2009, 2010, and 2011 cohorts rated their overall experience with the DREAMWork summer program on the following dimensions: *useful, interesting, a good learning experience, well managed, worth my time* and *stimulating my interest in nursing*. All ratings were very high (greater than 4.48) with the exception of the *well managed* dimension for the 2011 cohort that had a mean rating of 3.36. This discrepancy will be address in more detail later in this chapter. Overall, these ratings show high levels of satisfaction with all dimensions of the DREAMWork summer program.

The 2009 and 2011 cohorts were asked to provide open ended to feedback as part of the *DREAMWork Student Evaluation Survey*. The *hospital experience* and *job shadowing* were ranked as the favorite part of the summer program for both cohorts; 75% of the 2009 cohort and 88% of the 2011 cohort. When asked about things that would make the program better and things they would like to change, the 2009 cohort responded with *environmental* themed responses (food, weather, etc.) while the 2011 cohort responded with *organizational* themed responses (activity choices, organization, scheduling problems/delays, etc.).

Parents. The *DREAMWork Parent Evaluation Survey* asked parents about their perceptions of the DREAMWork summer program. Parents identified all three of the DREAMWork program goals in their open ended responses to the question 'what do you

hope your child will learn?’ Exposure to nursing roles and experiences was mentioned by 83% of the parents while exposure to college (academic expectations) and nursing academic requirements/whether to pursue nursing was mentioned by 42% and 25% respectively. Parents were not coached on the goals of the program prior to the orientation session yet offered the three program goals as examples of things they were hopeful their child would learn. This provides some validation of the importance and transparency of the goals of the DREAMWork summer program.

Staff/Faculty. The *DREAMWork Stakeholder Evaluation Survey* revealed high ratings across all items with the importance of DREAMWork program goals rated highest followed by overall program perceptions and finally success at achieving program goals. This flow of ratings suggests that staff/faculty value the importance of the goals of the DREAMWork summer program but do not believe as strongly that the program is meeting those goals. The lowest rated success related item concerned exposing students to nursing through didactic instruction. This was an odd result considering the DREAMWork summer program is housed in a nursing department and taught by nursing faculty. The low rating could be due to lack of knowledge about the specifics of how this goal is addressed or from first-hand knowledge about the content within the didactic courses and potential shortcomings.

In addition to the overall positive ratings, 100% of respondents ($n = 11$) said ‘yes’ they had seen signs that the DREAMWork summer program has an impact on student participants. Sixty percent said this impact was in the form of student awareness of and

preparation for success in college. Forty percent mentioned nursing specific education and twenty percent addressed specific skill improvement (writing and interview skills).

Implications for the DREAMWork Summer Program

It appears that the DREAMWork summer program is doing several things right. First, students are experiencing significant increases in perceptions of knowledge about nursing and academic related topics. Students are also experiencing significant increases in the perceived connection between nursing and academic rigor. This is a positive first step toward eliminating some of the barriers to BSN program entry in minority/disadvantaged students (Barton & Swider (2009).

Next, all major stakeholder groups appear to have a positive perception of the DREAMWork summer program and the impact it has on student participants. One hundred percent of faculty respondents said they had seen the impact of the summer program on the students. When asked to comment on the program, almost all parent respondents mentioned the quality of the program and the importance of the program to their child. For the students, across multiple measures, all content and activities during the summer program were highly rated and the ‘best’ part of the day was always characterized as *new knowledge* gained or *experiences* had through exposure to some aspect of the curriculum.

Finally, job shadowing and hospital experiences were the highest rated experiences for the students and were listed as the most important activities by the parents and the directors. These activities were also the favorite response when students

were asked what they wanted more of during the summer program. Job shadowing has the benefit of providing a realistic preview of the daily working environment of a nurse and therefore making students more aware of the requirements of a nurse in the real world. These shadowing experiences also provided students with real life role models; nursing role models have been shown to increase the likelihood a student will pursue a career in nursing (Grossman, et al., 1989).

Along with the positive feedback come several areas for potential improvement in the DREAMWork summer program. First, grade equivalent scores on the *Nelson Denny Reading Test* were below the critical value of 11 identified by previous research as an indicator of academic struggles related to job training (Brown, et al., 1993). The comprehension subscale and the reading rate both showed significant improvement from pre to post test for the 2011 cohort suggesting the reading assignments were beneficial to students. For future cohorts additional reading assignments should be added to assist improvement in this area in hopes of achieving grade equivalent scores above 11.

Next, a potential unintended consequence of the program was uncovered in this study. The DREAMWork summer program may serve as a realistic preview of nursing school expectations in addition to presenting nursing as a career opportunity. The ‘real’ picture of the academic requirements and specific nursing activities may lead some students to determine nursing is not a good career choice. The *DREAMWork Former Student Interview* revealed that smell was an important factor for one student and that realization led her to choose pre-med (with the long-term goal of radiology) instead of entering the school of nursing. The question measuring student likelihood to pursue a

career in nursing should be amended to include any health-related field. Also, an additional question may be necessary to ask students to explain why their likelihood rating changed from pre to post response.

Finally, the 2011 cohort appeared to experience some organizational/management issues that may need to be addressed in future cohorts. Ratings for the *well managed* category on the *DREAMWork Student Evaluation Survey* were the lowest of any other category across all other cohorts indicating a relatively major problem. When asked ‘what changes would make the program better’ as part of the *DREAMWork Daily Student Evaluation* 70% of responses in the 2011 cohort mentioned organizational themes. These responses reveal discontent among students with schedule changes, lack of choice in activities, delays in activities, and general (unspecified) organizational comments. The previous three cohorts did not experience these problems suggesting they may have developed because of the extended length of the 2011 summer program (17 days) and/or the number of students participating ($n = 27$)

Limitations of the Current Study

One of the most problematic features of the current study was the lack of control over the data collection process across cohorts which resulted in lack of control over the data available for analysis. This problem manifested in several different ways; incomplete demographic information across cohorts because no central database exists housing participant data; inconsistent data collection across cohorts resulting in

incomplete data – missing pre tests or open ended responses and changes in instruments from year to year; and missing stakeholder data across cohorts.

The first limitation begets the second; it was necessary to collect retrospective ratings from several stakeholder groups because no data existed and it was impossible and/or incredibly difficult to collect retrospective data from some stakeholder groups. The faculty/staff had been completely overlooked during data collection over the four years of the grant. The parents were not consistently measured across cohorts and it was impossible to administer a survey retrospectively due to the lack of longitudinal record keeping. Longitudinal data was not collected on former participants and lack of record keeping also made this data difficult to pursue. These issues combined to provide ‘spotty’ data across the four cohorts with very few measures that could be compared meaningfully across cohorts.

Next, there were multiple response rate issues across various measures. Student measures generally had very high response rates with the exception of the open ended responses for the 2011 cohort on the *DREAMWork Daily Student Evaluation*. The low student response to this instrument may have been due to the exorbitant number of instruments this cohort was asked to complete. Staff/faculty response rates on the *DREAMWork Stakeholder Evaluation Survey* were expected to be higher because of the professional population being surveyed. The lower than anticipated response rate may have been due to the timing of the survey (just prior to the beginning of fall semester) and/or the electronic delivery of the request for participation. The biggest response rate disappointment was from former DREAMWork students. The accessible number of

former students who were currently attending college was already a low number (partially due to lack of longitudinal record keeping) and of the nine who were contacted repeatedly, only one participated in the *DREAMWork Former Student Interview*.

Finally, the results of the population studied in the current research are not directly generalizable to any other groups of students or similar programs. This research concentrated on a small group of students from a non-random sample of local schools who chose to apply to and participate in a summer nursing immersion program. The program provides a unique context and set of circumstances that would be impossible to replicate elsewhere.

Implications for Future Research

There are several considerations for future research within the context of the DREAMWork summer program. First, data collection should continue in future cohorts of the summer program with a focus on the use of consistent measures. Parent and staff/faculty data should be collected for all future cohorts to provide a better picture of stakeholder perceptions and overall impact of the program. Director reflections should be collected at the end of each summer program to add depth and context to the individual cohort.

Next, longitudinal follow up is needed for all former DREAMWork participants. Questions of interest should mirror those of the *DREAMWork Former Student Interview Protocol* and include probes into their college experiences and degree(s) conferred or current major. This type of follow up was the first thing mentioned by the school of

nursing director when asked what she would change if she could start the program anew. Among previous studies of programs similar to DREAMWork only one study was located involving longitudinal tracking of participants and it provided very little information about the students themselves or their perceptions (Bumgarner, et al., 2003).

Finally, follow up with participants about how their career choice changed (or solidified) as a result of participation in the DREAMWork summer program would be beneficial. This information would provide insight into the dynamics of ‘why’ students are drawn to or stray from particular career paths. Information from this type of study would benefit program directors better plan program content and activities to assist students with making this type of career decision.

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APPENDICES

Appendix A. Informed Consent Forms



Student Informed Consent

You are invited to participate in a program evaluation study to improve the DREAMWork Program. The purpose of this study is to gain your feedback and assess your learning throughout the program. All responses are anonymous; your information will be linked with your personal identification code, which means that no one will know who gave what answers. You are free to choose not to participate, and this will in no way affect your ongoing participation in the DREAMWork program. You may stop at any point if you feel you do not want to complete the survey instruments. Data collection will be conducted by faculty and staff from the School of Nursing and the Department of Psychology at UTC. Any use of this information, such as in reports, will be for the group as a whole.

If you have any questions at any time about the study, you may contact the program evaluator Jenny Holcombe (Jenny-Holcombe@utc.edu) or DREAMWork Project Director, Martina Harris, EdD, RN at the University of Tennessee at Chattanooga, (423-425-4211) or by email: Martina-Harris@utc.edu.

This research has been reviewed and approved by the UTC Institutional Review Board. If you have any questions about your rights as a subject/participant in this research, or if you feel you have been placed at risk, you can contact the IRB Committee Chair, Bart Weathington, at 423-425-4270 or instrb@utc.edu. Additional contact information is available at www.utc.edu/irb

By signing below, you are agreeing to participate in the program evaluation. Thank you for your assistance.

Date

Signature of Participant

The Institutional Review Board of the University of Tennessee at Chattanooga (FWA00004149) has approved this research project # 11-033.



Parental Informed Consent

Your child has been enrolled in a program sponsored by the DREAMWork program of the School of Nursing at UTC. As part of that program, your child will be asked to complete several survey instruments and assessments designed to help us improve the quality of our program activities. We are asking for your consent for your child to complete these materials. All responses are anonymous; your child's information will be linked with a personal identification code, which means that no one will know who gave what answers. Also, your child is free to choose not to participate, and it will in no way affect their ongoing participation in the DREAMWork program. Data collection will be conducted by faculty and staff from the School of Nursing and the Department of Psychology at UTC. Any use of this information, such as in reports, will be for the group as a whole.

If you have any questions at any time about the study, you may contact the program evaluator Jenny Holcombe (Jenny-Holcombe@utc.edu) or DREAMWork Project Director, Martina Harris, EdD, RN at the University of Tennessee at Chattanooga, (423-425-4211) or by email: Martina-Harris@utc.edu.

This research has been reviewed and approved by the UTC Institutional Review Board. If you have any questions about your rights as a subject/participant in this research, or if you feel you have been placed at risk, you can contact the IRB Committee Chair, Dr. Bart Weathington, at 423-425-4270 or instrb@utc.edu. Additional contact information is available at www.utc.edu/irb

By signing below, you are agreeing to allow your child to be a part of our program evaluation. The same information will be explained to the student before the evaluations. Thank you for your assistance.

Date

Signature of Parent/Guardian

<p><i>The Institutional Review Board of the University of Tennessee at Chattanooga (FWA00004149) has approved this research project # 11-033.</i></p>
--

Informed Consent – DREAMWork Project Director/Nursing Director Interview

Thank you for agreeing to participate in this interview. This research is interested in learning about student experiences in the DREAMWork summer high school program. The purpose of the interview is to better understand how the DREAMWork summer high school program impacts student participants, especially those choosing to pursue higher education. This research is being conducted by Jenny Holcombe at the University of Tennessee at Chattanooga as part of a dissertation to complete requirements for a PhD in Evaluation, Statistics, & Measurements at the University of Tennessee at Knoxville.

This interview is completely voluntary. You may decline to answer any question or stop the interview at any time and for any reason. If you are a student at the University of Tennessee at Chattanooga, this interview will have no effect on your grades in any courses. Our discussion will be audio taped to help me accurately capture your insights in your own words. The tapes will only be heard by me for the purpose of this study. If you feel uncomfortable with the recorder, you may ask that it be turned off at any time. If you choose to withdraw from the study, any information you provide (including audio recordings) will be destroyed and omitted from the final paper.

Insights gathered by you and others will be used in writing a dissertation. Though direct quotes from you may be used in the final dissertation, your name and other identifying information will be kept anonymous.

If you have any questions or concerns, either during or after this interview, please contact:

Jenny Holcombe Curry
Instructor, Metro 336
School of Nursing
University of Tennessee at Chattanooga
615 McCallie Avenue
Chattanooga, TN 37403
(423) 425-5542

By signing this form, you agree that you have read it and have had any questions about it answered by the interviewer.

Signed: _____

Name: _____

Date: _____

UTC IRB Chair – Dr. Bart Weathington – (423) 425-4289

The Institutional Review Board of the University of Tennessee at Chattanooga (FWA00004149) has approved this research project #12-122.

Informed Consent – DREAMWork Adult Student Interview

Thank you for agreeing to participate in this interview. This research is interested in learning about student experiences in the DREAMWork summer high school program. The purpose of the interview is to better understand how the DREAMWork summer high school program impacts student participants, especially those choosing to pursue higher education. This research is being conducted by Jenny Holcombe at the University of Tennessee at Chattanooga as part of a dissertation to complete requirements for a PhD in Evaluation, Statistics, & Measurements at the University of Tennessee at Knoxville.

This interview is completely voluntary. You may decline to answer any question or stop the interview at any time and for any reason. If you are a student at the University of Tennessee at Chattanooga, this interview will have no effect on your grades in any courses. Our discussion will be audio taped to help me accurately capture your insights in your own words. The tapes will only be heard by me for the purpose of this study. If you feel uncomfortable with the recorder, you may ask that it be turned off at any time. If you choose to withdraw from the study, any information you provide (including audio recordings) will be destroyed and omitted from the final paper.

Insights gathered by you and others will be used in writing a dissertation. Though direct quotes from you may be used in the final dissertation, your name and other identifying information will be kept anonymous.

If you have any questions or concerns, either during or after this interview, please contact:

Jenny Holcombe Curry
 Instructor, Metro 336
 School of Nursing
 University of Tennessee at Chattanooga
 615 McCallie Avenue
 Chattanooga, TN 37403
 (423) 425-5542

By signing this form, you agree that you have read it and have had any questions about it answered by the interviewer.

Signed: _____

Name: _____

Date: _____

UTC IRB Chair – Dr. Bart Weathington – (423) 425-4289

The Institutional Review Board of the University of Tennessee at Chattanooga (FWA00004149) has approved this research project #12-122.

Informed Consent - DREAMWork Stakeholder Evaluation Survey

The purpose of this research is to collect information from faculty and/or staff connected to the DREAMWork summer high school program during the past four years. The survey is interested in assessing faculty/staff perceptions about the program and the students involved. This research is being conducted by Jenny Holcombe at the University of Tennessee at Chattanooga as part of a dissertation to complete requirements for a PhD in Evaluation, Statistics, & Measurements at the University of Tennessee at Knoxville. You are invited to participate in this research because of your involvement with the DREAMWork summer high school program.

Your participation in this research study is voluntary. You may choose not to participate. If you decide to participate in this research survey, you may withdraw at any time. If you decide not to participate in this study or if you withdraw from participation at any time, you will not be penalized.

The procedure involves completing an online survey that will take approximately 10 minutes. Your responses will be confidential and no identifying information (name, email address, IP address, etc.) will be collected. Individual questions ask respondents to rate the DREAMWorks summer high school program, the students, the structure, and the curriculum.

All efforts will be made to keep your information confidential. All data is stored in a password protected electronic format. To help protect your confidentiality, the surveys will not contain information that will personally identify you. The results of this study will be used for scholarly purposes only.

If you have any questions about the research study, please contact Jenny Holcombe Curry at Jenny-Holcombe@utc.edu. This research has been reviewed according to University of Tennessee at Chattanooga and University of Tennessee at Knoxville IRB procedures for research involving human subjects.

ELECTRONIC CONSENT: Please select your choice below.

Clicking on the “agree” button below indicates that:

- (1) You have read the above information
- (2) You voluntarily agree to participate
- (3) You are at least 18 years of age

If you do not wish to participate in the research study, please decline participation by clicking on the “disagree” button.

_____ AGREE

_____ DISAGREE

You may wish to print a copy of this informed consent for your records

UTC IRB Chair – Dr. Bart Weathington – (423) 425-4289

The Institutional Review Board of the University of Tennessee at Chattanooga (FWA00004149) has approved this research project #12-122.

Appendix B. DREAMWork Curriculum Content Across Cohorts

Curriculum Content	2008 <i>(14 days)</i>	2009 <i>(8 days)</i>	2010 <i>(10 days)</i>	2011 <i>(17 days)</i>
Student/Parent Orientation	X	X	X	X
CPR	X	X	X	X
Vital Signs	X	X	X	X
Medical Terminology	X	X	X	X
Simulation Lab/ SIMMAN Experience	X	X	X	X
Hospital Tour	X	X	X	X
Anatomy & Physiology	X	X	X	X
Math Skills	X	X	X	X
Dosage Calculations	X	X	X	X
Writing Lab/Assignment/Literature Review	X	X	X	X
Myths & Facts About Nursing Careers	X	X	X	
Scavenger Hunt		X	X	X
Undergraduate Nursing Admissions Requirements		X	X	X
Job Shadowing		X	X	X
Financial Aid & Admissions		X	X	X
HIPAA		X	X	X
College Survival Skills	X	X		X
Library Experience/Blackboard Training	X	X		X
Culture Sensitivity & Ethics	X		X	X
Skills Lab/Basic Nursing Skills	X	X		
Drug Education – Effects of Drugs on the Body			X	X
Nutrition for Academic Success/Physical Activity			X	X
Time & Stress Management			X	X
Resume Building/Interview Skills/Professionalism			X	X
Community Service			X	X
Grady Hospital – Advancements in Acute Care Nursing			X	X
History of Nursing	X			
Microbiology	X			
Critical Thinking Exercise			X	
CDC – Disease Investigation	X		X	
Chattanooga Sports Facility				X
ACT Prep				X
HIV/AIDS/STDs Education				X
Study Skills				X
Bodies Exhibit				X
EKG Lab				X
Nursing Panel Discussion				X
Pharmacology				X
PPE & Infection Control				X
Pathophysiology				X

Appendix C. DREAMWork Daily Student Evaluation

DREAMWork - Daily Evaluation High School Camp

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

TOPIC 1:

The instructor for today was well prepared	1	2	3	4	5	N/A
The module was interesting						
The topic today helped me become a better student	1	2	3	4	5	N/A
The content was well presented						
The information was useful						
The information was new to me						
I would recommend this topic for next summer	1	2	3	4	5	N/A
This content is important to the field of nursing	1	2	3	4	5	N/A

TOPIC 2:

The instructor for today was well prepared	1	2	3	4	5	N/A
The module was interesting						
The topic today helped me become a better student	1	2	3	4	5	N/A
The content was well presented						
The information was useful						
The information was new to me						
I would recommend this topic for next summer	1	2	3	4	5	N/A
This content is important to the field of nursing	1	2	3	4	5	N/A

The best thing I learned today was:

If I could change one thing about today it would be:

Appendix D. DREAMWork Student Evaluation Surveys

2008 - DREAMWork Student Evaluation Survey (pre/post)

Using the following scale select the number that indicates how much you know about the following topics.

1	2	3	4	5
Nothing				A
At				Great
All				Deal

- ___ How knowledgeable are you about the role of nursing within society?
- ___ How prepared do you feel about writing an APA style term paper?
- ___ How comfortable do you feel using the library for research?
- ___ How knowledgeable do you feel about the history of nursing?
- ___ How comfortable do you feel about finding your way around campus?
- ___ How knowledgeable are you about your basic math skills and dosage calculations?
- ___ How knowledgeable are you about microbiology?
- ___ How knowledgeable are you about anatomy and physiology?
- ___ How prepared do you feel about writing an affective English paper?
- ___ How comfortable do you feel using the UTC Blackboard system?
- ___ How comfortable do you feel in a “hands on” nursing environment within society?
- ___ How prepared do you feel in providing culturally competent care in a culturally diverse environment?
- ___ How prepared do you feel to begin the Fall semester?

2009 – DREAMWork Student Evaluation Survey (pre/post)

For each of the following, indicate how important the topic is for success in nursing:

	1	2	3	4	5		
	Not Important				Very Important		
Mathematics			1	2	3	4	5
English			1	2	3	4	5
Public Speaking			1	2	3	4	5
Critical Thinking			1	2	3	4	5
Respect for others			1	2	3	4	5
Understanding cultural differences			1	2	3	4	5
Using the library			1	2	3	4	5
Using the internet			1	2	3	4	5
Science			1	2	3	4	5

How much do you know about the following topics? (Circle One)

	1	2	3	4	5		
	Nothing At All				A Great Deal		
CPR			1	2	3	4	5
Qualifications to be a nurse			1	2	3	4	5
What a nurse does day to day			1	2	3	4	5
Using APA style for writing			1	2	3	4	5
How to take vital signs			1	2	3	4	5
What is covered by HIPAA			1	2	3	4	5
How to apply for financial aid			1	2	3	4	5
Requirements to be admitted to college			1	2	3	4	5
Requirements for the School of Nursing			1	2	3	4	5

2010 – DREAMWork Student Evaluation Survey (pre/post)

For each of the following, indicate how important the topic is for success in nursing:

	1	2	3	4	5		
	Not Important				Very Important		
Mathematics			1	2	3	4	5
English			1	2	3	4	5
Public Speaking			1	2	3	4	5
Critical Thinking			1	2	3	4	5
Respect for others			1	2	3	4	5
Understanding cultural differences			1	2	3	4	5
Using the library			1	2	3	4	5
Using the internet			1	2	3	4	5
Science			1	2	3	4	5

How much do you know about the following topics? (Circle One)

	1	2	3	4	5		
	Nothing At All				A Great Deal		
CPR			1	2	3	4	5
Qualifications to be a nurse			1	2	3	4	5
What a nurse does day to day			1	2	3	4	5
Using APA style for writing			1	2	3	4	5
How to take vital signs			1	2	3	4	5
What is covered by HIPAA			1	2	3	4	5
How to apply for financial aid			1	2	3	4	5
Requirements to be admitted to college			1	2	3	4	5
Requirements for the School of Nursing			1	2	3	4	5

On the scale from 1 to 10, where 1 is Very Likely and 10 is Very Unlikely, indicate *how likely it is that you will choose nursing as a career*:

1	2	3	4	5	6	7	8	9	10
Very Likely									Very Unlikely

Post Only Items:

I would recommend this program to my friends who are interested in nursing (Circle One)

. Yes No

I think the program should be: (Pick One)

- a. Shorter
- b. The same length
- b. Longer

Would you like to participate in an on-line chat group with people from the program and other involved in nursing and health care. (Circle One)

Yes No

I would rate the program as: (Please rate each aspect)

	1	2	3	4	5
	Not At All				A Great Deal
Useful	1	2	3	4	5
Interesting	1	2	3	4	5
A good learning experience	1	2	3	4	5
Well managed	1	2	3	4	5
Worth my time	1	2	3	4	5
Stimulating my interest in nursing	1	2	3	4	5

For each of the following, indicate how important the topic is for success in nursing:

	1	2	3	4	5
	Not Important				Very Important
Mathematics			1	2	3 4 5
English			1	2	3 4 5
Public Speaking			1	2	3 4 5
Critical Thinking			1	2	3 4 5
Respect for others			1	2	3 4 5
Understanding cultural differences			1	2	3 4 5
Using the library			1	2	3 4 5
Using the internet			1	2	3 4 5
Science			1	2	3 4 5

How much do you know about the following topics? (Circle One)

	1	2	3	4	5
	Nothing At All				A Great Deal
CPR			1	2	3 4 5
Qualifications to be a nurse			1	2	3 4 5
What a nurse does day to day			1	2	3 4 5
Using APA style for writing			1	2	3 4 5
How to take vital signs			1	2	3 4 5
What is covered by HIPAA			1	2	3 4 5
How to apply for financial aid			1	2	3 4 5
Requirements to be admitted to college			1	2	3 4 5
Requirements for the School of Nursing			1	2	3 4 5

The thing I learned that was most important to me was:

Using the following scale select the number that indicates how much you know about the following topics.

1	2	3	4	5
Nothing				A
At				Great
All				Deal

- ___ How knowledgeable are you about the role of nursing within society?
- ___ How prepared do you feel about writing an APA style term paper?
- ___ How comfortable do you feel using the library for research?
- ___ How knowledgeable do you feel about the history of nursing?
- ___ How comfortable do you feel about finding your way around campus?
- ___ How knowledgeable are you about your basic math skills and dosage calculations?
- ___ How knowledgeable are you about microbiology?
- ___ How knowledgeable are you about anatomy and physiology?
- ___ How prepared do you feel about writing an affective English paper?
- ___ How comfortable do you feel using the UTC Blackboard system?
- ___ How comfortable do you feel in a “hands on” nursing environment within society?
- ___ How prepared do you feel in providing culturally competent care in a culturally diverse environment?
- ___ How prepared do you feel to begin the Fall semester?

I would recommend this program to my friends who are interested in nursing (Circle One)

. Yes No

I think the program should be: (Pick One)

- a. Shorter
- b. The same length
- b. Longer

The one thing that I hoped would be covered but was not was:

My favorite part of the program was:

I wish we had done more:

Please list three things that you think would make this program better the next time it is offered:

1.

2.

3.

If you could change one thing about the program it would be:

Would you like to participate in an on-line chat group with people from the program and other involved in nursing and health care. (Circle One)

Yes No

I would rate the program as: (Please rate each aspect)

	1	2	3	4	5
	Not At All				A Great Deal
Useful	1	2	3	4	5
Interesting	1	2	3	4	5
A good learning experience	1	2	3	4	5
Well managed	1	2	3	4	5
Worth my time	1	2	3	4	5
Stimulating my interest in nursing	1	2	3	4	5

Appendix E. Nelson-Denny Reading Test (sample items)

Vocabulary Sample Questions:

An implausible agreement would be:

- a) Possible
- b) Hard to believe
- c) Imaginary
- d) Historical
- e) Funny

A rigorous teacher is:

- a) Hard to believe
- b) Righteous
- c) Direct
- d) Strict
- e) Satisfying

Comprehension Sample Questions:

In the sixteenth century, an age of great marine and terrestrial exploration, Ferdinand Magellan led the first expedition to sail around the world. As a young Portuguese noble, he served the king of Portugal, but he became involved in the quagmire of political intrigue at court and lost the king's favor. After he was dismissed from service to the king of Portugal, he offered to serve the future Emperor Charles V of Spain.

A papal decree of 1493 had assigned all land in the New World west of 50 degrees W longitude to Spain and all the land east of that line to Portugal. Magellan offered to prove that the East Indies fell under Spanish authority. On September 20, 1519, Magellan set sail from Spain with five ships. More than a year later, one of these ships was exploring the topography of South America in search of a water route across the continent. This ship sank, but the remaining four ships searched along the southern peninsula of South America. Finally they found the passage they sought near a latitude of 50 degrees S. Magellan named this passage the Strait of all Saints, but today we know it as the Strait of Magellan.

One ship deserted while in this passage and returned to Spain, so fewer sailors were privileged to gaze at that first panorama of the

Pacific Ocean. Those who remained crossed the meridian we now call the International Date Line in the early spring of 1521 after ninety-eight days on the Pacific Ocean. During those long days at sea, many of Magellan's men died of starvation and disease. Later Magellan became involved in an insular conflict in the Philippines and was killed in a tribal battle.

Only one ship and seventeen sailors under the command of the Basque navigator Elcano survived to complete the westward journey to Spain and thus prove once and for all that the world is round, with no precipice at the edge.

(1) Magellan lost the favor of the king of Portugal when he became involved in a political:

- a. Entanglement
- b. Discussion
- c. Negotiation
- d. Problems
- e. None of the above

(2) Four of the ships sought passage along a southern:

- a. Coast
- b. Inland
- c. Body of land with water on three sides
- d. Border
- e. None of the above

Appendix F. Watson Glaser Critical Thinking Appraisal (sample items)

- (1) A list of inferences follows a statement. Mark each True, Probably True, Insufficient Data, Probably False, or False.

Two hundred students in their early teens voluntarily attended a recent weekend student conference in a Midwestern city. At this conference, the topics of race relations and means of achieving lasting world peace were discussed, because these were the problems the students selected as being most vital in today's world.

- a) As a group, the students who attended this conference showed a keener interest in broad social problems than do most other students in their early teens.
 - b) The majority of the students had not previously discussed the conference topics in their schools.
 - c) The students came from all sections of the country.
 - d) The students discussed mainly labor relations problems.
 - e) Some teenage students felt it worthwhile to discuss problems of race relations and ways of achieving world peace.
- (2) If you think that the given assumption is taken for granted in the statement, mark the statement Assumption Made. If you think the assumption is not necessarily taken for granted in the statement, mark the statement Assumption Not Made.

Statement: We need to save time in getting there, so we'd better go by plane.

- a) Going by plane will take less time than going by some other means of transportation.
 - b) There is plane service available to us for at least part of the distance to the destination.
 - c) Travel by plane is more convenient than travel by train.
- (3) For the purpose of this test, assume that everything in the short paragraph is true. The problem is to judge whether or not each of the proposed conclusions logically follows beyond a reasonable doubt from the information given in the paragraph. If you think that the proposed conclusion follows beyond a reasonable doubt (even though it may not follow absolutely and necessarily), mark the statement Conclusion Follows. If you think that the conclusion does not follow beyond a reasonable doubt from the facts given, mark the statement Conclusion Does Not Follow. Remember to judge each conclusion independently.

A study of vocabulary growth in children from eight months to six years old shows that the size of spoken vocabulary increases from zero words at age eight months to 2,562 words at age six years.

- a) None of the children in this study had learned to talk by the age of six months.
- b) Vocabulary growth is slowest during the period when children are learning to walk.

Appendix G. DREAMWork Parent Evaluation Survey

Appendix H. DREAMWork Stakeholder Evaluation Survey

DREAMWork Stakeholder Evaluation Survey

Please respond to the following questions with the response that best fits how you feel.

- (1) How many summers have you been involved with the DREAMWork high school summer program?

1 2 3 4 5

- (2) Approximately how many total hours of interaction have you had with students in the DREAMWork high school summer program?

Less than 1 1-5 6-10 11-15 16-20 21-25 More than 25

- (3) Please rate your interaction with the students in the DREAMWork high school summer program.

(very DIS-satisfied) 1 2 3 4 5 (very satisfied)

- (4) Please rate the importance of each of the following goals to the DREAMWork high school summer program:

- a. Expose high school students to nursing through didactic instruction on topics necessary to becoming a nurse

(extremely UN-important) 1 2 3 4 5 (extremely important)

- b. Expose high school students to nursing through 'hands-on' activities parallel to those a nurse would encounter on a daily basis

(extremely UN-important) 1 2 3 4 5 (extremely important)

- c. Provide general college preparation information designed to encourage high school students to pursue higher education

(extremely UN-important) 1 2 3 4 5 (extremely important)

(5) Please rate the success of the DREAMWork high school summer program in achieving each of the following goals:

- a. Expose high school students to nursing through didactic instruction on topics necessary to becoming a nurse

(extremely UN-successful) 1 2 3 4 5 (extremely successful)

- b. Expose high school students to nursing through 'hands-on' activities parallel to those a nurse would encounter on a daily basis

(extremely UN-successful) 1 2 3 4 5 (extremely successful)

- c. Provide general college preparation information designed to encourage high school students to pursue higher education

(extremely UN-successful) 1 2 3 4 5 (extremely successful)

(6) Have you seen any signs that the DREAMWork high school summer program has an impact on student participants?

Yes No

If yes, please elaborate...

(7) Overall, my experience with the DREAMWork high school summer program was positive.

(DIS-agree completely) 1 2 3 4 5 (agree completely)

(8) Overall, the DREAMWork high school summer program is successful.

(DIS-agree completely) 1 2 3 4 5 (agree completely)

(9) Overall, the DREAMWork high school summer program is beneficial to students.

(DIS-agree completely) 1 2 3 4 5 (agree completely)

Appendix I. Program Director/School of Nursing Director Interview Protocol

DREAMWork Project Director/Department Head Interview

- (1) How would you characterize the goals/objectives of the DREAMWork high school summer program?
- (2) How would you rate the program in achieving each of those goals/objectives?
- (3) Present each stated goal/objective of the program and ask the following:
 - a. What is the program doing to achieve each of these goals/objectives?
 - b. How would you rate the program in achieving each of these goals/objectives?
- (4) Do you believe the student participants have benefitted from the program? Why or why not?
- (5) What changes would you make to the DREAMWork high school summer program if you were able to start over?

Appendix J. Former DREAMWork Student Interview Protocol

Former DREAMWork Student Interview Protocol

- (1) Why did you choose to participate in the DREAMWork high school summer program?
- (2) What are the primary benefits you derived from participation in the program?
- (3) What were the least desirable aspects of the program?
- (4) How would you describe the goals of the DREAMWork high school summer program?
- (5) Do you think those goals are being accomplished? Why or why not?
- (6) What was your favorite part of the program?
- (7) Do you feel other high school students would benefit from participating in the program?
- (8) Did participating in the program influence your decision to attend college? Why or why not?
- (9) What is your current major? Why?
- (10) Do you have any suggestions for improving the DREAMWork high school summer program?

Appendix K. Cohen's d Values for Table 4 – Student Evaluation Survey

Items	2008		2009		2010	
	<i>t</i>	<i>d</i>	<i>t</i>	<i>d</i>	<i>t</i>	<i>d</i>
How knowledgeable are you about the role of nursing within society?	-5.40	1.02				
How prepared do you feel about writing an APA style term paper?	-1.99	.44				
How comfortable do you feel using the library for research?	-1.19	.31				
How knowledgeable do you feel about the history of nursing?	-6.50	1.55				
How comfortable do you feel about finding your way around campus?	-1.71	.26				
How knowledgeable are you about your basic math skills & dosage calculations?	-3.23	.69				
How knowledgeable are you about microbiology?	-3.79	1.19				
How knowledgeable are you about anatomy & physiology?	-4.30	.96				
How prepared do you feel about writing an effective English paper?	-3.01	.53				
How comfortable do you feel using the UTC Blackboard system?	-2.69	.80				
How comfortable do you feel in a 'hands-on' nursing environment within society?	-2.45	.58				
How prepared do you feel in providing culturally competent care in a culturally diverse environment?	-3.07	.78				
How prepared do you feel to begin the Fall semester?	-2.43	.72				
How likely is it that you will choose nursing as a career? (1-10)			-2.03	.42	-1.04	.38
Indicate how important <i>mathematics</i> is for success in nursing			-3.21	1.17	-2.54	.72
Indicate how important <i>English</i> is for success in nursing			-2.17	.73	-2.08	.37
Indicate how important <i>Public Speaking</i> is for success in nursing			-1.52	.41	-1.28	.31
Indicate how important <i>Critical Thinking</i> is for success in nursing			-2.26	.74	-1.70	.49
Indicate how important <i>Respect for Others</i> is for success in nursing			-1.00	.37	-1.00	.30
Indicate how important <i>Understanding Cultural Differences</i> is for success in nursing			.46	.20	-2.03	.49

Indicate how important <i>Using the Library</i> is for success in nursing	-4.00	1.12	-2.27	.57
Indicate how important <i>Using the Internet</i> is for success in nursing	-2.70	.94	-3.20	.86
Indicate how important <i>Science</i> is for success in nursing	-1.00	n/a	-1.23	.37
How much do you know about <i>CPR</i> ?	-5.40	1.97	-4.81	1.46
How much do you know about <i>Qualifications to be a Nurse</i> ?	-7.25	2.37	-6.11	1.42
How much do you know about <i>What a Nurse Does Day to Day</i> ?	-5.80	1.96	-6.27	1.57
How much do you know about <i>Using APA Style for Writing</i> ?	-4.40	1.71	-5.16	1.59
How much do you know about <i>How to Take Vital Signs</i> ?	-9.77	3.39	-6.52	1.90
How much do you know about <i>What is Covered by HIPAA</i> ?	-10.27	3.80	-3.80	.84
How much do you know about <i>How to Apply for Financial Aid</i> ?	-6.25	2.28	-4.62	.93
How much do you know about <i>Requirements to be Admitted to College</i> ?	-3.56	1.15	-2.75	.71
How much do you know about <i>Requirements for the School of Nursing</i> ?	-6.21	2.13	-6.34	1.46

VITA

Jenny Holcombe Curry grew up in Rock Spring, Georgia and attended the University of Tennessee at Chattanooga, in Chattanooga, Tennessee, where she earned her Bachelor's of Science in Psychology (1999) and Master's of Science in Industrial/Organizational Psychology (2001). Jenny worked on multiple research and grant projects serving as a data analyst and evaluation consultant (2002-2010). She was also an adjunct professor at the University of Tennessee at Chattanooga (2000-2001; 2002-2009).

Jenny was accepted in the Evaluation, Statistics, and Measurement Doctoral program at the University of Tennessee in 2004. In 2011 she was hired in her current position as a lecturer in the School of Nursing at the University of Tennessee at Chattanooga where she teaches biostatistics, research methods, evidence based practice, and epidemiology at the graduate level. Jenny's areas of interest include educational evaluation, instrument development and evaluation, and statistical instruction using distance education methods.