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Relationship of Select Admissions Criteria to Pre-Licensure Requirements in a Graduate Degree Program in Occupational Therapy

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RELATIONSHIP OF SELECT ADMISSIONS CRITERIA TO
PRE-LICENSURE REQUIREMENTS IN A GRADUATE DEGREE PROGRAM
IN OCCUPATIONAL THERAPY

by

SHARON DELANEY SWIFT

(Under the Direction of James Green)

ABSTRACT

As the profession of occupational therapy continues to become widely recognized as a top career choice, the number of applications to occupational therapy educational programs continues to rise. To date there has been little research regarding the admission process and the admission variables used to select candidates for admission. Healthcare professions such as occupational therapy must reliably select those applicants who can succeed in the academic classroom and in the clinical setting by providing competent compassionate patient care.

This study sought to examine whether select cognitive and non-cognitive admission variables could be used to predict graduate performance on pre-licensure requirements (fieldwork performance scores, first time pass rate on national board examination, and scores on a comprehensive departmental exit exam). Cognitive variables included applicants' grade point average, math science grade point average, and GRE exam scores (math, verbal, and written). The variables of college attended, college major, college degree, and number of credit hours were also included in this study. Non-cognitive variables included previous healthcare experience, the type of pre-admission

experience with an occupational therapist and whether the applicant, or a family member, has had therapy services in the past.

The results from this study found several statistically significant admission variables that were predictive of student performance on the pre-licensure requirements. Despite the significance, the variables accounted for little variability in the overall outcome measures. However, an applicant's overall GPA was beneficial in increasing the likelihood of passing the national board examination on the first attempt. GRE math scores increased student performance on all three pre-licensure requirements and remained as the only significant variable in the final regression model. Non-cognitive variables of patient care, related health care experience and community service were also significantly related to pre-licensure performance.

INDEX WORDS: Occupational therapy admissions, Admission variables, Cognitive variables, Non-cognitive variables, Fieldwork Performance Evaluation (FWPE), National Board for Certification in Occupational Therapy (NBCOT) exam, Program outcomes

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by

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Partial Fulfillment of the Requirements for the Degree

DOCTOR OF EDUCATION

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2012

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IN OCCUPATIONAL THERAPY

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SHARON DELANEY SWIFT

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DEDICATION

To my family, I love you more than you can ever know. You have been supportive through late nights of class, missed Saturday activities, and long hours of typing at the dining room table.

To my wonderful husband Jeff, did you ever imagine we would wind up here when we started this journey 17 years ago? You have always supported my education and my dreams. I could have never done this without your love and support! I love you!

To my children, Sam, Alexandra, Kathryn, and Caroline. You are my favorite people in the whole entire world. While you kept a brave face, I know that it was hard to understand why I have been so busy. I hope that I have been able to instill the value of dedication and determination towards education in each of you. My wish is that you someday experience the great sense of accomplishment that I have upon completion of this process. I love you more than you can even imagine!

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RELATIONSHIP OF SELECT ADMISSIONS CRITERIA TO
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Sharon Delaney Swift

May 30, 2012

Table of Contents

CHAPTER I INTRODUCTION.....	14
Background.....	15
Statement of the Problem.....	19
Research Questions.....	20
Significance of the Study.....	21
Procedures.....	22
Research Design.....	23
Population.....	23
Procedures.....	23
Data Collected.....	24
Data Analysis.....	24
Delimitations.....	24
Limitations.....	25
Assumptions.....	25
Definition of Terms.....	26
Summary.....	26
CHAPTER II REVIEW OF LITERATURE.....	34
What is Occupational Therapy?.....	36
Occupational Therapy Education.....	39
Overview of Admissions Process.....	42
Cognitive Variables.....	46
Grade Point Average (GPA).....	46
Standardized Test Scores.....	49
Non-cognitive Variables.....	54
Personality Tests.....	54
Letters of Recommendation.....	56
Interview.....	57
Personal Essay.....	60
Previous Experience.....	60
Conclusion.....	62

CHAPTER III METHOD	65
Research Questions	65
Research Design.....	66
Sample.....	67
Instruments.....	69
Fieldwork Performance Evaluation	70
National Board Examination	73
Departmental Exit Examination Scores.....	77
Procedures.....	78
Data Collected.....	79
Chapter Summary	83
CHAPTER IV RESULTS.....	85
Research Design.....	86
Sample Demographics	87
Descriptive Statistics.....	88
Correlational Analysis	95
Research Question One.....	96
Research Question Two	103
Research Question Three	106
Research Question Four.....	115
Results of Regression Models.....	119
Summary	126
CHAPTER V DISCUSSION	129
Description of Sample.....	131
Summary of Pre-licensure Requirements	135
Interpretation of Results.....	137
Prior College Performance	138
Graduate Records Examination	148
Previous Experience	151
Cognitive and Non-cognitive Variables in Regression Models	157
Research Summary	160

Recommendations for Future Research	163
Summary	165
REFERENCES	167
APPENDICES	
APPENDIX A: AOTA’S FIELDWORK PERFORMANCE EVALUATION	177
APPENDIX B: IRB APPROVAL	186
APPENDIX C: KEY TO CODING.....	196
APPENDIX D: PEARSON CORRELATION TABLES FOR FWPE.....	203

LIST OF TABLES

Table 1: Mean Prior College Performance	89
Table 2: College Major and Degree Earned	90
Table 3: College Group Using the USG Ranking System.....	91
Table 4: College Grouping Using the Basic Carnegie Classification of Institutions	91
Table 5: Applicants' Pre-Admission Experience.....	92
Table 6: Applicants' Previous Contact Experience	93
Table 7: Level II Fieldwork Performance Evaluation Results	94
Table 8: Summary of Pre-licensure Pass Rates	95
Table 9: Pearson Correlations of Categorical Variables.....	96
Table 10: Relationship of GPA and Math/Science GPA with Students' FWPE Scores ...	97
Table 11: Relationship of Previous Number of Earned College Credit Hours with FWPE Scores	98
Table 12: Results of FWPE Scores Based on USG College & Carnegie Classification ...	99
Table 13: Previous College Performance as a Predictor of Performance on Exit Exam.	100
Table 14: Results of Exit Exam Based on USG and Carnegie Classification	101
Table 15: Results of First Time Pass Rate on NBCOT Based on Previous College Performance	102
Table 16: GRE Scores as Predictors of FWPE Scores	104
Table 17: Results of Exit Exam Based on GRE Scores.....	105
Table 18: First Time Pass Rate on NBCOT Based on GRE Scores	106
Table 19: Additional Experience as a Predictor Variable for FWPE Scores.....	108
Table 20: Preadmission Experience with an OT as a Predictor of FWPE Scores	109

Table 21: Results from Patient Contact and FWPE Scores	111
Table 22: Results from Related Healthcare Experience and FWPE Scores	112
Table 23: Results of Community Service and FWPE Scores	113
Table 24: Non-Cognitive Variables as Predictors of Exit Exam Scores	114
Table 25: Non-Cognitive Variables and First Time Pass Rate on NBCOT Exam	115
Table 26: Results for Passing All Pre-licensure Requirements	118
Table 27: Regression Models for Continuous Outcome Measures	121
Table 28: Results of Regression Analysis for Categorical Outcomes	125
Table 29: Descriptive Statistics of Prior Collegiate Performance	134
Table 30: Descriptive Statistics of Non-Cognitive Variables	135
Table 31: Descriptive Statistics of Pre-licensure Requirements	137
Table 32: Impact of GPA on Pre-licensure Requirements	141
Table 33: Results of College Credits and FWPE Scores	143
Table 34: NBCOT Pass Rate Based on USG and Carnegie Classifications	146
Table 35: Results of FWPE Scores Based on USG and Carnegie Classifications	147
Table 36: Exit Exam Results Based on USG and Carnegie Classifications	148
Table 37: Statistically Significant Results ($p=.1$) of GRE Scores & Pre-Licensure Requirements	150
Table 38: Significant Results ($p=.1$) of Previous Experience and Pre-licensure Requirements	155
Table 39: Final Regression Models for Categorical Outcome Variables	159

CHAPTER I

INTRODUCTION

For the past six consecutive years the profession of occupational therapy has been named as a top career by *US News and World Report* (Grant, 2010; Nemko, 2006; Nemko, 2008; US News, 2007; US News, 2008; Wolgemuth, 2009). This public acknowledgement of a little known profession has created a surge of graduate program inquiries and applicants. Nationally, admissions applications to graduate level occupational therapy programs have increased approximately 40% over this same time period (American Occupational Therapy Association [AOTA], 2010a; AOTA, 2009b). Currently there are 147 professional programs accredited by the Accreditation Council for Occupational Therapy Education (ACOTE) with nearly 14,600 annual applicants vying for limited seats (AOTA, 2010b). Prospective applicants will discover that there is little consistency between the programs in regards to admission criteria; however, most programs do agree that they are seeking students who have “internal motivation, insight, and self-knowledge” (McEwen & Crawford, 1995). Additionally, applicants must be academically prepared to handle the rigor and pace of graduate level health care curricula. Therefore, admission committees must utilize selection processes that identify the top candidates to become occupational therapists from all who apply (Posthuma & Sommerfreund, 1985).

Despite the importance of the admission process, there is little consensus within the profession regarding the methods used to select applicants. A recent study by Auriemma (2007) found that there were 41 different admission variables used among occupational therapy programs. Existing literature within the profession of occupational

therapy and allied health provides minimal support for the most commonly used variables for undergraduate and graduate level admissions. However, with the recent (2007) switch to the requirement of a master's degree for entry into the profession, there is relatively little research on the relationship of admission variables and the success of students in graduate occupational therapy programs.

Background

Admission committees are charged with identifying “students who will complete the educational program and go into professional careers, do well in the program, perform creditably in professional practice and possess the traits of character and ethical values desired of a professional person” (Nayer, 1992, p. 41). Hence, admission committees must not only predict future academic ability, but also make judgments regarding the presence, or absence, of traits that are necessary for success in the program and the profession. A successful occupational therapy student must not only perform in the classroom academically, but must also be successful during fieldwork rotations where interpersonal skills and professionalism is a must. Successful completion of two fieldwork rotations, a comprehensive exit examination, and a national certification examination are all necessary requirements for professional licensure. In a time where professional practice is mandated to be based on evidence, there is surprisingly little evidence to support the vast array of admission variables and processes used to admit students into graduate occupational therapy programs (Auriemma, 2007).

While extensive standards regarding student outcomes have been set forth by the profession of occupational therapy, there is little information concerning the admissions criteria programs should use to ensure that applicants are able to meet the academic rigor

and clinical competencies expected of graduate level OT programs. AOTA (2002) proposes the following attributes for the practicing therapist:

Occupational therapists need patience, understanding and compassion when dealing with clients facing health problems. Patience is important because many clients may not show rapid progress and practitioners must be prepared for that challenge. Being understanding and having compassion is also vital when working with clients who have disabilities that require them to undergo extensive and sometimes painful treatment in order to improve their function. Finally, occupational therapy is a field that calls for a certain amount of passion for the beneficial and life-changing work that therapists perform (p. 1).

Such a description of occupational therapy is void of any quantitative, or objective, measure of a therapist, the skills necessary to be successful in the classroom, or profession. Instead, it illustrates the complexity of the many innate factors that constitute an OT and the many factors that must be considered by admission committees when selecting future students.

Accreditation standards set by ACOTE limit faculty–student ratios thereby maintaining the quality of instruction and the integrity of the profession. Due to these ratio limitations programs have limited seats requiring highly competitive admissions processes. Hence, there are no graduate OT programs that utilize open admissions process in which all who apply are accepted (AOTA, 2009a; Auriemma, 2002). The growing popularity of the profession has further increased applicant numbers, requiring programs to select the best potential candidates, those who can withstand the rigor of the program and possess the essential core values of the profession (Auriemma, 2002). One

of the complexities of this process is that the measures used in the admissions process must predict academic ability as well as interpersonal characteristics necessary for success in clinical aspects of the educational process, and the profession (Lysaght, Donnelly, & Villeneuve, 2009).

Admission to occupational therapy programs is based on both cognitive and non-cognitive variables in an attempt to select the most qualified applicants for the profession (Auriemma, 2007). While admission to health care professions requires high academic standards, non-cognitive factors such as personality traits and the ability to express compassion and empathy are equally important to success during fieldwork rotations and future success as a clinician (Lyons, Mackenzie, Bore, & Powis, 2006; Tickle-Degnen, 1997). Academically qualified students may be successful in the classroom; however, in addition to cognitive ability “a blend of personality characteristics is necessary for people to be successful in medical studies and eventually in the medical profession” (Lievens, Coetsier, De Fruyt, & de Maeseneer, 2002, p. 1050). Strong admission emphasis on cognitive variables such as grade point average and standardized test scores prevents the elimination of an applicant who is academically prepared but lacks the people skills necessary for compassionate bedside care. Thus, many programs assess non-cognitive variables, primarily through personal interviews, during the admission process to assess applicants’ personality traits and communication skills believed to be necessary for success in the program and profession.

There is lack of consensus within the reviewed literature regarding the use of admission interviews to evaluate non-cognitive variables as part of the admissions process for occupational therapy education. Agho, Mosley, and Williams (1997) found

that the structure, format and scoring used in admission interviews varied significantly among survey respondents. These results are similar to those found in nursing, medicine, and other allied health programs (Gabard, Porzio, Oxford, & Braun, 1997; Guffey, Farris, Aldridge, & Thomas, 2002; Hollman et al., 2008). Interviews require a great amount of faculty time and expense on behalf of the institution without consensus regarding the ability of the interview to identify specific non-cognitive variables (Gabard et al., 1997). Nonetheless, admission committees must somehow identify applicants who can withstand the academic rigor *and* possess the personality traits to provide quality patient care.

In a time where evidence based practice is expected, admission committees must provide evidence that the variables used to make admission decisions are valid and reliable. Committees are faced with numerous applicants who express a sincere desire to become occupational therapists. Nationally, there are 2.2 applicants for every available seat in an OT program (AOTA, 2010b). The American Occupational Therapy Association reports a national rise in applications of 40% from 2007-2008 to 2009-2010 (AOTA, 2010b; AOTA, 2009b). Admission committees must predict those individuals who have the academic ability to withstand the rigor of the program and the humanistic ability to succeed in patient care. The ultimate outcome of the admission process is “to select students who will complete the educational program and go into professional careers, do well in the program, perform credibly in professional practice, and possess the traits of character and ethical values desired of a professional person” (Nayer, 1992, p. 42). Thus, admission committees must ensure that they are making the best decisions on behalf of the student, program, profession, and ultimately the consumers of professional OT services.

The profession of occupational therapy requires a unique blend of skills, thus the “art and science” of OT (N. Herz, personal communication, August 16, 2011). This unique set of skills requires a unique set of admissions criteria that will be able to measure both art, via non-cognitive variables, and science, via cognitive variables. The unique blending of admission variables will aid the profession in continuing to provide patients with highly skilled occupational therapists who have the knowledge to treat and the therapeutic skills to touch the lives of their patients (Lyons et al., 2006; Nayer, 1992). While admission processes currently utilize both cognitive and non-cognitive variables, there is limited research on whether these current variables are valid in the selection of successful occupational therapy students (Auriemma, 2007).

Occupational therapy students must be successful academically and in their pre-licensure requirements, thus the variables utilized when making admissions decisions must be able to predict student success in both the classroom and in clinical practice. Variables that have no relationship to student success confound the admission decision-making process and contribute to the selection of students who may, or may not, be successful. Therefore, it is necessary to identify admission variables that have a relationship with pre-licensure requirements to facilitate admissions committees in selecting those applicants who have greater likelihood for success in graduate level programs in occupational therapy.

Statement of the Problem

Admission to occupational therapy programs is a competitive process with academic programs receiving more qualified applicants than space will allow. Thus, it is imperative for programs to identify the best applicants from all who apply. Program

admission requirements must result in the identification of applicants who can successfully complete the academic rigor of the program and be successful in pre-licensure requirements. Cognitive admission variables, including GPA, have consistently been identified as valid predictors of academic success (Balogun, Karacoloff, & Farina, 1986; Day, 1986; Jewel & Riddle, 2005; Kirchner & Holm, 1997; Kuncel, Hezlett, & Ones 2001; Lucci & Brockway, 1980; Lysaght et al., 2009; Salvatori, 2001; Tan, Meredith & McKenna, 2004). Despite academic success in the classroom, as measured by program GPA, graduates of occupational therapy programs must successfully complete two fieldwork experiences, a department exit examination, and pass a national certification examination prior to applying for a professional license. Thus, it is imperative that admission variables not only identify students who can perform well academically, but are also successful in completing pre-licensure requirements. Regardless of success in the academic program, failure on any one of the pre-licensure requirements may prevent one from receiving the necessary credentials to become a practicing professional.

Research Questions

The purpose of this study was to determine whether select admissions variables could predict graduates' performance on pre-licensure requirements of: fieldwork performance evaluations, scores on the departmental exit examination, and first time pass rate on the National Board for Certification in Occupational Therapy exam. Specifically, the following predictor variables were tested to determine both the degree and nature of the relationship each held with the measures of pre-licensure requirements: collegiate performance (overall GPA, math/science GPA, total credit hours prior to admission, prior

degree, undergraduate major, college attended), GRE performance (verbal, quantitative, and writing scores), non-cognitive variables (previous experience and faculty rating on autobiographical essay). With this purpose in mind, the following questions guided this research study:

1. To what degree can prior collegiate performance predict graduate performance on pre-licensure requirements?
2. To what degree can GRE scores predict performance on pre-licensure requirements?
3. To what degree, can non-cognitive variables (previous related experience and autobiographical essay scores) predict performance on pre-licensure requirements?
4. To what degree can the departmental exit exam and fieldwork performance evaluation predict performance on pre-licensure requirements?

In ongoing efforts to improve admission policies and ensure that the program selects the best applicants from all who apply, the outcomes from this study will have the potential to impact admissions requirements for the host institution's occupational therapy department.

Significance of the Study

The Department of Occupational Therapy at the host institution is the only occupational therapy program within the state's university system. Applications to this OT program were up 36% for fall, 2011 in comparison to the previous year and up 169% from four years ago. Hence, the program has been faced with increasing numbers of applicants, greater than the national rate, for limited seats. Academic programs must

make admission decisions based on a variety of data despite little knowledge of whether data collected during the admissions process is related to programmatic outcomes and graduate success. This study will identify admission variables that provide value for the OT admission committee when making decisions on an applicant's file. Admission data that do not relate to a student's success in the program distracts the committee and may result in the selection of students who may not be successful in completing pre-licensure requirements. Admission variables that add value to the application must be identified to guide admission policy to ensure that the program selects the best applicants from all who apply.

The mission of the institution is specific in that campus programs must prepare healthcare professionals for the state. As the only public graduate occupational therapy program in the state, the host academic institution has a responsibility to ensure that it selects and educates the best possible candidates for the community at large. Based on a thorough literature review there was a lack of information regarding graduate level admissions for occupational therapy; therefore, this study was groundbreaking research for the profession of OT and the host academic program.

Procedures

The purpose of this ex-post facto study was to determine if there were relationships among admission variables and pre-licensure requirements. This study used existing data from a departmental admissions database to determine if a relationship existed between the select admission variables and pre-licensure requirements. Therefore, this study was descriptive research involving quantitative data seeking to better understand the relationships among existing variables (Gall, Gall, & Borg, 2007).

Additionally, this study was a non-experimental group comparison design therefore the data was analyzed descriptively as there was no control group or random sampling (Bailey, 1991; Gall et al., 2007).

Research Design

This study utilized a quantitative approach to the analysis of selected admissions variables for a graduate program in occupational therapy and the relation to student performance in clinical settings. The design was ex post facto, with data consisting of 129 education records of students previously enrolled at a health science university located in the Southeastern United States. Demographic data were also collected to describe the population on which statistical calculations were completed.

Population

The data utilized in this study were contained in an existing database related to students who were previously enrolled in a graduate level occupational therapy program at one public health science university located in the Southeastern part of the United States. Data from students enrolled in the host institution's graduate level OT program from August 2006 to August 2011 were included in this study. Students who were accepted into the program and did not attend, or did not graduate from the program, were excluded from this study.

Procedures

This study analyzed admission and pre-licensure requirement data for students who were enrolled in the academic program from August 2006 to August 2011. This data set represented a group of students who met all graduation requirements and were no longer enrolled at the host institution. Upon securing IRB approval from both Georgia

Southern University, and the host institution, the admissions variables and pre-licensure requirements for the specified enrollment time were extracted from the existing database for research purposes.

Data Collected

Data to be utilized in this study were available in an existing electronic database contained within the occupational therapy department. Admission data were collected and entered into the database at the time of acceptance into the academic program by the host institution's admissions department and the Student Affairs Committee. Thus, all data which were utilized for this study were part of the routine educational record of all students enrolled in the selected OT program.

Data Analysis

The collected data were analyzed to determine if the variability in graduates' (a) fieldwork performance evaluation, (b) scores on the departmental exit examination, and (c) first time performance (pass versus fail) on the NBCOT examination could be predicted by variables collected on the admission application. Descriptive statistics were utilized to describe the population on which the data were obtained. Simple linear regression analysis for continuous independent variables, one-way ANOVA for categorical independent variables and t-tests for dichotomous independent variables were performed to examine the relationship between the independent and dependent variables in this study.

Delimitations

This study focused on the admission variables and pre-licensure requirements at one graduate health science university located in a Southeastern state. The selected

program was housed on a graduate medical campus. Students must be accepted into a graduate healthcare program to attend the institution. Other regional institutions offer undergraduate coursework and may establish their own feeder tracks which transition undergraduate students into graduate occupational therapy programs on campus. Thus, finding other similar programs, on similar graduate healthcare campuses, would have been difficult at best. This study used data from students enrolled between August 2006 and August 2011. Although these dates were justifiable for use in order to study data for groups admitted under similar admission requirements, the limited dates restrict the scope of this study.

Limitations

Given that this investigation was limited to only one institution, and only the OT program within that institution, the results from this study may not be generalized to any other OT program or any other allied health program at that institution. An additional limitation of this study is the selectivity of the admission process based on the number of qualified applicants each year. As admission numbers continually increased, the admission committee was able to scrutinize admission variables which may not have been considered in previous years with limited numbers of applicants. Thus, during the identified time period utilized for this study, admission to the OT program has become a more competitive and selective process.

Assumptions

A major assumption of this study was that no other factors influenced pre-licensure requirements other than those variables present at the time of admission. All subjects in this study enrolled in the exact curriculum, and schedule, during their two-

year attendance in the occupational therapy program, thus controlling for educational influences. Therefore, this investigator assumed that the only differentiating factor which could have influenced pre-licensure requirements were admission variables collected prior to enrollment in the identified OT program.

Definition of Terms

Definition of Terms

Additional Experience

For the purposes of this study this term was used to identify whether an applicant, or a family member, had received rehabilitative services in the past. The services could have been from an occupational therapist, physical therapist, or speech therapist. The experience must have been documented on the admission application.

Cognitive Admission Variable

This term was used to describe those admission variables that were quantifiable in nature. These variables typically include overall GPA and math/science GPA (Guffey, Farris, Aldridge & Thomas, 2002). For the purposes of this study, GRE exam scores, total number of college credit hours, college major, college attended, and whether the applicant had earned a college degree prior to enrolling at the host institution were also included under the term cognitive variable. These variables were objective in nature and did not rely on subjective information often obtained via personal communication and admission interview (Bandiera & Regehr, 2003).

Contact Experience

For the purposes of this study, this term was used to characterize the pre-admission contact an applicant had with patients (including shadowing a healthcare

professional), related healthcare experience, and community service. This information was requested of all applicants on the admissions application; however, no further descriptors or directions were available to describe the differences, if any, between these categories.

Declared College Major

For the purposes of this study, this term was used to identify the academic major of the subject prior to enrollment at the host institution. This information was located on the subject's transcript(s). In the event that the subject had more than one academic transcript, the college that served as the prior college attended, was utilized for the declared college major. College majors were determined *a priori* by the primary investigator based on the most common majors of occupational therapy applicants. However, for data analysis, these majors were categorized according to the college where each major was traditionally housed: College of Education, College of Science, College of Health Science, College of Arts & Sciences, College of Business, Family & Consumer Sciences, College of Public Health, Pre-occupational therapy, and undeclared.

Departmental Exit Exam

This term was used to identify a comprehensive end of program examination, which all occupational therapy students at the host institution must successfully complete prior to graduation. The purpose of the exam was to provide a mechanism for evaluating the extent to which student mastered the educational objectives established by the program (Jedlicka, Mosley, Jaffe, & Kassner, 2004). The exam was developed to be reflective of all domains of practice and program curriculum and to be reflective of the type of higher-level multiple-choice questions found on the NBCOT exam.

Experience Type

For the purposes of this study this term was used to identify whether there was evidence on the subject's application of previous experience with an occupational therapist. Experience type was categorized based on the type and duration of interaction with the OT: none, shadowed, employment or volunteer < 6months, employment or volunteer > 6months. These experiences may be paid or unpaid and must be evident on the admission application.

Fieldwork Performance Evaluation (FWPE)

The American Occupational Therapy Association requires that each student successfully complete two twelve week fieldwork experiences prior to graduating from an accredited occupational therapy program. The universal scoring instrument used to measure student performance on these rotations is the Fieldwork Performance Evaluation (FWPE) (AOTA, 2002b). This measure has seven major subsections: fundamentals of practice, basic tenets, evaluation and screening, intervention, management of occupational therapy services, communication, and professional behaviors. Each subsection contains several items that are scored on a 4-point scale: (4) exceeds standard, (3) meets standard, (2) needs improvement, and (1) unsatisfactory. A total score of 122 or above is necessary for successful completion of each of the two fieldwork experiences.

GRE Score

This term was used to describe a set of test scores derived from an applicant taking the original version of the Graduate Records Examination (GRE). This test is nationally recognized and administered through independent testing facilities. The test has two main subscales, math and verbal, as well as the writing score (ETS, 2009). These

scores are based on standardized norms and are received by the institution directly from the Educational Testing Service. GRE scores must be less than five years old at the time of application to the program according to institutional policy.

Math/Science GPA

This term was used to describe a calculated grade point average based solely on all math and science college coursework attempted. Based on institutional guidelines for graduate level programs, grades received in courses that were repeated are not replaced by the repeat grade. Instead, both grades are calculated into the overall grade point average. Additionally, the institution does not recognize the + or – grading system when calculating grade point averages. Coursework earned at a technical institution must have a course number of 190 or higher to be accepted by graduate admissions at the host educational institution. Remedial courses are not included in this calculation based on institutional guidelines.

National Board for Certification in Occupational Therapy (NBCOT)

This term represents the organization that provides certification of occupational therapy professionals. All graduates of accredited educational programs must pass an initial competency examination administered by NBCOT to receive initial professional credentials (NBCOT, 2011). Professional credentials must be obtained before receiving professional licensure in most states.

National Board for Certification in Occupational Therapy Certification

Examination (NBCOT Exam)

This term was used to describe the certification examination provided by NBCOT that is administered to graduates of accredited programs. This examination must be

successfully completed prior to receiving one's professional credentials. The examination has been developed based on practice analysis to "identify the domains, tasks, knowledge and skills required for occupational therapy practice" (NBCOT, 2009).

Overall GPA

This term was used to describe a calculated grade point average based on all prior college course work attempted. Based on institutional guidelines for graduate level programs, grades received in courses that were repeated are not replaced by the repeat grade. Instead, both grades are calculated into the overall grade point average. Additionally, the institution does not recognize the + or – grading system when calculating grade point averages. Coursework earned at a technical institution must have a course number of 190 or higher to be accepted by graduate admissions at the host educational institution. Remedial courses and courses that are physical education based are not included in this calculation based on institutional guidelines.

Prior Degree

For the purposes of this study, this term was used to identify whether an applicant had earned a college degree prior to enrolling at the host institution. For the purposes of this study, college degree was used to describe any four year degree, or higher, from an institute of higher education. Professional degrees beyond the associate's level were included in this category.

Pre-licensure Requirements

For the purposes of this study, this term was used to identify the set of factors that must be met before a graduate occupational therapy student can receive professional credentials and licensure. A student enrolled in an accredited occupational therapy

program must successfully complete two separate fieldwork rotations in order to be considered for graduation. These fieldwork experiences are separate from the academic institution and academic coursework. Students must also pass the national certification exam administered by NBCOT. Finally, at the host institution, all graduation candidates must successfully complete a comprehensive department exit exam. Each of these three factors must be successfully completed for an occupational therapy student to graduate and receive professional credentials.

Prior College Attended

This term was used to identify the post-secondary institution that the subject attended prior to enrolling in the host institution's occupational therapy program. This categorization was based upon the groupings established by the State University System: research university, regional university, state university, state colleges, and two-year colleges (University System of Georgia, 2010). In the event that a subject attended more than one institution, the Student Affairs Committee assigned the institution in which the subject earned the most transferrable credit hours as the prior college attended. Subjects who attended school out of state were assigned a category of "non-USG institution". Private school transcripts, whether in state or out-of-state were grouped in their own category. Colleges were also categorized based on the Basic Classification of the Carnegie Classification of Institutions of Higher Education (Carnegie Foundation, n.d.).

Total Number of Credit Hours.

This term was used to identify a numerical value that indicated an applicant's total number of college semester credit hours earned. This value included all courses completed prior to enrollment. All applicants must have a minimum of 90 semester hours

prior to enrollment, but there was no limit on the maximum number of hours that could be transferred in. Coursework earned at an in-state technical institution must have a course number of 190 or higher to be accepted by graduate admissions at the host institution. Remedial courses, and physical education courses, were not transferable and therefore not included in this calculation based on institutional guidelines. Courses earned under the quarter system have been converted to semester hours by the host institution's admissions department.

Summary

Due to the rising number of applications to occupational therapy programs, admission committees are faced with tough decisions to select the best applicants from all who apply. Within the seemingly homogenous group of OT programs, Auriemma found that there were 41 different variables used in the admission process. Auriemma's studies (2002; 2007) indicated that the majority of OT programs used a variety of admission criteria with little understanding of the ability of the variables to predict student success. Admission variables which do not have relationships to success in the academic curriculum, or experiential components of the educational process, distract admission committees from making the best decisions for the program.

This study used existing data from one graduate Occupational Therapy program at a health science university to examine if a relationship existed between select admission variables and graduates' fieldwork performance evaluation scores, scores on the departmental exit examination, and first time performance on the NBCOT examination. The results will serve as foundational knowledge for the OT admission committee to understand the relationships between admission variables and student success. This

foundational knowledge is key to making informed decisions for the program, the institution, and the profession.

CHAPTER II

REVIEW OF LITERATURE

Over the past several years, US News and World Reports has ranked occupational therapy as a top career choice (2009). This public acknowledgement of a little known profession has created a surge of graduate program inquiries and applications. The American Occupational Therapy Association's (2010b) data indicates a significant rise in the number of applications to OT programs over the past several years. As a result, admission committees are faced with an increasing number of applications by individuals expressing a sincere desire to become occupational therapists. Although there are 147 accredited OT programs, applicants will find little consistency regarding the admission process and admission variables deemed important for success. A 2007 study by Auriemma found that there were 41 different variables used by OT programs during the admissions process. However, most programs do agree that they are seeking students who have "internal motivation, insight, and self-knowledge" (McEwen & Crawford, 1995, p. 1). Consequently, admission committees must devise an application process that can identify prerequisite admission variables so that programs can select the top candidates to become future occupational therapists (Posthuma & Sommerfreund, 1985).

Admission committees are charged with identifying "individuals who are most likely to master the academic demands of the educational program, who have personal and ethical characteristics that will allow them to perform credibly as health service providers, and who have carefully considered the nature of the professional practice role" (Nayer, 1992, p. 44). Hence, admission committees must make predictive judgments regarding applicants and the presence, or absence, of traits which have been deemed

necessary for success in the program and the profession. In a time where professional practice is mandated to be based on evidence, there is surprisingly little evidence to support the vast array of admission variables used to admit students into graduate occupational therapy programs (Auriemma, 2007).

Allied health professions are involved with the delivery of health or related services pertaining to the identification, evaluation and prevention of diseases and disorders (The Association of Schools of Allied Health Professions, 2011). Allied health professions comprise nearly 60% of the total healthcare workforce and include the professions of dental hygiene, physician assistant, occupational therapy and physical therapy programs (Robert Wood Johnson Foundation, 2011). Schools of Allied Health exist at the college level, as these professions are unique and distinctively different from schools of medicine, dentistry, and nursing. Thus, only literature pertaining to allied health professions has been included in this review. On-line search processes were accessed through Georgia Southern University's Henderson Library and Georgia Health Science University's Greenblatt Library. Key terms used in this search process were: allied health admissions, admission variables, and academic predictors of success.

For the purposes of this literature review graduate admissions processes in allied health education programs has been reviewed. Extensive review of the literature provided numerous admissions variables utilized by occupational therapy departments. Therefore, only those admission variables used by more than 10% of OT programs were considered, based on Auriemma's (2007) study. Literature review results for allied health professions, other than occupational therapy, are included in this review for admission variables that have been identified by Auriemma. Admissions processes for

baccalaureate and graduate level occupational therapy programs have been included in this review due to the lack of information in the literature related to this topic. In addition, no articles have been excluded based on date of publication due to the limited number of studies relating to occupational therapy admissions.

What is Occupational Therapy?

The profession of occupational therapy (OT) is a health care profession dedicated to maximizing one's performance and participation in daily activities. Whereas the term occupation is often assumed to relate to employment and work, occupational therapy more accurately refers to "skills for the job of living" (AOTA, 2010, p. 1). The profession of OT believes that the ability to perform self care tasks, to work or go to school, to participate in leisure activities, and meaningful socializations are important activities which help to define an individual and provide quality to one's life (Georgia Health Sciences University Department of Occupational Therapy, 2011). Occupational therapists use these beliefs regarding participation to facilitate the treatment and recovery processes.

The field of occupational therapy dates back to the late 1800's with its roots in the arts and crafts movement. As American factory workers' overall general health declined, the arts and crafts movement recognized the relationship between physical health, physical exercise, and the environment (Reed, 1993). The arts and crafts movement provided two approaches during the early years of the profession of occupational therapy for treatment of individuals who were hospitalized or institutionalized. The first approach was referred to as ward therapy, or diversional therapy, in which mentally ill patients were simply kept busy during the day. The second approach was referred to as

occupational training and provided individuals opportunities to learn, or relearn, skills necessary to obtain gainful employment. Both approaches demonstrated the profession's foundational belief that patients, who engaged in purposeful activity, or occupation, displayed fewer psychiatric symptoms and less physical ailments than those who were not participating in meaningful tasks (Schwartz, 2003). During this time in history, the professionals were referred to as reconstruction aides with the following purpose:

...to hasten the recovery of the patients...promote contentment and make the atmosphere of these hospitals such that the time spent in convalescence will pass most pleasantly because the minds and hands of the patients are properly occupied in profitable pursuits (Hospital Designated for Reconstruction, as cited in Reed, 1993, p. 31).

The profession of occupational therapy saw a surge in demand following World War I, then again after World War II. The large number of physically and psychologically injured soldiers returning from these wars required occupational therapists to provide treatment. The therapists were responsible for developing programs for soldiers with amputations, burns, head injuries, as well as stress and anxiety disorders that resulted from combat (Reed, 1993). The demand for occupational therapists outweighed supply, thus there was a significant rise in the number of educational programs throughout the country during this time in the profession's history. The profession of occupational therapy achieved military recognition in 1947, which allowed new access to reimbursement for services and federal financial aid for educational training programs. Despite the growth of the profession, occupational therapists during

the post war era were primarily limited to working in the areas of mental health and psychiatry (Schwartz, 2003).

Throughout the middle of the 20th Century, the profession of occupational therapy continued to make small incremental gains towards professional recognition and acceptance as a legitimate therapy. The Vocational Rehabilitation Act amendments of 1943 allowed coverage for medical services including occupational therapy (Reed, 1993). Medicare coverage became a part of the Social Security Act in 1965 and provided inpatient coverage for occupational therapy services; although it would be another twenty-one years before outpatient OT services would be covered under Medicare guidelines (Reed). These legislative acts facilitated the profession to move away from mental health and psychiatry and into other medical models of service delivery.

In 1975 a piece of landmark legislation was passed which changed the profession of occupational therapy. Public Law 94-142, better known as the Education of All Handicapped Children Act, was passed to help ensure free and appropriate education for all children (Case-Smith, 2010). Occupational therapy was included in this act due to the profession's ability to facilitate independence in daily activities, including school related tasks. Current revisions, including the Individuals with Disabilities Education Act (IDEA) and IDEA 2004 revisions have continued to make occupational therapy an essential related service within the school environment. With such recognition of the benefits of occupational therapy, and inclusion as a related service, pediatrics and school system practice currently employ more than 50% of all occupational therapists in the United States (AOTA, 2006).

The profession of occupational therapy continues to evolve to meet the ever changing demands of society. As previously discussed, historically the profession has been associated with medical model service environments, such as hospitals and outpatient clinics, providing treatment to patients. During the past several decades a rise in public awareness towards children with disabilities necessitated the profession to again shift its focus. Therapists moved away from the sterile medical model, to providing nearly half of all OT services in early intervention and school environments. Today, a new trend is emerging among occupational therapists who are currently employed in non-traditional settings. Non-traditional settings may include, but are not limited to: hippotherapy, aquatics, outdoor or wilderness adventure training, driver training, environmental design and virtual rehab. Such diversity among practice settings has allowed occupational therapy to become more widely recognized among professionals and the community. The increase in public awareness of the profession, complied with national recognition such as that by U.S News and World Reports, has resulted in a national increase in occupational therapy educational program admission applications.

Occupational Therapy Education

Occupational therapy education is overseen by the Accreditation Council for Occupational Therapy Education (ACOTE) which has been recognized as the accrediting body for occupational therapy education by the United States Department of Higher Education (USDE) and the Council on Higher Education Accreditation (CHEA) (AOTA, 2007). In order for higher education programs to receive federal funding, or for enrolled students to be eligible for federal student loans, programs must be accredited by an agency recognized by the USDE. Hence, obtaining and maintaining accreditation by

ACOTE is essential for any OT program to be in good standing with the USDE and for enrolled students to qualify for financial aid.

OT accreditation is designed with the “ultimate aim of assuring students of quality education in this profession and assuring patients of appropriate occupational therapy care” (AOTA, 2007). ACOTE accreditation assures quality via a set of standards in which “the rapidly changing and dynamic nature of contemporary health and human services delivery systems requires the occupational therapist to possess basic skills as a direct care provider, consultant, educator, manager, researcher, and advocate for the profession and the consumer” (AOTA, 2009a). A graduate from an ACOTE-accredited master’s-degree-level occupational therapy program must have met the following requirements:

- Have acquired, as a foundation for professional study, a breadth and depth of knowledge in the liberal arts and sciences and an understanding of issues related to diversity;
- Be educated as a generalist with a broad exposure to the delivery models and systems used in settings where occupational therapy is currently practiced and where it is emerging as a service;
- Have achieved entry-level competence through a combination of academic and fieldwork education;
- Be prepared to articulate and apply occupational therapy theory and evidence-based evaluations and interventions to achieve expected outcomes as related to occupation;

- Be prepared to be a lifelong learner and keep current with evidence-based professional practice;
- Uphold the ethical standards, values, and attitudes of the occupational therapy profession;
- Understand the distinct roles and responsibilities of the occupational therapist and occupational therapy assistant in the supervisory process;
- Be prepared to advocate as a professional for the occupational therapy services offered and for the recipients of those services;
- Be prepared to be an effective consumer of the latest research and knowledge bases that support practice and contribute to the growth and dissemination of research and knowledge (AOTA, 2009a).

Occupational therapy graduate programs have an educational and experiential component in order for programs to meet the above standards set forth by ACOTE. Academic standards include coursework in foundational content, basic tenets of the profession, theory, screening evaluation and referral process, intervention, context of services, management, and research (AOTA, 2009a). Academic programs are also expected to address professional ethics, values and responsibilities as they pertain to the therapist's role as a practitioner, educator, researcher, or administrator. Experiential components of OT education are accomplished through a series of fieldwork experiences throughout the curriculum. Fieldwork education is a crucial part of professional preparation and the fieldwork experiences provide the student with the opportunity to carry out professional responsibilities under supervision and for professional role modeling (AOTA, 2009a).

While extensive standards regarding student outcomes have been set forth by the profession, there is little information concerning the admissions criteria programs should use to ensure that applicants are able to meet the academic rigor *and* clinical competencies expected of graduate level OT programs. AOTA (2002) reports the following qualities are useful for the practicing therapist:

Occupational therapists need patience, understanding and compassion when dealing with clients facing health problems. Patience is important because many clients may not show rapid progress and practitioners must be prepared for that challenge. Being understanding and having compassion is also vital when working with clients who have disabilities that require them to undergo extensive and sometimes painful treatment in order to improve their function. And finally, occupational therapy is a field that calls for a certain amount of passion for the beneficial and life-changing work that therapists perform (p. 1).

Such a description of occupational therapy is void of any objective measure of a therapist. Instead, it illustrates the complexity of the many innate factors that constitute an OT. Characteristics and traits which are deemed necessary for success in a profession must be identified during the admissions process. Early identification will help to ensure that those who are accepted are truly those who have the best chance for success in the profession. This ensures a positive outcome for the student, the program, and the profession.

Overview of Admissions Process

The Accreditation Council for Occupational Therapy Education (ACOTE) has published Standard A.3.1, which requires all programs to have “stated admission criteria

that are clearly defined and published and reflective of the demands of the program” (AOTA, 2009a). Individual interpretation of this standard allows programs to differ from one to another in their admission criteria and programmatic expectations. Thus, each individual program must interpret Standard A.3.1 and devise its own set of expectations for what constitutes the essential skills necessary to be successful in their specific educational program. Lack of congruency among the academic programs leaves the profession without a clearly defined set of prerequisite standards.

The lack of information about the efficacy of how we admit students and admission criteria’s ability to predict students’ performance, combined with the increasing number of students applying to occupational therapy programs, results in educational programs having to make increasingly difficult decisions about which applicant to admit when a limited number of spaces are available (Swinehart & Wittman, as cited in Isenburg & Heater, 1994, p. 174).

In addition, lack of congruency among programs makes it difficult to define the essential characteristics deemed necessary for a successful occupational therapy student and future practitioner.

The American Occupational Therapy Association has identified seven core values and attitudes of the profession which may be useful to programs during the admissions process (AOTA, 1993). These seven concepts are considered to be essential to the profession of occupational therapy. These seven concepts are altruism, equality, freedom, justice, dignity, truth, and prudence. AOTA has stated that “mutual commitment to a set of beliefs and principles that govern our practice can provide a basis for clarifying expectations between the recipient and the provider of services”

(1993, p. 3). Hence, these seven concepts provide a foundation for professional practice for the occupational therapist. These key concepts have been identified as being fundamental to the profession; therefore, an assumption can be made that these values must be present in the professional therapist, both current and future.

Analysis of these key concepts indicates that these are not only difficult to define but also difficult to assess in others. Personal traits such as altruism and prudence may not be able to be detected during a student's application process or even during a structured interview. Even more importantly, these innate values cannot easily be taught in a classroom setting, or learned from a text. Successful students, and therapists, embody these core values. At best, occupational therapy educational programs can only build on a solid foundation of pre-existing attributes (Lyons, Mackenzie, Bore, & Powis, 2006). This leaves admission committees with the task of identifying applicants who personify these core philosophies and can withstand the rigor of the educational program, with little evidence to support either the admission variables, or the actual admissions processes.

In 1977 the Carnegie Commission (as cited by Dietrich, 1981) released two reports regarding admission in higher education. The reports outlined criteria which should be considered during the admissions process and include:

Prior scholastic grades and rank in class, test scores (aptitude and achievement), special academic interests and abilities, other special abilities of an affective or psychomotor type, special interests, special demographic/personal identifications such as ethnicity or county of resident, special personal characteristics, contributions to diversity of the student community, potential contribution to the

profession, contribution to the identity of the institution and contribution to the political, economic, or community needs of the professional program (as cited by Dietrich, 1981, p. 226).

This list of criteria contains ambiguous variables, which would be difficult, at best, to evaluate and assess during the admissions process. Thus, further illustrating the complexity of the task presented before admission committees to select students for their programs. Consumers of services, accrediting bodies, and governmental agencies continue to insist that the admission processes used are selecting the best applicants, and are objective, equitable and humane (Dietrich, 1981). During this period of increasing accountability in health care, educators are equally accountable to the public regarding the provision of health care education and those who are selected to become the future of healthcare in America.

Graduate programs use a combination of subjective and objective methods to make the best admission decisions possible. A recent study by Auriemma (2007) indicated that there are 41 different admissions variables used among the responding OT programs (N= 69) with the average program using 5.7 variables. While there is a “large body of evidence in favor of mechanical predictors...virtually all graduate programs rely on largely clinical combinations of quantitative and qualitative information” (Kuncel, Hezlett, & Ones, 2001, p. 176). While this combination of cognitive and non-cognitive factors is believed to be superior, subjectivity over the qualitative information raises questions regarding the validity of admissions processes. Cognitive and non-cognitive variables must be defined and effectively combined to select students “fairly and

objectively without compromising the quality, standards, and integrity of the selection process” (Agho, Mosley, & Williams, 1999, p. 13).

Cognitive Variables

Cognitive variable is a term used to describe admission variables that relate to a student’s academic record and academic ability. Cognitive variables are quantitative in nature and are relatively consistent in interpretation throughout the education system. Prior academic performance and standardized test scores are the only two cognitive admission variables used by occupational therapy programs according to Auriemma’s studies (2002, 2007). Prior academic performance is most often reported as grade point average (GPA); however, some programs may also consider GPA based on a specific set of prerequisite courses and/or a GPA calculated solely on math and science courses. Auriemma’s (2007) study indicates that 100% of OT programs use GPA and 41% of programs consider the applicant’s prerequisite course GPA in the admissions process.

Grade Point Average (GPA)

The use of GPA to predict future academic, and clinical, performance has been the most researched admission variable in the identified literature. Objective variables, such as GPA, are noted throughout the literature to be effective in predicting academic success (Auriemma, 2007). Previous academic course work, as measured by GPA, has been shown to be the best predictor of academic performance in physical therapy curriculums and when combined with the admission’s essay accounted for 51% of the variance in GPA (N=83) (Balogun, 1986; Balogun, Karacoloff & Farina, 1986; McGinnis, 1984; Salvatori, 2001). Balogun, Karacoloff & Farina (1986) further determined that GPA was the most powerful predictor of academic performance, over

standardized test scores, letters of recommendation or interview scores, in a baccalaureate level physical therapy program.

Other allied health professions have also looked at the use of GPA and its relation to student success. A study of occupational therapy students found that a student's prior GPA has a strong correlation to the OT program GPA (Vargo, Madill, & Davidson, 1986). Correspondingly, Downey, Collins and Browning (2002) found that prerequisite GPA was the best predictor of success on the dental hygiene board examination. While GPA appears to have the ability to predict academic performance there is little evidence supporting the relationship of GPA to clinical performance or entry-level competency (Best, 1994; Kirchner & Holm, 1997; Mann & Banasiak, 1985).

Occupational therapy education, like many other healthcare professions, requires successful clinical rotations, as an essential component to the educational process. Admission variables used in the decision making process must be able to predict clinical success in addition to classroom success. While GPA is the most used admission variable, and the most weighted variable in the admission process, there is minimal evidence relating academic GPA to success in the clinical environment in allied health professions. A study by Watson, Barnes & Williamson (2000) found that clinical grades for physical therapy students could not be predicted from academic grades in the physical therapy program. The majority of studies in occupational therapy support these findings with low and often insignificant correlations between academic performance and fieldwork ratings (Best, 1994; Katz & Mosey, 1980; Mann & Banasiak, 1985). Conversely, Tan, Meredith, and McKenna (2002) found GPA in a bachelor's level OT program to positively relate to clinical performance ($p < .01$). The authors of the study

noted that the educational program recently underwent a curriculum shift to focus on problem based learning; thus, the “students’ GPA might be more reflective of clinical competence which translated into better clinical performance” (p. 31). The authors further concluded that students who perform well academically tended to perform better clinically.

Academic programs, including occupational therapy, may choose to look at specific course, or prerequisite, GPA rather than one’s overall GPA. Auriemma’s 2007 study indicated that 41% of OT programs consider prerequisite GPA in the admissions process. Most studies on this topic have been grounded in medical programs, and have found that “undergraduate coursework does not influence academic performance in subsequent similar courses” (Lysaght et al., 2009). Many studies in the medical literature have found there to be no relationship between premedical coursework and performance in medical school and that preadmission coursework in courses with logical associations to the curriculum was not found to impact program grades in occupational therapy curricula (Lysaght et al.). Lysaght et al. (2009) further noted that “preadmission course preparation and academic performance in related areas of the curriculum yielded little evidence of requiring specific courses as prerequisites” (p. 45).

Despite the evidence to support the use of GPA to predict future success, some caution against over emphasis of GPA in the admission process. One fear is that high achieving students may not be internally driven for personal advancement, rather these students may be excessively motivated by external factors such as grades (McEwen & Crawford, 1995). Relying solely on GPA prevents any consideration of whether all institutions, all courses, and all grades are inherently equivalent to one another. A strong

objective admissions process overlooks any leeway for inflated grades, or rigorous institutions. An additional consequence of relying solely on academic ability is the inability to exclude individuals with undesirable traits (Lyons et al., 2006). In people professions, such as health care, having a wealth of knowledge is not sufficient for success. Simply having knowledge does not necessarily indicate the ability to apply that knowledge, which requires problem solving and mental flexibility (Lyons). Rigorous adherence to GPA in the admissions process does not provide opportunities to determine the presence, or absence, of problem solving or mental flexibility, both of which are essential to professional success. Skillful practitioners have mastered the art and science of their discipline, demonstrating professional behaviors such as communication, problem solving, and empathy. Skills such as these are explicitly noted in the core values of the profession of occupational therapy. Therefore, if these skills are to be possessed by occupational therapy graduates, then admissions processes must be able to objectively and reliably identify them in applicants (Lyons).

Standardized Test Scores

In addition to GPA, standardized test scores are the only other cognitive, and objective, variable utilized in the admissions process. Standardized tests are considered beneficial to the admissions process as the scores can be used as “equalizers to evaluate applicants with identical academic records who are from institutions of vastly different quality” (Dietrich, 1981, p. 228). Standardized test results are also resistant to the national trend towards grade inflation found in higher education. Several standardized instruments are noted in the reviewed literature as they relate to occupational therapy program admissions. The GRE is a standardized instrument used to assess “verbal

reasoning, quantitative reasoning, and critical thinking and analytical writing skills” (Educational Testing Services, 2009). The Medical College Admission Test (MCAT) is widely used to aide in the selection of health professionals; however, the use is largely limited to medical school entrance and not allied health professions (Salvatori, 2001). Two additional tests, The Allied Health Professions Admissions Test (AHPAT) and the Health Occupations Aptitude Examination (HOAE) are cited in allied health literature but are not used in occupational therapy admissions.

Auriemma’s 2001-2002 survey of admission variables found that just 33% of OT programs considered standardized test scores in their admissions process; however, specific names of the tests were not provided. It is important to note that there are complex factors surrounding standardized tests in OT admissions, which potentially skewed the reported use of test scores. At the time of Auriemma’s study, OT programs did not admit freshman or sophomores; therefore, applicants had already completed a minimum of two years of undergraduate course work and were often majoring in pre-OT. Therefore, it is possible that programs did not consider standardized test scores, such as the Scholastic Aptitude Test (SAT), as the applicants had already been admitted to college. Programs could reasonably assume that all applicants had SAT scores that met the criteria of the affiliated institution. Since 2007, all OT programs have moved to the graduate level where the Graduate Records Examination (GRE) may be required. Because the transition from bachelor programs to master’s degree occurred in 2007, Auriemma’s study did not capture standardized test requirements, such as the GRE, which is a typical requirement to enter graduate programs. Thus, it is likely that these

numbers have increased due to the fact that all OT programs are now graduate level programs.

The Scholastic Aptitude Test (SAT) is a globally recognized college admissions test that captures a student's knowledge in critical reading, writing, and math (Collegeboard, 2011). These domains reflect knowledge acquired during secondary schooling, which is considered necessary for success in college. Collegeboard reports that SAT scores combined with high school GPA are the best predictors of academic success (2011). The SAT is traditionally used by schools to make decisions regarding undergraduate academic admissions. Platt, Turocy, and McGlumphy (2001) found the SAT-Verbal to be predictive of programmatic GPA in a limited sample of occupational and physical therapy students. Since 2007, the profession of occupational therapy has mandated graduate level education; consequently, traditional tests used in undergraduate admissions are no longer applicable to the field of OT.

Graduate Records Examination (GRE). The GRE is the most universally used standardized instrument for graduate school admissions and is designed to predict the scholastic performance of graduate students (Kuncel et al., 2001). The GRE was created in the 1940s to measure "basic developed abilities relevant to performance in graduate studies" (Briel, O'Neill, & Scheuneman, 1993, p.1). Original versions of the GRE were subdivided into sections: verbal (GRE-V), analytical (GRE-A) and quantitative (GRE-Q). The GRE-V section contains analogy, antonym, sentence completion, and reading comprehension problems. The GRE-A contained measures of analytical reasoning and logical reasoning. The quantitative section, GRE-Q, "is composed of discrete quantitative, quantitative comparisons, and data interpretation problems" (Kuncel et al.,

2001). While subject subtests are available, many institutions, including the Department of Occupational Therapy at Georgia Health Sciences University only require the general sections.

The GRE is a valid measure of general cognitive ability and can be used to help predict general performance in an academic setting (Hunter & Hunter, 1984). Due to the widespread use of the GRE in academia, numerous studies have been conducted to validate use of the GRE. Study results have been inconsistent in predicting graduate school success across programs and disciplines. Graduate school performance is said to be multidimensional consisting of declarative knowledge, procedural knowledge, and motivation (Reilly, 1974; Kuncel et al., 2001). While the GRE subtests, GRE-V and GRE-Q, provide information on the declarative and procedural knowledge that is essential to graduate school, they do not measure a student's interests or motivation. Instead, Kuncel et al. (2001) recommend interest inventories or letters of intent as measures to more accurately identify a graduate student's motivation rather than GRE scores. Elements of graduate school success that are related to interests, independence, motivation, and personality may be better predictors of the persistence and drive necessary for graduate school success in allied health professions (Kuncel et al., 2001).

A comprehensive meta-analysis found that GRE-V, GRE-Q, GRE-A and subject tests were valid predictors of graduate grade point average (GGPA), 1st year GGPA, faculty ratings, and comprehensive examination scores for graduate students from multiple disciplines (N= 82,659) (Kuncel et al., 2001). The GRE-V tests the student's "ability to analyze and evaluate written material and synthesize information obtained from it; analyze relationships among component parts of sentences and recognizes

relationships between words and concepts” (Jewell & Riddle, 2005, p.20). Jewell and Riddle found that students with low GRE-V had greater difficulty than their peers processing information included in written examinations. Kirchner and Holm (1997) found the GRE to be predictive of program GPA ($p=.05$) for a limited sample of 75 students enrolled in a master’s in occupational therapy program at the University of Puget Sound. The GRE-A score was a significant predictor of program GPA and contributed significantly to GPA variance for a sample of physical therapy students (Day, 1986). When combined with pre-admission GPA, the GRE-A accounted for 24% of the variance in program GPA for the physical therapy students in Day’s study. Thieman, Weddle and Moore (2003) found GRE scores, coded by faculty on a 6 point scale, to be positively correlated with professional GPA.

Since the GRE-V assesses a student’s ability to analyze and synthesize information from written material, students who did not score well on this may consequently have difficulty with analysis and synthesis of material on board examinations (Hollman et al., 2008; Jewell & Riddle, 2005). Hollman et al. (2008) found that physical therapy students who scored below the 20th percentile on the GRE-V scores were six times more likely to fail the national board examination. Physical therapy students who scored below 410 on the GRE-V were more likely to have prerequisite GPA’s below 3.0 (Jewell & Riddle, 2005). Utzman, Riddle and Jewell (2007) studied 20 physical therapy programs and determined that undergraduate GPA, GRE-V and GRE-Q discriminated among students ($N=3,582$) who did, and did not, have academic difficulty. Despite the potential to predict academic success, the Pew Health Professions Committee, along with the Carnegie Commission, recognize the importance of attitudes

and values in the delivery of health care services (Guffey, Farris, Aldridge, & Thomas, 2002). These essential traits cannot be effectively measured by cognitive admission variables, thus admission teams must employ other means to measure such crucial skills for healthcare professionals.

Non-cognitive Variables

In contrast to the previously discussed cognitive variables, non-cognitive variables are less objective and often are measured based on the importance placed on them by a particular program, or profession. Programs may employ the use of non-cognitive variables, which reflect the unique values and mission of their program (Auriemma, 2007). Non-cognitive variables are considered to be as important as one's cognitive abilities, especially in clinical aspects of health care education (Bandiera & Regehr, 2003). A study of medical students found a stronger association between non-cognitive variables and clinical success than with GPA (Murden et al., 1977). Of the 41 admission variables used by occupational therapy programs, 38 (92.7%) are considered to be non-cognitive (Auriemma, 2007). Likewise, the majority of the criteria presented by the Carnegie Commission were considered to be non-cognitive. Examples of non-cognitive variables used by occupational therapy programs for admissions include personality tests, interviews, letters of recommendation, and previous experience.

Personality Tests

Due to the importance within the profession of occupational therapy on values and interpersonal skills, it should be no surprise that several studies have attempted to look at the use of personality tests in the admission's process. Schmalz, Rahr, and Allen (1990) found The Otis Quick-Scoring Mental Abilities Test to correlate with academic

success for occupational therapy and physician assistant students. Tan et al. (2002) examined anxiety in occupational therapy students, as measured by The Sixteen Personality Factor Questionnaire (16PF), to predict clinical performance. This study found that students with higher trait anxiety were rated higher than their peers in communication and conducting assessments in the clinical components of their occupational therapy program.

Tickle-Degnen (1998) conducted a multivariate study of personality traits to predict clinical performance for OT students. The NEO [Neuroticism, Extraversion, and Openness] Five Factor Inventory, Affective Communication Test, the Self-Monitoring Scale, the Face and Body Profile of Nonverbal Sensitivity, and the Interpersonal Reactivity Index were all administered during the first semester of a two year OT program. Results indicated that personal and interpersonal attributes measured by these standardized instruments upon entry into the program were highly predictive of clinical performance two years later (Tickle-Degnen). Results on these standardized assessments were sensitive to traits that were scored higher by practice setting. Varying institutional cultures, types of patients, and roles of occupational therapy may require different sets of attributes from one setting to another (Tickle-Degnen). While much of the literature considers positive outcomes, this study identified personality traits consistent among students who were not successful in their clinical rotations (n=5). The battery of assessments identified insensitivity to others, disagreeable, and resistant to modifying social responses according to others' social cues as traits that were "high-risk" for clinical failure (Tickle-Degnen). These findings closely mirror those results by Lyons et al. (2001) indicating similar characteristics to be undesirable in the professional OT.

Guffey, Farris, Aldridge, and Thomas (2002) found that that the Non-Cognitive Questionnaire-Revised was not a significant predictor of success on the physical therapy licensing exam for a sample cohort of 62 students. While there is logical ability of personality assessments to identify traits as part of the admissions process, there has yet to be agreement on the exact personality traits considered necessary in the profession of occupational therapy. Coupled with the extensive time and cost to administer and score personality assessments, this variable may not be effective in the admissions process.

Letters of Recommendation

Letters of recommendation, due to the lack of objective scoring and interpretation, are considered to be non-cognitive variables in the admissions process. Letters of recommendation were found to be the second most commonly used admission variable, collected by 82% of programs yet were the least weighted of all variables (Auriemma, 2007). The letter of recommendation can provide admission committees with valuable information regarding personal characteristics and other non-cognitive traits that could lead to success in the profession (McGinnis, 1984). Despite their popularity as an admission variable, there is limited support for the use of these letters as an admission tool. Kirchner & Holm (1997) looked at the predictive value of GPA, test scores, letters of references, and written essays to predict student grades in OT courses. Of these variables collected by OT programs, the letters of references were the only variable found to not be significant in predicting OT student grade point averages (Kirchner & Holm, 1997).

Despite the widespread use of letters of recommendation in OT admissions, numerous issues compromise the integrity of the documents (Balogunn, Karacoloff, &

Farina, 1986; Dietrich, 1981; McGinnis, 1984). The Family Educational Rights and Privacy Act (FERPA) helps protect the privacy of student education records and provides the right for a student to review their education records, including admissions files and all supporting documents. Thus, letters of recommendation are no longer considered to be confidential as applicants may request a review of their file at any time. Because letters of recommendation are no longer confidential, there seems to be a trend towards references “writing only good letters or declining to write them at all” (Dietrich, 1981, p. 230). Balogun, Karacoloff, and Farina (1986) state that the low predictive strength of letters of recommendation from clinical therapists may be attributed to FERPA open records and the evaluators concerns with writing objective letters. Hence, letters of recommendation have lost their credibility in the admission’s process.

Interview

Although widely utilized in the admissions process, there is little consistency between the format and structure of the admissions interview. This inconsistency, and subjectivity, necessitates that the interview be categorized as a non-cognitive variable. Within the profession of OT, 29% of programs report using a group interview and 26% use a one-on-one interview during the admissions process (Auriemma, 2007). A study completed 10 years earlier reported that 48% of programs used the interview as part of the admissions process (Agho, Mosely, & Smith-Paul, 1997). The decrease in the number of programs using the interview over the decade may be attributed to one of the criticism of the interview. Both studies cited that the programs who do not use the interview have chosen so based on the amount of time and energy associated with the interview process. On a survey by Agho et al. (1997), 58.3% of faculty agreed that the

interview placed too much burden on faculty members and 91.6% agreed that the interview placed too much burden on students. An additional criticism is the exorbitant amount of faculty time dedicated to the interview. While the exact number of hours varies based on the number of interviewers and interviewees, it is obvious that the interview process is time consuming. U.S. medical schools estimated that \$5.5 million dollars in faculty salaries was spent conducting interviews during the 1988-1989 academic year (Edwards, Johnson, & Molidor, 1990). For the occupational therapy program at Georgia Health Science University, an estimated 225 faculty hours are spent conducting interviews each year.

Studies report that interviews are not predictive of success in the academic program; rather, they are better at identifying applicants with skills in the area of rapport building in a professional pressured atmosphere (Posthuma & Noh, 1990; Shepard, 1980). While these skills may not be critical for the academic setting, interpersonal relationships, communication, and rapport building are essential to professional success in the clinic. A 2006 study by Lyons et al. surveyed 175 Australian Occupational Therapists to identify skills and attributes deemed necessary for the professional OT. The results clearly indicate that the ability to relate to others, problem-solving skills, organization, and respect for others were considered essential traits for OT. Again, if such inherent qualities are necessary for professional practice then they must be successfully identified during the admissions process. Otherwise, “inadequate student selection procedures, despite the subsequent education program, might result in graduates who are not suited for the realities of professional practice” (Lyons et al.).

Admissions interviews are criticized for their great potential to be subjective in nature and lack inter-rater reliability (Salvatori, 2001). Elam and Andrykowski (1991) found that “potentially significant interviewer variables” (p. 166) including social traits, personality traits, demographic preferences, or educational biases, influenced scoring of the applicant. Interviews are noted for a type of bias known as “similar to me” (Gabard, et al., 1997). The result is the selection of interviewees who are vastly similar to the interviewer. First impressions made during the interview, including clothing, jewelry, and hairstyle have been found as reasons to accept or reject an individual. Additional bias may be related to demographics, accents, and cognitive abilities, despite these attributes not being measured during the interview process (Gabard et al., 1997). Pre-interview impressions based on a review of academic ability have been found to have a strong impact on the scoring of admission interviews (Gabard et al., 1997; Macan & Dipboye, 1990; Shaw, Martz, Lancaster, & Sade, 1995). Interviewers have also expressed perceptions of being punished for accepting applicants who did not perform well, thus the initial impression may invoke overly cautious scoring (Macan & Dipboye, 1990).

Despite the potential for subjectivity, interviews may be successful in predicting student performance in occupational therapy fieldwork (Posthuma & Noh, 1990). Lysaught et al. (2009) found that interview scores did predict grades in therapeutic communication coursework, which suggests that interviews can, in fact, detect existing interpersonal skills. However, the literature lacks agreement on whether the interview can directly predict academic, or clinical success (Salvatori, 2001). While the literature provides little evidence for the use of interviews as a predictor of academic, or clinical,

success, the interview is the second highest weighted admission variable used by OT programs (Auriemma, 2002).

Personal Essay

There are two types of writing samples discussed in the literature that are utilized as part of the admission process to OT programs. The autobiographical sketch (30%) and spontaneous writing sample (38%) were among the top variables based on Auriemma's 2007 results. Prepared writing samples, whether submitted with the application or brought to an interview, have been noted to be an "unreliable method for measuring students' writing and academic abilities" (Auriemma, 2002, p. 2). A further confounding factor with this variable is the lack of ability to "ascertain an essay's true authorship" (Youdas, 1992). Nayer (1992) found that the autobiographical sketch did not have statistical predictive ability on the future performance of the applicant in physiotherapy students. Isenburg and Heater (1994) report that while prepared writing samples did not predict program performance, they did provide insight into one's thought process and critical thinking abilities, both of which are critical for healthcare professionals. Kirchner and Holm (1997) found that an admission essay, scored on nine specific criteria, did predict program GPA for a limited sample of occupational therapy students. Other studies found that the spontaneous sample, when scored on grammar, style, content and organization was predictive of student success (Roehrig, 1990).

Previous Experience

Due to the uniqueness of allied health professions, many programs require previous experience in the field prior to admission. A survey of allied health programs (N=188) indicated that 79% require some form of prior experience (Scott et al., 1995).

While Auriemma's (2007) study reports that 38% of occupational therapy programs report this as a requirement, there is little information in the reviewed literature about the relationship, if any, to academic or clinical success. While the term 'previous experience' appears on an application, the exact meaning of the term may vary from program to program. Shadowing, volunteer hours, paid employment and community experience are terms used synonymously with previous experience in the reviewed literature. Previous experience, regardless of the term used, may contribute to students making more informed career choices and ultimately applicants who are more committed to the chosen field (Stoecker, 1990).

Despite the logical association between experience and success, few studies have included this as a variable. McGinnis (1984) found insignificant results within physical therapy but attributed this to confusion between the terms: volunteer, shadowing, and paid employment. McGinnis did determine that experience cannot be substituted for inadequate grades. The most extensive study on this topic comes from outside allied health, in the field of dental medicine. Due to the great paucity of studies on this topic, this study is worthy of including in this review. Mentasti and Thibodeau (2006) found that involvement in extracurricular activities prior to admission could be "reflective of an applicant's nonacademic interests, leadership potential and long-term commitment" (p. 1049). The authors went on to state that participation could be an "important indicator of social awareness, interpersonal skills, and dedication to the community or humanity" (p. 1049). Such traits are clearly valuable skills for healthcare professionals and have been alluded to by the American Occupational Therapy Association and Carnegie Commission on Higher Education. Mentasti and Thibodeau (2006) concluded that the best

academically qualified applicants had few shadowing hours and greater than average involvement in volunteer and extracurricular activities. These results warrant close consideration within allied health and the profession of occupational therapy since these fields are known to be altruistic and philanthropic.

Conclusion

Despite the lack of unified admission processes across occupational therapy programs, most programs indicate the use of a variety of admission variables. The average program considers 5.7 variables in the admission process, although individual numbers range from one variable to an overwhelming 12 variables (Auriemma, 2007). Cognitive variables used by OT programs include GPA and standardized test scores. GPA was consistently found to be a predictor of academic performance, across disciplines including OT. Results are not consistent regarding the use of GPA to predict clinical components of the occupational therapy curriculum, which are essential to occupational therapy education. While GRE scores are predictors of graduate school success, the results are not as consistent or significant as those from studies of GPA and academic success. Thus, further research is needed to determine whether the GRE, and the cost associated with it, adds any value to the admissions packet.

Non-cognitive variables are the most widely debated component of the admission process due to lack of objective scoring and great opportunity for subjectivity. Despite controversy, 92.7% of admission methods found by Auriemma (2007) fall under this category. Non-cognitive variables are typically obtained via a personal interview that requires a great amount of time and energy on behalf of the faculty, along with costly travel on behalf of the applicant.

Currently, the Board of Regents (BoR) for the University System of Georgia (USG) does not prescribe, or suggest, any admission criteria for graduate programs in Georgia (C. Loftus, personal communication, February 23, 2010; USG, 2010). Thus, graduate programs such as Georgia Health Science University's Occupational Therapy program must work autonomously, and with little supporting evidence, to develop admissions guidelines for their programs to ensure that they select the best applicants from all who apply.

As the profession of occupational therapy moves itself away from the biomedical approach to patient care, humanistic care in a person-centered system is becoming fundamental to practice (Lyons et al., 2006). Knowledge is no longer enough; rather, the profession, the health care community, and the consumers of health care services expect a certain level of professional expertise, professional behaviors, and attitudes. The American Occupational Therapy Association has set forth core philosophies outlining those behaviors and attitudes deemed necessary by the profession: altruism, equality, freedom, justice, dignity, truth, and prudence yet has provided no guidelines for admission committees for the selection of students who can be successful in both the academic and clinical components of the occupational therapy curriculum.

In a time where evidence based practice is expected, admission committees must provide evidence that the variables used to make admission decisions are valid and reliable. Committees are faced with numerous applicants who express a sincere desire to become occupational therapists. Current rankings as a top career by US News and World Reports have increased program applications, making slots in OT programs highly sought-after. Admission committees must select the best applicants in an attempt to

predict those individuals who have the academic ability to withstand the rigor of the program and the humanistic ability to succeed in patient care. Academic health programs must ensure that the processes they employ when selecting healthcare workers of tomorrow are objective, equitable, and humane. Thus, admission committees must be sure that they are making the best decisions on behalf of the student, program, profession, and ultimately the consumers of professional services.

As the only public occupational therapy program in the state, the Department of Occupational Therapy at Georgia Health Sciences University has a responsibility to the Board of Regents, the citizens of Georgia, and the consumers of healthcare services. The Department cannot continue to utilize admission variables at face value with no evidence that the variables used to select students, do in fact, identify those applicants who will make the best occupational therapists. Admission variables utilized to select students that have not been examined for their ability to discriminate among those who have the best likelihood of success are useless in the decision making process. Thus, without studying whether the admission variables used are related to program outcomes, the OT department is unable to truly select the best applicants from all who apply. Likewise, it is inappropriate for the OT department to generalize results from any other studies, as the literature review did not produce any studies looking at the admission variables utilized at GHSU and programmatic outcomes of graduate level occupational therapy students. Therefore, these variables must be studied to determine if there is a relationship between the admission variables collected as part of the admission process to the Occupational Therapy Department at GHSU and programmatic outcomes of exit examination scores, fieldwork performance scores, and first time pass rate on national licensing examination.

CHAPTER III

METHOD

Admission to occupational therapy programs is a competitive process with academic programs receiving more qualified applicants than space will allow. Thus, it is imperative for programs to identify the best applicants from all who apply. Program admission requirements must result in the identification of applicants who can successfully complete the academic rigor of the program and be successful in pre-licensure requirements. Cognitive admission variables, including GPA, have consistently been identified as valid predictors of academic success (Balogun, Karacoloff, & Farina, 1986; Day, 1986; Jewel & Riddle, 2005; Kirchner & Holm, 1997; Kuncel, Hezlett, & Ones 2001; Lucci & Brockway, 1980; Lysaght et al., 2009; Salvatori, 2001; Tan, Meredith & McKenna, 2004). Despite academic success in the classroom as measured by program GPA, graduates of Georgia Health Science University's occupational therapy program must successfully complete two fieldwork experiences, a department exit examination, and pass a national certification examination prior to applying for a professional license. Thus, it is imperative that the admission variables used by the program not only identify students who can perform well academically, but are also successful in completing these pre-licensure requirements. Regardless of success in the academic program, failure on any one of the pre-licensure requirements may prevent one from receiving the necessary credentials to become a practicing professional.

Research Questions

The purpose of this study was to determine whether select admissions variables could predict graduates' performance on the pre-licensure requirements of: fieldwork

performance evaluation, scores on the departmental exit examination, and first time performance on the National Board for Certification in Occupational Therapy exam. With this purpose in mind, the following questions guided this research study:

1. To what degree can prior collegiate performance predict graduate performance on pre-licensure requirements?
2. To what degree can GRE scores predict performance on pre-licensure requirements?
3. To what degree, can non-cognitive variables (previous related experience and autobiographical essay scores) predict performance on pre-licensure requirements?
4. To what degree can the departmental exit exam and fieldwork performance evaluation predict performance on pre-licensure requirements?

Research Design

The design of this study was ex post facto, with data consisting of 129 educational records of students previously enrolled at a health science university located in the Southeastern United States. Two major portions of the educational record were collected and analyzed for this study. All admission variables, including demographic data, were obtained from the graduate school application. Admission variables including overall GPA, math/science GPA, GRE scores, number of college credits hours, prior college attended, and college major were collected on each subject. Demographic data consisting of age at the time of application and gender were collected to describe the population on which statistical calculations were completed. Pre-licensure requirements including fieldwork evaluation scores, departmental exit scores, and first time pass rate on national

certification examination scores were also collected from existing educational records as part of each subject's recorded data.

Sample

The data utilized in this study were contained in an existing database associated with students who enrolled in a graduate level occupational therapy program at one health science university located in the Southeastern part of the United States. The institution is the 13th oldest in the United States and serves as the only public medical campus for the state. The university currently has 2,442 students within its five colleges: the Medical College, Allied Health Sciences, Dental Medicine, Graduate Studies and Nursing (GHSU, 2011). The university reports 62.3% of students being classified as state residents at the time of application. The College of Allied Health offers 17 degree options, including occupational therapy, and enrolls approximately 25% of the total student body (GHSU, 2011).

The OT program utilized for this study is the only public OT program within the university system, thus the program receives numerous applications from throughout the state. Applicants to the OT program may come from any of the 35 public colleges and universities within the state, or may apply from any other accredited institution. For the purposes of this study, data from students enrolled in the host institution's graduate level OT program from August 2006 to August 2011 were included. In addition to meeting the cognitive requirements for the program, each applicant participated in a mandatory interview session. Final decisions for admission were made by the Student Affairs Committee based on cognitive admission variables, as well as the student interview process. Thus, the data used in this study were from students who were admitted to the

occupational therapy program based on cognitive admission variables and non-cognitive variables.

All students in this study were admitted under the following published admission requirements:

- A grade point average of at least 3.0 (on a 4.0 scale) on all previous college work and an average of at least 2.5 on math and science courses are required for consideration.
- A minimum score of 900 (combined verbal and quantitative) is required on the Graduate Record Examination (GRE).
- Applicants do not need to complete a baccalaureate degree prior to admission into the OT program. Prior to enrollment, the applicant must have completed a minimum of 90 prerequisite hours at another accredited college.
- Three letters of recommendation from individuals who can rate your academic and work skills.
- Volunteer hours are strongly recommended.
- Interviews are by invitation only and will be factored into the final committee decision.
- Applicants whose first language is not English must submit official TOEFL scores. A minimum score of 213 on the computer-based exam or 550 on the paper exam is required for admission consideration (<http://www.georgiahealth.edu/sah/ot/admissions.html# requirements>)

Prior to Fall 2006, applicants to this program were considered with just 60 semester credit hours, therefore this group was not considered for inclusion in this study. Students

who were accepted into the program and did not attend, or did not graduate from the program were excluded from this study. There were no other exclusionary criteria for this study.

This study used existing admissions data for students who were accepted and matriculated in the academic program during the specified time period. Educational privacy regulations through Family Educational Rights and Privacy Act (FERPA) limit access to students' educational records (US Department of Education, 2011). FERPA permits access to these records, while maintaining confidentiality guidelines, for "organizations conducting certain studies for or on behalf of the school" (US Department of Education, 2011, Section 99.31). As this study will provide information to guide admission policies and processes at the host academic institution, access to these records conformed to FERPA standards. Any information regarding personal identities has been removed from the records; thus, confidentiality of individual students has been maintained. The sample size for this study was 129 existing student records using all available data from the host institution.

Instruments

In addition to successful completion of academic coursework, occupational therapy students must complete additional requirements prior to obtaining professional licensure. External measures of competency provide unbiased feedback regarding individual student performance and can be utilized as an external assessment of programmatic outcomes. This study used the results from three separate measurements of student competency for data analysis. The Accreditation Council for Occupational Therapy Education (ACOTE) requires completion of two level II fieldwork rotations.

Student performance on these rotations is documented by AOTA's Fieldwork Performance Evaluation (FWPE). The FWPE is completed by the clinical supervisor who must be a licensed occupational therapist. Students receive one FWPE per rotation. In addition to fieldwork, OT students must successfully pass the National Board for Certification in Occupational Therapy (NBCOT) examination. This exam is constructed to measure entry-level knowledge and skills based on clinical practice domains (NBCOT, 2011). Occupational therapy students at Georgia Health Science University must complete a third measure of competency in the form of a 250-question departmental exit exam prior to graduation from the program.

Fieldwork Performance Evaluation

The profession of occupational therapy considers fieldwork experiences to be an essential component of one's education. The role of fieldwork is to help students develop the skills necessary for success and also to socialize them into the profession and for them to "become ethical and competent occupational therapists who engage in daily practice that reflects the core values and beliefs of the profession" (Atler, 2003, p. 3). Professional fieldwork is formally guided by ACOTE's standard B.10.0, which states

Fieldwork education is a crucial part of professional preparation and is best integrated as a component of the curriculum design. Fieldwork experiences should be implemented and evaluated for their effectiveness by the educational institution. The experience should provide the student with the opportunity to carry out professional responsibilities under supervision and for professional role modeling. The academic fieldwork coordinator is responsible for the program's compliance with fieldwork education requirements (AOTA, 2009a, p. 40).

As the profession of occupational therapy began to move away from traditional medical models, many OTs found themselves working in nontraditional settings and areas of emerging practice. Thus, the profession recognized the need to develop a fieldwork assessment that would be suitable for multiple settings (Atler, 2003). The profession also underwent a conceptual reorganization with the introduction of the Practice Framework and 1997 NBCOT Practice Analysis. Thus, the fieldwork evaluation tool used in the past was no longer relevant to current practice settings, nor was it reflective of the current standards of practice (Atler, 2003). The current Fieldwork Performance Evaluation (FWPE) was accepted in 2002 by the profession as an appropriate measurement of student performance that reflected current practice and could be used across settings as a measurement of clinical competency. The FWPE serves as a tool to be used to evaluate whether a student's performance meets competency for entry level practice and provide feedback for students to develop competent performance over time (Atler, 2003).

In order to meet this new perspective on clinical education, the profession developed and charged a task force to revise the measurement tool. The taskforce developed a draft version of the FWPE to be reviewed by a panel of experts, consisting of academic fieldwork coordinators, fieldwork educators, and recent OT graduates. After making the recommend revisions, FWPE forms were distributed to 1,340 volunteers via fieldwork educators' listserv and direct contact with academic fieldwork coordinators at educational institutions (Atler, 2003). The distribution received a 25% response rate that was reflective of a variety of practice settings: 36% hospital, 20.6% schools, 16.3% mixed, 5.2% community, 3.4% nursing home, 2.8% private practice, 0.6% residential,

6.5% other (Atler, 2003). Item validity was determined by conducting a detailed analysis of individual test items, which indicated that there was no pattern of item response misfit. Such results indicate that the evaluation is valid in diverse fieldwork settings. Reliability was established by a separation index. Due to a tendency for fieldwork supervisors to be too lenient, cutoff scores were established to “help fieldwork educators better judge students’ competency levels relative to the minimum expected levels of competency at midterm and at final” (Atler, 2003, p. 19).

The Fieldwork Performance Evaluation consists of 42 items on which OT student performance is assessed during each of the two fieldwork rotations. These 42 items are divided into 7 “sections that delineate the major competencies required to carry out the occupational therapy process in a professional and ethical manner” (Atler, 2003, p. 21). OT students’ competence for entry-level practice is assessed on the following sections:

- 1) Fundamentals of practice (3 items)
- 2) Basic tenets (4 items)
- 3) Evaluation/screening (10 items)
- 4) Intervention (9 items)
- 5) Management of occupational therapy services (5 items)
- 6) Communication (4 items)
- 7) Professional behaviors (7 items) (AOTAb, 2002)

Each item on the FWPE must be scored using the following 4-point rating scale and scoring criteria:

- 1) Unsatisfactory: Performance is below standards and requires development for entry-level practice. This rating is given when there is a concern about performance.
- 2) Needs Improvement: Performance is progressing but still needs improvement for entry-level practice. This is a realistic rating of performance at midterm, and some ratings of 2 may be reasonable at final.
- 3) Meets Standards: Performance is consistent with entry-level practice. This rating is infrequent at midterm and is a strong rating at final.
- 4) Exceeds Standards: Performance is highly skilled and self-initiated. This rating is rarely given and would represent the top 5% of all the students you have supervised (AOTA, 2002, p. 1).

Possible scores on the FWPE range from 42 to 168 with a minimum passing score of 122 points. Students are scored at midterm (six weeks) for the sole purpose of providing feedback. Midterm scores are not calculated into the final score; thus, midterm scores do not impact a student receiving a passing score on the FWPE. AOTA further notes that all items within the fundamentals of practice section must be scored at a 3 or above for the student to pass the fieldwork rotation, regardless of overall final score. A copy of the FWPE may be found in Appendix A.

National Board Examination

Licensure, credentialing, and certification are essential in health professions to protect the public from under-educated and under-trained professionals (NBCOT, 2009). The National Board for Certification in Occupational Therapy is the gatekeeper of the occupational therapy profession to ensure that those who become occupational therapists

have met the educational and clinical experiences necessary to become competent entry-level professionals. NBCOT protects the profession by requiring graduates of occupational therapy programs to successfully pass a certification examination prior to being awarded the credential of Occupational Therapist Registered (OTR). NBCOT (2003) states,

The purpose of awarding the credential [OTR] is to identify for the public those persons who have demonstrated the knowledge and the skills necessary to provide occupational therapy services...thus the credential of OTR is recognized by agencies, employers, payers and consumers as the viable symbol of quality educated and currently prepared occupational therapy practitioners (p.3).

Hence, in order to practice as a professional occupational therapist, one must receive the OTR credential via successful completion of the certification examination.

NBCOT conducted a practice analysis as the foundation for developing a psychometrically sound and legally defensible examination (2008). NBCOT reports that the development procedures for the examination are consistent with technical guidelines from the American Educational Research Association, the American Psychological Association, and the National Council on Measurement in Education (2003). Since NBCOT results influence an individual's ability to work, the examination also meets procedures outlined in Uniform Guidelines on Employee Selection from the Equal Employment Opportunity Commission (NBCOT, 2003). Results from the practice analysis identified critical skills necessary for the professional OT within four distinct practice domains:

- 1) Gather information regarding factors that influence occupational performance

- 2) Formulate conclusions regarding the client's needs and priorities to develop a client centered intervention plan
- 3) Select and implement evidence-based interventions to support participation in areas of occupation (e.g., ADL, education, work, play, leisure, social participation) throughout the continuum of care
- 4) Uphold professional standards and responsibilities to promote quality in practice (NBCOT, 2003, p. 5).

Test items are assigned to a domain by a panel of content experts while also undergoing validation, editorial, and psychometric reviews. Each item is rated based on criticality, which is a measure of the degree to which a member of the public would be physically, emotionally, or financially harmed if the certificant failed to perform the task competently (NBCOT, 2003). Each item is also measured for frequency, which is based on the amount of time a practitioner spends completing the skill. NBCOT (2003) reports using the Kuder-Richardson Formula #20 and split half reliability estimates to establish reliability between exam versions, thereby providing support regarding internal consistency of items.

Upon completion of the examination and test items, NBCOT conducted a full validation study where practicing OTRs were asked to review the draft exam. NBCOT sent out 1,283 surveys with a response rate of 90% (NBCOT, 2008). Following the validation study, a blueprint of the examination was created which outlined the weights for each section based on frequency and criticality of items. The following list contains the NBCOT blueprint specifications of the practice domains based on the 2007 practice analysis:

- 1) Gather information regarding factors that influence occupational performance.
Percent of Exam: 13.3%
- 2) Formulate conclusions regarding the client's needs and priorities to develop a client centered intervention plan: Percent of Exam: 28.0%
- 3) Select and implement evidence-based interventions to support participation in areas of occupation (e.g., ADL, education, work, play, leisure, social participation) throughout the continuum of care: Percent of Exam: 38.7%
- 4) Uphold professional standards and responsibilities to promote quality in practice: Percent of Exam 20.9% (NBCOT, 2008, p. 9).

NBCOT utilizes Item Response Theory (IRT) and traditional statistics for each examination. IRT methodology is used for field tested items contained on examinations to determine the appropriateness of each item for future use on OTR exams, whereas traditional statistics provide individual item results based on candidate responses (NBCOT, 2008). NBCOT utilizes scaled scores, instead of raw scoring, which allows variations based on item difficulty via a process known as equating. This process allows a direct comparison between different forms of the examination. Although the test items are divided into four distinct domains, the overall scaled score determines whether a candidate passes the examination. Scaled scores range from 300-600 with a minimum score of 450 required to pass the board exam (NBCOT, 2008). National pass rate for the NBCOT examination for all first time test takers was 83.8% for the past six reported years (NBCOT, 2011).

Departmental Exit Examination Scores

The Department of Occupational Therapy at the identified institution uses a comprehensive exit exam as a mechanism to evaluate whether students have mastered the educational objectives from the course curriculum. The exit exam is a 250-question multiple-choice exam, which covers curriculum contents at various levels of Bloom's Taxonomy (Jedlicka, Mosley, Jaffe, & Kassner, 2004). The development and implementation of the exam is the responsibility of the Academic Affairs Committee within the OT department at the identified institution. The department exit exam was updated in 2000 to reflect the results of NBCOT's practice analysis and terminology utilized by the new practice framework. Items on the exam are categorized according to three themes of the OT program: pediatrics, physical dysfunction, and mental health (Jedlicka et al., 2000). Program competencies of evaluation, intervention planning and intervention implementation are addressed within each theme.

Prior to revising test questions, the faculty received an in-service on test construction to assist with structuring the exam and writing effective questions spanning from the knowledge to evaluation stage of Bloom's taxonomy (Jedlicka et al., 2000). The revised test was piloted in fall, 2000 and spring, 2001. The Academic Affairs Committee made revisions to the exam prior to implementing its full use in spring, 2002. The department came to a consensus that a raw score of 75% on the exit exam was the minimal passing score to ensure student mastery of curriculum material. Students who pass the exam are cleared for graduation; those that do not receive the minimum passing score must complete remediation activities in the identified deficit areas prior to retaking the exam.

The exit examination is a method employed by the department to provide information for the students and the program regarding the mastery of curricular concepts and areas in need of improvement. Feedback from the exam allows students a “self-analysis of their mastery of the knowledge and judgment required for practice and to reinforce the values of being competent, reflective practitioners and lifelong learners” (Jedlicka et al., 2000, p. 2). OT faculty review the analyzed results with students who do not pass the exam and are able to identify the curricular themes which were difficult for the student. Students must complete remediation modules on individual curriculum concepts prior to retaking the exit examination. Additionally, the results from the exit exam allow the department to review curricular themes which student groups score low on, thus indicating areas to be strengthened in the curriculum (Jedlicka et al., 2000).

Procedures

Following approval by the doctoral committee chair, this investigator secured IRB approval from Georgia Southern University. The primary investigator then secured approval from the Institutional Review Board (IRB) at the host academic institution utilizing the necessary forms and protocols outlined by the Board. IRB approval for both institutions may be found in Appendix B. IRB approval is mandatory and provides an element of safety and confidence in the research study. Upon securing IRB approval from both academic institutions, the admissions variables and pre-licensure requirements for the specified enrollment time were extracted from the existing database by administrative staff. Administrative staff also removed personal identifying information from the existing database and assigned a random identification number to each subject’s educational record. An encrypted master copy of identified data has been saved to a

secure network server for reference purposes only, with only administrative staff having access. The primary investigator in this study followed the host institution's policy and procedures for the storage of research data. Only data that were not personally identifiable were utilized during data analysis and all data were reported in aggregate format, thereby maintaining individual subject confidentiality. Data will be maintained for a minimum of five years following the conclusion of this study based on the host institution's research requirements for storage of data.

The primary investigator in this study serves as the Student Affairs Chairperson for the host occupational therapy program; thus, routine job functions require access to this data as part of admissions advising and decision making for the program. Hence, the primary investigator had access to all admission variables as part of the essential duties of the Student Affairs Committee. However, this access was limited to admissions decisions for the program and did not permit research to be conducted on the existing data set for purposes other than program evaluation. Consequently, for the purposes of this study, and the future ability to publish significant results, IRB approval at the host institution has been secured.

Data Collected

Data utilized in this study were available in an existing electronic database, thus the study was ex post facto in design. Admission data were collected and entered into the database at the time of acceptance into the academic program by the host institution's admissions department and the Student Affairs Committee. The electronic database was a comprehensive record of each student's admission information, and included up to 136 admission variables per record. Upon completion of the academic program, the Student

Affairs Committee enters additional data including exit exam scores, fieldwork scores, and NBCOT exam results for departmental reference purposes. To date, there has been no statistical analysis of the program's admission data and programmatic outcomes. For the purposes of this study, only those variables identified below were analyzed to determine if select admissions variables could predict pre-licensure requirements for students in the occupational therapy program at the identified institution.

This study analyzed admission and pre-licensure requirement data for students who were enrolled in the academic program from August 2006 to August 2011. This data set represented a group of students who met all graduation requirements and were no longer enrolled at the host institution. Demographic data have been collected from information supplied on the initial admission application, including age and gender. Applicants to the educational program were required to submit educational transcripts from each post-secondary institution they had attended. Data that were initially collected from the transcripts included the total number of college credits, whether a college degree has been awarded, and the declared major. Grade point averages have been calculated by the admissions department based on all coursework completed prior to enrollment. Declared major and prior college attended were assigned at the time of admission based on the state's university grouping and a predetermined set of committee guidelines. Each student had submitted Graduate Records Examination (GRE) scores, as part of their admission packet, to the graduate occupational therapy program. Pre-licensure requirements have been entered into the established database following the completion of the program. The data has been saved to, and will be maintained on a secure network by the primary investigator while following the host institution's policies and procedures for

research data storage, and all names have been removed. After the names were removed by administrative staff, there was no personally identifiable information contained on the database.

Independent variables. Independent variables analyzed during this study consisted of cognitive variables obtained from the existing database representing students enrolled in the OT program from August 2006 to August 2011. These variables were quantitative in nature and had been submitted to the institution as part of the initial application process. The selected variables for this study included the following: 1) overall GPA based on all college coursework; 2) math/science GPA; 3) GRE-verbal score; 4) GRE-math score, and 5) GRE-written score. Additional independent variables, deemed pertinent to this study, included the total number of college credit hours, college degree earned, prior college attended, number of colleges attended, and declared college major. Appendix C contains the key to coding each of the independent variables that have been utilized in this study.

Dependent variables. The dependent variables that were included in the data analysis were termed pre-licensure requirements. As with the independent measures presented above, these measures were located in the existing electronic database based on students who have already graduated from the program. As a mandatory graduation requirement, each subject must take a comprehensive departmental exit exam. These exam scores were recorded and maintained by the department. The existing OT curriculum requires successful completion of two fieldwork experiences, which may be completed at any of over two hundred facilities that have contracts with the host institution. Each student received a fieldwork performance evaluation (FWPE) for each

experience, which has been completed by a supervising therapist. Thus, each student had two FWPE evaluations in their educational record. The FWPE has seven subtests and an overall total score, which were included in the departmental student database. Upon successful completion of the two fieldwork experiences, each subject took the National Occupational Therapy Certification Exam (NBCOT exam). NBCOT exam results were reported to the department each quarter in nominal, pass/fail format only. Scaled scores were not available to the primary investigator from NBCOT.

Data Analysis

All data was analyzed using SAS 9.3. Descriptive statistics were calculated on all variables. Statistical significance has been assessed using an alpha level of 0.1 unless otherwise noted. In order to examine the relationship between various categorical and continuous variables, and the FWPE scores, simple linear regression models (for continuous independent variables), one-way ANOVA (for categorical independent variables) and t-tests (for dichotomous independent variables) were used.

Simple logistic regression models were used to determine the magnitude of the association with the first-time pass rate of the NBCOT exam with each independent variable (continuous, categorical, and dichotomous). Odds ratios and 95% confidence intervals were also calculated.

Sample size and power determination. As there was uncertainty as to what the estimates of the associations between each outcome and each independent variable were, and as this was a pilot study, all available data were utilized to examine and estimate the relationships. There were 129 subjects using all available data. This sample size was

adequate to provide stable estimates for associations and will aid in the development of future research, if warranted.

Chapter Summary

As the profession of occupational therapy becomes better known, admission to graduate OT programs becomes a more competitive process for applicants. Graduate program admission committees must select the best candidates among an increasing number of qualified students who express a sincere desire to become professional therapists. However, without clear understanding of the relationship between variables used to make admission decisions and graduate success, admission committees are unable to make informed decisions regarding admission practices.

The identified OT program for this study has had a significant increase in the number of qualified applicants to the program. This increase has been greater than the national average. Thus, the admission committee must be able to review increasing numbers of applications to determine which applicants will be successful in the academic and experiential components of the program. This study sought to determine whether select admission variables could predict OT graduates' performance on pre-licensure requirements of fieldwork performance evaluation scores, department exit exam scores, and first time pass rate on the national certification examination. The results from this study will be used to better understand the relationships between existing admission variables used by the host institution and measures of graduate success. Thus, the admission committee at the identified OT program will have a better understanding through evidence based research, about the admission variables currently utilized to

select students and their relationship to occupational therapy graduates' success in securing professional licensure.

CHAPTER IV

RESULTS

The purpose of this study was to determine whether select admissions variables could predict graduates' performance on pre-licensure requirements for students from one graduate level occupational therapy program. Specifically, the investigator examined predictor variables and the degree and nature of their relationship with measures of pre-licensure requirements (fieldwork performance evaluation, first time pass rate on the national board certification examination, and the departmental exit examination score). Predictor variables for this study included prior collegiate performance (overall GPA, math/science GPA, total credit hours prior to admission, prior degree, undergraduate major, and college attended), GRE performance (verbal, math, and writing score), and non-cognitive variables (previous experience and faculty rating on an autobiographical essay). In order to determine if these variables were viable predictors, the primary investigator used the following research questions to guide the study:

1. To what degree can prior collegiate performance predict graduate performance on pre-licensure requirements?
2. To what degree can GRE scores predict performance on pre-licensure requirements?
3. To what degree can non-cognitive variables predict performance on pre-licensure requirements?
4. To what degree can the departmental exit exam and fieldwork performance evaluation predict performance on pre-licensure requirements?

Research Design

The researcher used an ex-post facto research design to answer the above stated research questions. Pre-existing admission data for 129 students enrolled in a graduate level occupational therapy program from August 2006 until August 2011 were collected and examined for this study. The occupational therapy program was located in a health science university in the Southeastern part of the United States. Admissions data collected as part of the routine admissions packet were entered into a departmental spreadsheet at the time of acceptance into the program. Departmental staff routinely updated the spreadsheet with information including the students' results on fieldwork performance evaluations, departmental exit examination scores, and first time pass rate on the National Board for Certification in Occupational Therapy Certification Exam. Although the primary researcher had access to the admission data as part of her routine job functions, this access did not permit research to be conducted for purposes other than program assessment. Thus, the primary investigator secured IRB approval at Georgia Southern and the host institution prior to accessing the data for research purposes.

The primary investigator used SAS 9.3 to analyze the data to determine if information collected at the time of admission could be utilized to predict student performance on pre-licensure requirements. Data related to prior collegiate performance was operationally defined at the onset of this study to include overall grade point average, math/science grade point average, total number of credit hours earned prior to admission, prior degree, undergraduate major, and college attended. The term non-cognitive variables were defined to represent a set of variables that included an applicant's previous experience and the faculty rating on an autobiographical essay, which was submitted as

part of the admission packet. Student scores on the verbal, math, and written portions of the GRE were also analyzed for this study. Descriptive statistics were calculated on all variables and are presented in the following section of this chapter. Simple linear regression models for continuous independent variables, one-way ANOVA for categorical independent variables, and t-test for dichotomous independent variables were performed. Statistical results for individual variables have been organized according to the specific research question they are associated with. Simple logistic regression models were used to determine the magnitude of the association with first time pass rates on the NBCOT exam and passing all exams with each independent variable. The final section of this chapter will contain the results of the full linear and logistic regression models, which were completed to determine the association between multiple variables simultaneously.

Sample Demographics

The sample utilized for this research study included students who were enrolled and graduated from the graduate occupational therapy program at one health science institution from August 2006 through August 2011. The total sample for this specified time period consisted of all 129 students who were enrolled and graduated during this time. Some data were missing from the original data set; thus statistical calculations were conducted on fewer than 129 subjects on certain items, which have been noted in the results. Of the students represented in this sample, 93.02% (n=120) were female, with 6.98% (n=9) being male. The mean age of students was 23.43 years old, with ages ranging from 20 years to 50 years at the time of admission. No further demographic data were collected or analyzed for this research study.

Descriptive Statistics

Descriptive statistics were calculated on all variables collected for this study. Data that were obtained at the time of admission from the students' academic history was termed prior collegiate performance and included variables of grade point average, math/science grade point average, and the number of schools previously attended. Prior collegiate performance also included the total number of credit hours earned prior to enrollment in the graduate program and prior school attended. Due to the low frequency of occurrence in some categories of independent variables, some categories were collapsed or not used for analysis. The college groups of "2 year program" and "2 year colleges" were omitted from further analysis due to their low frequency. Within the category of additional experience, the categories of "family member received therapy," "applicant has received therapy," and "both family member and applicant have previously received therapy" were collapsed into one additional experience category. Thus, this item became a dichotomous variable for data analysis for this study.

Table 1 contains a summary of the data results for prior collegiate performance. The mean grade point average for the students was 3.49 with the mean math/science GPA being 3.26, based on a standard 4.0 grading system. Results indicated that the mean number of colleges attended prior to enrollment was 2.69, indicating that most students attended more than one institution prior to entering occupational therapy program. The mean number of credit hours earned for students admitted to the program was 119.08 credits.

Table 1

Mean Prior College Performance

	Mean	Standard Deviation	Range
GPA	3.49	.30	2.79-4.0
Math/science GPA	3.26	.41	2.51-4.0
Number of schools	2.69	1.33	1-8
Total Credits	119.08	27.54	89.99-211
GRE- Math	529.53	101.56	250-750
GRE- Verbal	424.03	74.55	300-660
GRE- Writing	3.85	.66	2-5.5

n=129

Table 2 contains descriptive results related to prior collegiate performance, specifically in the area of college major and degree earned. Of the results from this sample, 58.14% (n=75) had not earned a college degree prior to enrollment in the occupational therapy program; whereas, 41.86% (n=54) had earned a bachelor's degree or higher prior to enrollment in the occupational therapy program. The largest percentage of students, 47.24% (n= 60), had a declared college major in the science field and just 15.75% (n=20) had declared education as their college major. The remaining students (37.01%, n=47) had declared majors in liberal arts, business, family and consumer sciences, public health or were undeclared majors. Despite its seemingly natural relationship to the OT curriculum, a relatively small percentage of students (18.85%) had declared their major to be kinesiology, or exercise science, prior to enrollment in the occupational therapy program

Table 2

College Major and Degree Earned

	Variable	n	%
Earned Degree (n=129)	No	75	58.14%
	Yes	54	41.86%
College Major (n=127)	Science	60	47.24%
	Education	20	15.75%
	Other	47	37.01%
Kinesiology Major (n=122)	No	99	81.15%
	Yes	23	18.85%

Data related to previous college attended were also collected and analyzed as part of the study. The primary researcher sought to examine whether differences existed in pre-licensure requirements based on the level of undergraduate institution attended. Because there were low frequency of responses for two year programs and two year colleges, these categories were eliminated from data analysis beyond the descriptive analysis.

At the onset of this study, the University System of Georgia (USG) categorization system was selected to group the prior colleges attended, and separate categories of public non-Georgia and private were created to capture institutions that were not part of the USG system. Table 3 contains the descriptive data related to prior college attended based on the USG categories. However, initial data analysis indicated that 25.99% of applicants attended institutions that were not categorized by the USG system. Thus, it was difficult to compare all prior colleges attended by the study sample. Therefore, the investigator utilized the Basic Classification Categories of the Carnegie System to compare all institutions on a similar ranking system. Table 4 contains the ranking of the

Carnegie System of all prior colleges attended by the subjects in this study. The special focus institution (n=1) was combined into the doctoral granting category at the discretion of the primary researcher for further data analysis, based on a review of the institution and Carnegie descriptors.

Table 3

College Group Using the USG Ranking System

USG College Group	n	%
Research University	24	18.85%
Regional University	15	11.81%
State University	36	28.35%
State College	14	11.02%
Public Non-Georgia	17	13.39%
Private	16	12.60%
Two-Year College	3	2.36%
Two Year Program	2	1.57%

n = 127

Table 4

College Group Using the Basic Carnegie Classification of Institutions

Carnegie Level	n	%
Associate Degree	19	14.96%
Doctorate University	45	35.43%
Masters College/ University	50	39.37%
Baccalaureate College	12	9.45%
Special Focus Institution	1	.79%

n= 127

The investigator was interested also in examining the impact that non-cognitive variables played in student success on occupational therapy pre-licensure requirements. The term non-cognitive variables was operationally defined to refer to an applicant's previous experience and the faculty score on an autobiographical essay which was submitted as part of the application packet. Table 5 contains the results related to the

applicants' experience prior to admission: 10.57% (n=13) of the accepted students applied to the occupational therapy having no evidence of prior experience with an occupational therapist. 62.61% of accepted applicants in this study had less than six months of experience with an occupational therapist, whereas just 26.02% of accepted applicants had greater than 6 months of exposure to the OT profession at the time of application to the program. The primary investigator also examined whether applicants, or a family member, had received rehabilitative services prior to the time of application to the program. Of the accepted applicants, 38.6% (n=44) reported on the admission application that either they personally, or an immediate family member, had received services from occupational or physical therapy in the past.

Table 5

Applicants' Pre-Admission Experience

Variable	Level	n	%
Experience with OT	None	13	10.57%
	Shadowed	25	20.33%
	Employed or Volunteer < 6mo	55	44.72%
	Employed or Volunteer > 6mo	29	23.58%
Additional experience	None	70	61.40%
	Family Member	31	27.19%
	Subject	11	9.65%
	Family & Subject	2	1.75%

n=124

The admission application also requested information from each applicant regarding the amount of contact experience earned prior to application. A review of the admission application indicated that there were three separate areas for which an applicant was asked to report their experience. The admission application asked

applicants to record their experiences in the areas relevant to the practical components of the program, for example: 1) patient contact experience (including shadowing a healthcare professional), 2) related healthcare experience, and 3) community service. However, there was no further explanation to guide applicants on the differences, if any, between each of the three categories or how to classify types of experience. Table 6 includes the aggregate results, including frequency and mean number of contact hours for each category of experience type.

Table 6

Applicants' Previous Contact Experience

Variable	Level	n	%	Mean	SD
Patient	No	14	11.48%		
	Yes	108	88.52%	329.72	1387.48
Related	No	72	58.54%		
	Yes	51	41.46%	385.88	1199.68
Community	No	40	32.79%		
	Yes	82	67.21%	243.42	621.16

Descriptive statistics, including mean and standard deviation, were also calculated for each of the three dependent variables, or pre-licensure requirements. For the Fieldwork Performance Evaluation (FWPE), mean and standard deviations were calculated on each subsection as well as on the total score for both the 1st and 2nd FWPE. The two FWPE were analyzed separately, rather than utilizing a calculated mean, as students must pass each FWPE to be successful in meeting the pre-licensure requirements. Table 7 contains the descriptive results of the FWPE data analysis.

Table 7

Level II Fieldwork Performance Evaluation Results

Variable	Level	Mean	SD
Section 1: Fundamentals	1 st Rotation	10.33	1.6
	2 nd Rotation	10.55	1.4
Section 2: Basic Tenets	1 st Rotation	13.22	1.57
	2 nd Rotation	13.38	1.74
Section 3: Evaluation & Treatment	1 st Rotation	32.60	3.42
	2 nd Rotation	32.51	3.75
Section 4: Intervention	1 st Rotation	29.96	3.34
	2 nd Rotation	30.05	3.6
Section 5: Management of OT services	1 st Rotation	16.26	1.87
	2 nd Rotation	16.33	2.07
Section 6: Communication	1 st Rotation	13.96	2.02
	2 nd Rotation	13.66	1.65
Section 7: Personal Behaviors	1 st Rotation	25.26	3.18
	2 nd Rotation	25.28	2.75
Total Score	1 st Rotation	141.28	12.73
	2 nd Rotation	141.26	14.07

n= 129

Data analysis indicated that students earned a mean score of 74.40% with a standard deviation of 6.43 on the department exit examination. The sample's scores on the departmental exit examination ranged from 58% to 91.5%. The overall first time pass rate on the national board examination was 89.92% (n=116). Table 8 contains descriptive statistics for pre-licensure requirements. The next section of this chapter will report the results from data analysis conducted to assist the primary investigator in answering the research questions for this study.

Table 8
Summary of Pre-Licensure Pass Rates

		n	%
NBCOT Exam	Yes	116	89.92%
	No	13	10.08%
1st FWPE	Yes	124	97.64%
	No	3	2.36%
2nd FWPE	Yes	124	96.12%
	No	5	3.88%
Exit Exam	Yes	59	45.74%
	No	70	54.26%

Correlational Analysis

In order to examine the relationship between the independent variables in this study, correlational analysis was conducted. Pearson correlations were used for the categorical variables of college degree, college major, kinesiology major, USG grouping, Carnegie Classification, additional experience, experience type, patient care experience, related healthcare experience, and community service. The outcome variable of first time pass rate on the NBCOT exam is also included in this table as it was a dichotomous variable. Table 9 contains the results of the correlation analysis. There were no statistically significant correlations between any of the categorical variables in this study, thus indicating that there was no co-linearity among the categorical variables used in this study.

Table 9

Pearson Correlation Results for Variables

	M/S gpa	GPA	No of schools	GRE V	GRE M	GRE-W	Credits	Degree
M/S								
GPA	0.85							
No of Schools	-0.08	-0.16						
GRE V	0.24	0.23	-0.14					
GRE math	0.27	0.19	-0.05	0.34				
GRE writing	0.01	0.07	-0.03	-0.13	0.07			
Credits	-0.01	-0.08	0.25	0.26	0.06	-0.03		
Degree	0.003	0.05	-0.22	-0.18	-0.03	0.04	-0.76	
major	0.12	0.2	-0.11	0.02	0.006	-0.01	-0.31	0.33
Kines	-0.01	0.01	0.08	0.05	0.0004	0.11	-0.17	0.13
USG	-0.14	-0.14	0.26	-0.12	-0.03	0.002	-0.01	0.07
Carnegie	0.002	-0.01	-0.02	0.03	0.05	-0.1	0.21	-0.17
additional exp	0.03	0.09	-0.14	0.06	-0.001	0.03	0.09	-0.07
experienc e type	0.14	0.08	-0.04	0.01	0.07	-0.1	0.07	0.05
patient	0.05	-0.02	0.03	0.17	0.01	-0.04	-0.08	0.08
related	-0.01	-0.02	0.1	-0.06	-0.1	-0.05	0.26	-0.08
communit y	-0.1	-0.12	0.03	-0.1	-0.15	-0.06	0.01	-0.03
FW1 Total	0.007	-0.007	0.01	0	0.08	-0.01	-0.1	-0.08
FW 2 Total	0.13	0.2	0.02	-0.04	0.16	-0.01	-0.21	0.04
Exit Exam	0.21	0.17	-0.02	0.09	0.19	0.18	0.11	-0.03
NBCOT	-0.15	-0.19	0.02	-0.33	-0.25	0.02	-0.13	0.1
Essay Score	0.23	0.25	-0.01	0.22	0.15	0.1	0.13	-0.13
Mean	3.26	3.49	2.69	424	529.5	3.85	118.8	**
SD	0.41	0.3	1.33	74.55	101.6	0.66	27.43	**

** Variable was categorical therefore mean and SD was not calculated

Table 9

Continued

	Major	Kines	USG	Carnegie	Add. Exp	Exp Type	Patient	Related
M/S								
GPA								
No of Schools								
GRE V								
GRE math								
GRE writing								
Credits								
Degree								
major								
Kines	0.21							
USG	0.08	0.03						
Carnegie	-0.14	-0.1	0.13					
additional exp	0.02	0.03	-0.05	0.06				
experience type	-0.06	-0.15	0.15	0.13	0.18			
patient	0.12	0.03	0.09	0	0.17	0.25		
related	-0.13	-0.03	-0.11	-0.06	-0.13	0.06	-0.05	
community	0.0001	0.06	0.03	-0.09	0.05	0.21	0	0.07
FW1 Total	-0.12	-0.03	0.001	-0.1	-0.12	0.06	0.06	-0.08
FW 2 Total	0.12	0.007	0.04	-0.05	0.07	-0.01	-0.09	-0.09
Exit Exam	-0.09	-0.16	-0.03	0.06	-0.09	0.12	-0.09	0.07
NBCOT	0.01	0.15	0.04	-0.18	-0.11	-0.1	-0.03	0
Essay Score	0.07	0.14	-0.003	0.02	0.17	0.19	-0.08	0.03
Mean	**	**	**	**	**	**	325	386
SD	**	**	**	**	**	**	1377	1200

** Variable was categorical therefore mean and SD was not calculated

Table 9

Continued

	Community	FW 1 Total	FW 2 Total	Exit Exam	NBCOT	Essay Score
M/S						
GPA						
No of Schools						
GRE V						
GRE math						
GRE writing						
Credits						
Degree						
major						
Kines						
USG						
Carnegie						
additional exp						
experie nce type						
patient						
related						
communit y						
FW1 Total	-0.03					
FW 2 Total	-0.12	0.18				
Exit Exam	-0.11	-0.06	0.05			
NBCOT	0.08	0.12	-0.03	-0.24		
Essay Score	0.06	-0.08	0.06	0.16	-.08	--
Mean	240	141.4	141.3	74.4	**	4.02
SD	616.6	12.78	14.07	6.4	**	.9

** Variable was categorical therefore mean and SD was not calculated

Research Question One

The first research question for this study asked “to what degree can prior collegiate performance predict graduate performance on pre-licensure requirements”. Because pre-licensure requirements had been operationally defined as an umbrella term to encompass three separate activities, this question was divided into three sub-questions for the purpose of presenting the statistical results. Thus, the results of prior academic performance and its’ relationship to (1) fieldwork performance, (2) departmental exit examination, and (3) first time pass rate on the NBCOT exam will be discussed separately below.

Sub-question 1: To what degree can prior collegiate performance predict graduate performance on the FWPE? Simple linear regression analysis was conducted to determine whether each of the continuous independent variables, GPA, M/S GPA or number of credits earned, was significantly associated with the two Fieldwork Performance Evaluations (FWPE). FWPE total scores, and each of the seven sub-scores, were considered for this analysis. Since this study was a pilot study designed to examine the admissions data, the alpha level was set at $\alpha=.1$. There were no statistically significant associations between previous collegiate performance (GPA or M/S GPA) and the 1st FWPE. Data analysis determined several statistically significant results for the impact of prior collegiate performance on the 2nd FWPE. A consistent trend was noted that as GPA increased by one unit, several FWPE section scores also increased. The results of GPA and math/science GPA, with FWPE scores are included in Table 10.

Table 10

Relationship of GPA and Math/Science GPA with Students' FWPE Scores

		Slope	SE	R ²	T or F Statistic	p- value*
1st FWPE Total	GPA	.53	3.89	.0001	.14	.8926
	M/S GPA	.90	2.80	.0008	.32	.7494
1st FWPE Section 1	GPA	.21	.48	.0015	.44	.6584
	M/S GPA	.14	.34	.0014	.42	.6759
1st FWPE Section 2	GPA	-.31	.47	.0034	-.66	.5136
	M/S GPA	-.03	.34	.0001	-.08	.9349
1st FWPE Section 3	GPA	.30	1.03	.0007	.29	.7708
	M/S GPA	.10	.74	.0001	.14	.8907
1st FWPE Section 4	GPA	-.07	1.00	.0000	-.07	.9476
	M/S GPA	-.18	.72	.0005	-.25	.8005
1st FWPE Section 5	GPA	.02	.56	.0000	.03	.9754
	M/S GPA	.29	.40	.0041	.72	.4722
1st FWPE Section 6	GPA	.44	.61	.0041	.72	.4712
	M/S GPA	-.06	.44	.0002	-.14	.8864
1st FWPE Section 7	GPA	-1.19	.95	.0123	-1.26	.2112
	M/S GPA	-.16	.69	.0004	-.24	.8131
2nd FWPE Total	GPA	9.75	4.13	.0420	2.36	.0198*
	M/S GPA	4.63	3.01	.0183	1.54	.1262
2nd FWPE Section 1	GPA	1.28	.51	.0143	2.49	.0143*
	M/S GPA	.70	.37	.0273	1.88	.0625*
2nd FWPE Section 2	GPA	1.28	0.51	.0143	2.49	.0143*
	M/S GPA	.70	.37	.0273	1.88	.0625*
2nd FWPE Section 3	GPA	2.01	1.12	.0252	1.80	.0736*
	M/S GPA	.86	.81	.0089	1.06	.2895
2nd FWPE Section 4	GPA	1.94	1.07	.0255	1.81	.0720*
	M/S GPA	1.25	.77	.0205	1.62	.1073
2nd FWPE Section 5	GPA	.26	.63	.0013	.41	.6818
	M/S GPA	.03	.45	.0000	.06	.9551
2nd FWPE Section 6	GPA	1.57	0.48	.0789	3.29	.0013*
	M/S GPA	.86	0.35	.0461	2.47	.0149*
2nd FWPE Section 7	GPA	.57	.83	.0038	.69	.4906
	M/S GPA	.05	.60	.0001	.09	.9311

*Statistically significant at p=.1

Data related to the number of earned college credit hours prior to enrollment, as shown in Table 11, also show an association with the FWPE evaluation scores. In contrast to the effect of GPA on FWPE scores, the data analysis show that as the number of earned credit hours increased, student scores on numerous sections of the FWPE declined. Thus, students with more college credits received lower FWPE scores in the identified subsections.

Table 11

Relationship of Previous Number of Earned College Credit Hours with FWPE Scores

	Slope	SE	R²	T or F statistic	p-value
1st FWPE Total	-.06	.04	.0141	-1.33	.1869
1st FWPE Section 1	.00	.01	.0004	.24	.8141
1st FWPE Section 2	-.01	.01	.0086	-1.04	.2990
1st FWPE Section 3	.00	.01	.0016	-.44	.6598
1st FWPE Section 4	-0.02	.01	.0357	-2.15	.0334*
1st FWPE Section 5	-.01	.01	.0069	-.93	.3531
1st FWPE Section 6	-.01	.01	.0053	-.81	.4179
1st FWPE Section 7	-.01	.01	.0135	-1.31	.1927
2nd FWPE Total	-0.11	.04	.0446	-2.42	.0172*
2nd FWPE Section 1	-0.01	.00	.0241	-1.75	.0826*
2nd FWPE Section 2	-.010	.01	.0080	-1.00	.3201
2nd FWPE Section 3	-0.02	.01	.0298	-1.95	.0533*
2nd FWPE Section 4	-0.03	.01	.0379	-2.20	.0296*
2nd FWPE Section 5	-0.01	.01	.0237	-1.73	.0853*
2nd FWPE Section 6	-.01	.01	.0121	-1.23	.2201
2nd FWPE Section 7	-0.02	.01	.0372	-2.74	.0070*

*Statistically significant at $p=.1$

Data analysis indicated that the college attended prior to enrollment in the OT program had a statistically significant impact on the pre-licensure requirements. Students who had attended either a public non-Georgia institution, or a regional institution, on the USG ranking had significantly higher mean section 3 scores on the 1st FWPE. There were no other statistically significant results obtained related to prior collegiate performance and FWPE scores. Table 12 contains the analysis results of college attended and FWPE scores.

Table 12

Results of FWPE Scores Based on USG and Carnegie Classification

	USG College Group		Carnegie	
	R ²	p-value	R ²	p-value
1st FWPE- Total	.0683	.1468	.0123	.6816
1st FWPE- Section 1	.0631	.1762	.0056	.8741
1st FWPE Section 2	.0570	.2281	.0337	.2379
1st FWPE Section 3	.0798	.0818*	.0215	.4428
1st FWPE Section 4	.0456	.3598	.0171	.5451
1st FWPE Section 5	.0337	.5461	.0049	.8947
1st FWPE Section 6	.0370	.4896	.0196	.4861
1st FWPE Section 7	.0495	.3102	.0108	.7197
2nd FWPE- Total	.0277	.6537	.0095	.7566
2nd FWPE- Section 1	.0226	.7521	.0394	.1778
2nd FWPE Section 2	.0412	.4276	.0070	.8323
2nd FWPE Section 3	.0248	.7106	.0052	.8887
2nd FWPE Section 4	.0404	.4408	.0274	.3342
2nd FWPE Section 5	.0362	.5075	.0255	.3664
2nd FWPE Section 6	.0686	.1414	.0369	.2032
2nd FWPE Section 7	.0092	.9559	.0011	.9880

*Significant at p=.1

Sub-question 2: To what degree can prior collegiate performance predict graduate performance on the departmental exit exam? This question explored the relationship that previous college performance (GPA, M/S GPA, college credits, college attended, college major) would have on student performance on the 250-question departmental exit examination. The identified occupational therapy program requires students to successfully complete a departmental comprehensive exit examination prior to graduation. For the exit exam there were three significant associations with prior collegiate performance detected based on the data analysis. Simple linear regression analysis, for continuous variables, indicated that for every one-unit increase in the applicants' math and science GPA the exit exam score increased by 3.36 units. Analysis further indicated that for every one-unit increase in an applicant's overall GPA, the exit exam score increased by 3.85 points. One-way ANOVA results for categorical variables indicated that admitted students with a kinesiology major had significantly higher mean

exit exam scores than those who were not kinesiology majors. Table 13 contains the results of the departmental exit exam based on previous college performance.

Table 13

Previous College Performance as a Predictor of Performance on the Exit Exam

Independent Variable	Level	Mean	SD	Slope	SE	R²	T or F Stat	p-value
Math / Science GPA				3.36	1.36	0.0460	2.47	0.0146*
GPA				3.85	1.90	0.0312	2.02	0.0453*
Total Credit Hours				0.03	0.02	0.0150	1.38	0.1702
Degree	No	74.11	5.99			0.0029	0.37	0.5415
	Yes	74.81	7.05					
Major	Education	73.00	5.90			0.0097	0.61	0.5466
	Sciences	74.73	6.42					
	Other	74.73	6.68					
Kinesiology Degree	No	73.80	6.31			0.0274	3.37	0.0687*
	Yes	76.51	6.65					

*Statistically Significant at $p=.1$

Table 14 contains the results from the one-way ANOVA analysis indicating the differences in mean scores based on the institution attended prior to enrollment in the occupational therapy program. The data results indicated that students who attended a state college on the USG ranking system had significantly lower mean exit exam scores than any other group. Additionally, students who attended an associate or baccalaureate institution on the Carnegie Classification system had significantly lower mean exit exam scores than those who attended Carnegie doctoral or master's institutions. There were no other statistically significant results found between collegiate performance and student performance on the departmental exit.

Table 14

Results of Exit Exam Based on USG and Carnegie Classification

		Mean	SD	R²	T or F Stat	p- value
College Group	Private	75.39	7.89			
	Public Non-GA	75.76	7.06			
	Regional Univ.	76.65	5.22	.1195	3.15	.0106*
	Research Univ.	74.64	5.12			
	State College	68.56	5.99			
	State University	75.02	6.17			
Carnegie Level	Associate Degree	70.68	6.82			
	Masters College	75.89	6.08	.1300	6.13	.0006*
	Doctorate Univ.	75.63	5.82			
	Baccalaureate College	69.9	6.01			

*Statistically Significant at p=.1

Sub-question 3: To what degree can prior collegiate performance predict graduate performance on the NBCOT examination? All graduates seeking certification as occupational therapists must successfully complete the NBCOT examination. OT educational programs are required to publicize NBCOT exam results as an external indicator of the program's educational outcomes. NBCOT scores are reported to the educational programs in nominal, pass/fail, format only. For the first time pass rate on the NBCOT exam there were two significant associations detected in relation to prior collegiate performance. Simple logistic regression analysis indicated that for every one-unit increase in math and science GPA, individuals were 5.65 times more likely to pass the NBCOT exam on the first attempt. Additionally, for every one-unit increase in the

overall GPA individuals were 12.09 times more likely to pass the NBCOT exam on the first attempt. There were no other statistically significant results between prior collegiate performance and first time pass rate on the NBCOT examination. Table 15 contains the results of data analysis for NBCOT passing based on previous college performance.

Table 14

Results of First Time Pass Rate on NBCOT based on Previous College Performance

Independent Variable	Level	Odds Ratio	95% CI		p-value
			Lower	Upper	
Math / Science GPA		5.65	1.11	28.75	0.0370*
GPA		12.09	1.46	100.21	0.0209*
Total Credit Hours		1.02	0.99	1.04	0.1883
Degree	No (ref)	1.00			0.3969
	Yes	1.71	0.50	5.85	
Major	Education	0.25	0.04	1.64	0.3143
	Sciences	0.34	0.07	1.70	
	Other (ref)	1.00			
Kinesiology Degree	No (ref)	1.00			0.9642
	Yes	NE	NE	NE	
College Group	Private	6.00	0.58	61.84	0.3433
	Public Non-GA	6.40	0.62	65.74	
	Regional University	NE	NE	NE	
	Research University	9.20	0.91	93.02	
	State University	3.20	0.67	15.19	
	State College (ref)	1.00			
Carnegie Classification	Associate Degree College	0.26	0.03	2.51	0.0863*
	Masters College or University	1.05	0.11	10.30	
	Doctorate Granting University	2.00	0.17	24.12	
	Baccalaureate College (ref)	1.00			

*Significant at $p=.1$

Research Question Two

The second research question examined the role of the GRE in terms of success on occupational therapy pre-licensure requirements. Specifically, this question asked “to what degree can GRE scores predict performance on pre-licensure requirements.” The primary investigator explored whether GRE scores, earned prior to application to the program, would predict student performance on pre-licensure requirements. Simple linear regression analysis, with a predetermined alpha level of $\alpha=.1$, was performed on GRE verbal, GRE math, and GRE writing scores to determine their relationship with each of the three identified pre-licensure requirements. Again, for the purpose of clarity, each of the three pre-licensure requirements will be presented separately below.

Sub-question 1: To what degree can GRE scores predict graduate performance on the FWPE? Simple linear regression analyses were conducted on the continuous variables of GRE verbal, GRE math, and GRE writing. In relation to the association between GRE scores and the Fieldwork Performance Evaluation (FWPE), no statistically significant results were found for the 1st FWPE, either total or any of the subsections, with the exception of section 7. The data analysis indicated that as GRE math scores increased by one point, the section 7 score of the 1st FWPE increased by 0.01 points. For the 2nd FWPE, significant results were found for the total score, as well as for sections 3, 6 and 7. Results indicated that for every one point increase in the GRE math score, the 2nd FWPE total score increased by 0.02 points. Results further indicated that for every one point increase in the GRE math score, the section 3 scores increased by 0.01 points, the section 6 score increased by 0.003 points, and the section 7 score increased by 0.004 points. These results are summarized in Table 16.

Table 16

Results of GRE Scores as Predictors of FWPE Score

Variable		Slope	SE	R ²	T or F Statistic	p-value
GRE Math	1 st FWPE Total	.01	.01	.0051	.80	.4243
	1 st FWPE Section 1	.00	.00	.0069	-.94	.3504
	1 st FWPE Section 2	.00	.00	.0003	-.02	.8441
	1 st FWPE Section 3	.00	.00	.0067	.93	.3561
	1 st FWPE Section 4	.00	.00	.0025	.57	.5711
	1 st FWPE Section 5	.00	.00	.0025	.56	.5773
	1 st FWPE Section 6	.00	.00	.0000	-.07	.9412
	1 st FWPE Section 7	.01	0.00	.0729	3.16	.0020*
	2 nd FWPE Total	.02	0.01	.0288	1.94	.0544*
	2 nd FWPE Section 1	.00	.00	.0080	1.01	.3154
	2 nd FWPE Section 2	.00	.00	.0078	.99	.3217
	2 nd FWPE Section 3	.01	0.00	.0394	2.27	.0247*
	2 nd FWPE Section 4	.00	.00	.0136	1.32	.1902
	2 nd FWPE Section 5	.00	.00	.0006	.29	.7754
2 nd FWPE Section 6	.003	0.00	.0455	2.45	.0156*	
2 nd FWPE Section 7	.0004	0.00	.0218	1.68	.0963*	
GRE-Verbal	1 st FWPE Total	.00	.02	.0005	-.24	.8075
	1 st FWPE Section 1	.00	.00	.0001	.11	.9114
	1 st FWPE Section 2	.00	.00	.0000	.01	.9957
	1 st FWPE Section 3	.00	.00	.0000	.01	.9957
	1 st FWPE Section 4	.00	.00	.0042	-.73	.4651
	1 st FWPE Section 5	.00	.00	.0010	-.36	.7164
	1 st FWPE Section 6	.00	.00	.0012	.39	.7001
	1 st FWPE Section 7	.00	.00	.0042	.73	.4648
	2 nd FWPE Total	-.01	.02	.0023	-.54	.5934
	2 nd FWPE Section 1	.00	.00	.0028	-.60	.5496
	2 nd FWPE Section 2	.00	.00	.0050	-.80	.4279
	2 nd FWPE Section 3	.00	.00	.0006	.27	.7889
	2 nd FWPE Section 4	.00	.00	.0004	-.23	.8209
	2 nd FWPE Section 5	.00	.00	.0115	-1.21	.2286
2 nd FWPE Section 6	.00	.00	.0040	.71	.4770	
2 nd FWPE Section 7	.00	.00	.0048	-.78	.4356	
GRE-Writing	1 st FWPE Total	-.55	1.79	.0008	-.31	.7591
	1 st FWPE Section 1	.01	.22	.0000	.03	.9722
	1 st FWPE Section 2	-.03	.22	.0001	-.12	.9060
	1 st FWPE Section 3	.17	.47	.0011	.36	.7205
	1 st FWPE Section 4	-.16	.47	.0009	-.33	.7401
	1 st FWPE Section 5	-.21	.26	.0056	-.83	.4101
	1 st FWPE Section 6	-.01	.01	.0053	-.81	.4179
	1 st FWPE Section 7	.33	.45	.0045	.74	.4620
	2 nd FWPE Total	1.29	1.95	.0036	.66	.5094
	2 nd FWPE Section 1	-.01	.19	.0000	-.07	.9463
	2 nd FWPE Section 2	.15	.24	.0033	.63	.5281
	2 nd FWPE Section 3	.46	.52	.0064	.88	.3817
	2 nd FWPE Section 4	.33	.50	.0037	.66	.5074
	2 nd FWPE Section 5	.27	.29	.0072	.93	.3543
2 nd FWPE Section 6	.26	.23	.0102	1.11	.2694	
2 nd FWPE Section 7	.37	.38	.0078	.97	.3349	

*Statistically significant at p=.1

Sub-question 2: To what degree can GRE scores predict graduate performance on the department exit exam? Continuous variables of GRE verbal, GRE math, and GRE written scores were collected and analyzed using simple logistic regression analysis to determine their use as a predictor variable for student success on the department exit exam. Logistic regression analysis revealed that for every one-point increase in the GRE math score, student scores on the departmental exit exam increased by 0.01 points. There were no other statistically significant results for the GRE variables and the department exit exam (Table 17).

Table 15

Results of Exit Exam Based on GRE

Independent Variable	Slope	SE	R²	T or F statistic	p-value
GRE – Verbal	0.01	0.01	0.0096	1.11	0.2704
GRE – Math	0.01	0.01	0.0399	2.30	0.0233*
GRE – Writing	0.01	0.87	0.0000	0.01	0.9917

*Significant at p=.1

Sub-question 3: To what degree can GRE scores predict graduate performance on the NBCOT exam? Simple logistic regression analysis was completed on the continuous variables of GRE verbal, GRE math and GRE writing to examine their relationship with students' first time pass rate on the NBCOT exam. Data analysis results indicated that for every one point increase in the GRE verbal score, students were 1.03 times more likely to pass the NBCOT on the first attempt. Similarly, students were 1.01 times more likely to pass the NBCOT on the first attempt for every one point increase in the GRE math score. Results also indicated that for every one point increase in the GRE writing score, students were 2.77 times more likely to pass the NBCOT exam on the first

attempt. Table 18 contains the results of data analysis that considered the GRE as a predictor variable for the NBCOT pass rate.

Table 16

First Time Pass Rate on NBCOT Based on GRE Scores

Independent Variable	Odds Ratio	95% CI		p-value
		Lower	Upper	
GRE – Verbal	1.03	1.01	1.04	0.0008*
GRE – Math	1.01	1.00	1.01	0.0073*
GRE – Writing	2.77	1.07	7.14	0.0356*

*Significant at $p=.1$

Research Question Three

The third research question explored the extent to which non-cognitive variables (previous related experience and autobiographical essay scores) could be used to predict performance on pre-licensure requirements. Based on the information collected off of the admission application, applicants were asked to supply information regarding three separate types of previous experience. The three types of previous experience applicants were asked about were: experience with an OT, additional experience, and contact experience. Each of the three pre-licensure requirements, fieldwork performance, departmental exit examination, and first time pass rate on the NBCOT exam, were considered during data analysis and are discussed separately below. Dichotomous independent variables relating to previous experience were analyzed using t-test analysis, while the autobiographical essay was analyzed using simple linear regression as it was a continuous variable. Categorical independent variables related to the type of previous experience were analyzed using one-way ANOVA. Data analysis was conducted on each type of experience as they related to the pre-licensure requirements for occupational therapy graduates.

Sub-question 1: To what degree can non-cognitive variables predict graduate performance on the FWPE? Statistical analyses were conducted on non-cognitive variables to determine their relationship with student performance on the fieldwork performance evaluation (FWPE). Additional experience could have been gained by an applicant, or a family member, receiving rehabilitation services prior to the time of application. The data results indicated that additional experience had no significant impact on the students' performance on the FWPE (Table 19). Similar to additional experience, the type of pre-admission experience the applicant had with an OT prior to application had no statistically significant impact on the FWPE. Thus, students who had no experience, shadowed an OT, volunteered with an OT for less than 6 months, or those that had greater than 6 months of experience did not differ significantly on their FWPE scores. These results are reported in Table 20.

Table 19

Additional Experience as a Predictor Variable for FWPE Scores

			Mean	SD	R ²	T or F Statistic	p- value
Additional Experience	1 st FWPE Total	Any	139.49	11.94	.0178	2.01	.1591
		None	143.06	13.60			
	1 st FWPE Section 1	Any	10.45	1.30	.0035	.39	.5322
		None	10.26	1.82			
	1 st FWPE Section 2	Any	12.95	1.40	.0157	1.79	.1836
		None	13.36	1.66			
	1 st FWPE Section 3	Any	32.25	3.42	.0062	.70	.4056
		None	32.80	3.42			
	1 st FWPE Section 4	Any	29.82	3.29	.0084	.95	.3325
		None	30.46	3.48			
	1 st FWPE Section 5	Any	15.98	1.82	.0225	2.58	.1111
		None	16.54	1.91			
	1 st FWPE Section 6	Any	14.00	2.69	.0006	.06	.8027
		None	14.10	1.58			
	1 st FWPE Section 7	Any	24.93	3.76	.0078	.88	.3514
		None	25.51	2.86			
	2 nd FWPE Total	Any	143.00	15.43	.0103	1.48	.2264
		None	139.79	12.56			
	2 nd FWPE Section 1	Any	10.75	1.48	.0156	1.75	.1880
		None	10.39	1.35			
	2 nd FWPE Section 2	Any	13.65	1.94	.0208	2.36	.1275
		None	13.14	1.59			
	2 nd FWPE Section 3	Any	32.82	4.26	.0104	1.17	.2819
		None	32.06	3.20			
	2 nd FWPE Section 4	Any	30.59	3.86	.0133	1.50	.2239
		None	29.75	3.34			
	2 nd FWPE Section 5	Any	16.41	2.46	.0034	.38	.5366
		None	16.16	1.81			
	2 nd FWPE Section 6	Any	14.00	1.74	.0138	1.55	.2156
		None	13.61	1.56			
	2 nd FWPE Section 7	Any	25.34	2.76	.0001	.02	.9011
		None	25.28	2.71			

*Statistically significant at p=.10

Table 20

Preadmission Experience with an OT as a Predictor of FWPE Scores

	< 6 months	> 6 months	None	Shadow	R ²	p-value
1 st FWPE- Total	142.41	141.67	140.64	140.63	.0036	.9341
1 st FWPE- Section 1	10.31	10.48	9.71	10.72	.0307	.2928
1 st FWPE Section 2	13.15	13.41	13.00	13.40	.0091	.7803
1 st FWPE Section 3	32.58	32.79	32.80	32.80	.0034	.9388
1 st FWPE Section 4	30.22	30.03	30.64	29.44	.0133	.7156
1 st FWPE Section 5	16.38	16.28	16.21	16.28	.0011	.9886
1 st FWPE Section 6	14.11	13.76	13.93	14.32	.0093	.7721
1 st FWPE Section 7	25.25	25.93	24.57	25.28	.0150	.6124
2 nd FWPE- Total	140.04	142.48	144.14	140.56	.0103	.7435
2 nd FWPE Section 1	10.36	10.75	10.71	10.60	.0145	.6295
2 nd FWPE Section 2	13.25	13.57	13.79	13.12	.0158	.5967
2 nd FWPE Section 3	31.91	33.21	33.57	32.08	.0310	.2919
2 nd FWPE Section 4	29.71	30.25	30.86	30.32	.0116	.7088
2 nd FWPE Section 5	16.31	16.43	16.07	16.40	.0026	.9593
2 nd FWPE Section 6	13.62	13.93	13.64	13.60	.0063	.8612
2 nd FWPE Section 7	25.11	25.36	25.79	25.24	.0058	.8754

* Statistically significant at p=.1

Conversely, statistical analysis did reveal several significant results in regards to an applicant's response to previous patient contact, related healthcare, and community service. Tables 21, 22, and 23 contain the results for these analyses. For the variable of patient contact, four of seven subsections of the 2nd FWPE, and the total 2nd FWPE score, indicated that the mean scores for applicants with *no* patient contact were higher than those who did have patient contact prior to applying to the occupational therapy program

(Table 21). Similar results were detected for applicants in the area of related healthcare experience as indicated in Table 22. Applicants who indicated that they did *not* have any previous experience in related healthcare environments received statistically significant higher mean total scores on the 1st and 2nd FWPE, as well as multiple subsections (see Table 22 below). Students who did *not* participate in community service also received statistically significant higher mean scores on section 6 of the 2nd FWPE than those who were involved in community service activities. The data results for community service are located in Table 23.

Table 21

Results from Patient Contact and FWPE Scores

			Mean	SD	R ²	T or F Statistic	p-value																																																																																																																																																																															
Patient Contact	1 st FWPE Total	Yes	141.14	12.03	.0019	.23	.6350																																																																																																																																																																															
		No	142.86	17.04					1 st FWPE Section 1	Yes	10.38	1.28	.0081	.98	.3239		No	9.93	3.20		1 st FWPE Section 2	Yes	13.19	1.56	.0011	.13	.7179		No	13.36	1.78		1 st FWPE Section 3	Yes	32.49	3.26	.0008	.09	.7606		No	32.79	4.39		1 st FWPE Section 4	Yes	29.81	3.21	.0148	1.80	.1822		No	31.07	4.10		1 st FWPE Section 5	Yes	16.29	1.76	.0001	.02	.8966		No	16.36	2.76		1 st FWPE Section 6	Yes	13.97	2.08	.0015	.18	.6762		No	14.21	1.67		1 st FWPE Section 7	Yes	25.38	3.18	.0044	.53	.4677		No	24.71	3.47		2 nd FWPE Total	Yes	139.90	13.77	.0391	4.89	.0290*		No	148.64	15.14		2 nd FWPE Section 1	Yes	10.47	1.42	.0053	.64	.4269		No	10.79	1.25		2 nd FWPE Section 2	Yes	13.23	1.74	.0199	2.42	.1223		No	14.00	1.66		2 nd FWPE Section 3	Yes	32.10	3.56	.0439	5.47	.0210*		No	34.57	4.78		2 nd FWPE Section 4	Yes	29.76	3.51	.0350	4.32	.0398*		No	31.86	3.90		2 nd FWPE Section 5	Yes	16.27	2.05	.0013	.15	.6991		No	16.50	2.31		2 nd FWPE Section 6	Yes	13.58	1.63	.0228	2.77	.0950*		No	14.36	1.74		2 nd FWPE Section 7	Yes	25.08	2.72	.0270	3.30
	1 st FWPE Section 1	Yes	10.38	1.28	.0081	.98	.3239																																																																																																																																																																															
		No	9.93	3.20					1 st FWPE Section 2	Yes	13.19	1.56	.0011	.13	.7179		No	13.36	1.78		1 st FWPE Section 3	Yes	32.49	3.26	.0008	.09	.7606		No	32.79	4.39		1 st FWPE Section 4	Yes	29.81	3.21	.0148	1.80	.1822		No	31.07	4.10		1 st FWPE Section 5	Yes	16.29	1.76	.0001	.02	.8966		No	16.36	2.76		1 st FWPE Section 6	Yes	13.97	2.08	.0015	.18	.6762		No	14.21	1.67		1 st FWPE Section 7	Yes	25.38	3.18	.0044	.53	.4677		No	24.71	3.47		2 nd FWPE Total	Yes	139.90	13.77	.0391	4.89	.0290*		No	148.64	15.14		2 nd FWPE Section 1	Yes	10.47	1.42	.0053	.64	.4269		No	10.79	1.25		2 nd FWPE Section 2	Yes	13.23	1.74	.0199	2.42	.1223		No	14.00	1.66		2 nd FWPE Section 3	Yes	32.10	3.56	.0439	5.47	.0210*		No	34.57	4.78		2 nd FWPE Section 4	Yes	29.76	3.51	.0350	4.32	.0398*		No	31.86	3.90		2 nd FWPE Section 5	Yes	16.27	2.05	.0013	.15	.6991		No	16.50	2.31		2 nd FWPE Section 6	Yes	13.58	1.63	.0228	2.77	.0950*		No	14.36	1.74		2 nd FWPE Section 7	Yes	25.08	2.72	.0270	3.30	.0716*		No	26.50	2.88							
	1 st FWPE Section 2	Yes	13.19	1.56	.0011	.13	.7179																																																																																																																																																																															
		No	13.36	1.78					1 st FWPE Section 3	Yes	32.49	3.26	.0008	.09	.7606		No	32.79	4.39		1 st FWPE Section 4	Yes	29.81	3.21	.0148	1.80	.1822		No	31.07	4.10		1 st FWPE Section 5	Yes	16.29	1.76	.0001	.02	.8966		No	16.36	2.76		1 st FWPE Section 6	Yes	13.97	2.08	.0015	.18	.6762		No	14.21	1.67		1 st FWPE Section 7	Yes	25.38	3.18	.0044	.53	.4677		No	24.71	3.47		2 nd FWPE Total	Yes	139.90	13.77	.0391	4.89	.0290*		No	148.64	15.14		2 nd FWPE Section 1	Yes	10.47	1.42	.0053	.64	.4269		No	10.79	1.25		2 nd FWPE Section 2	Yes	13.23	1.74	.0199	2.42	.1223		No	14.00	1.66		2 nd FWPE Section 3	Yes	32.10	3.56	.0439	5.47	.0210*		No	34.57	4.78		2 nd FWPE Section 4	Yes	29.76	3.51	.0350	4.32	.0398*		No	31.86	3.90		2 nd FWPE Section 5	Yes	16.27	2.05	.0013	.15	.6991		No	16.50	2.31		2 nd FWPE Section 6	Yes	13.58	1.63	.0228	2.77	.0950*		No	14.36	1.74		2 nd FWPE Section 7	Yes	25.08	2.72	.0270	3.30	.0716*		No	26.50	2.88																			
	1 st FWPE Section 3	Yes	32.49	3.26	.0008	.09	.7606																																																																																																																																																																															
		No	32.79	4.39					1 st FWPE Section 4	Yes	29.81	3.21	.0148	1.80	.1822		No	31.07	4.10		1 st FWPE Section 5	Yes	16.29	1.76	.0001	.02	.8966		No	16.36	2.76		1 st FWPE Section 6	Yes	13.97	2.08	.0015	.18	.6762		No	14.21	1.67		1 st FWPE Section 7	Yes	25.38	3.18	.0044	.53	.4677		No	24.71	3.47		2 nd FWPE Total	Yes	139.90	13.77	.0391	4.89	.0290*		No	148.64	15.14		2 nd FWPE Section 1	Yes	10.47	1.42	.0053	.64	.4269		No	10.79	1.25		2 nd FWPE Section 2	Yes	13.23	1.74	.0199	2.42	.1223		No	14.00	1.66		2 nd FWPE Section 3	Yes	32.10	3.56	.0439	5.47	.0210*		No	34.57	4.78		2 nd FWPE Section 4	Yes	29.76	3.51	.0350	4.32	.0398*		No	31.86	3.90		2 nd FWPE Section 5	Yes	16.27	2.05	.0013	.15	.6991		No	16.50	2.31		2 nd FWPE Section 6	Yes	13.58	1.63	.0228	2.77	.0950*		No	14.36	1.74		2 nd FWPE Section 7	Yes	25.08	2.72	.0270	3.30	.0716*		No	26.50	2.88																															
	1 st FWPE Section 4	Yes	29.81	3.21	.0148	1.80	.1822																																																																																																																																																																															
		No	31.07	4.10					1 st FWPE Section 5	Yes	16.29	1.76	.0001	.02	.8966		No	16.36	2.76		1 st FWPE Section 6	Yes	13.97	2.08	.0015	.18	.6762		No	14.21	1.67		1 st FWPE Section 7	Yes	25.38	3.18	.0044	.53	.4677		No	24.71	3.47		2 nd FWPE Total	Yes	139.90	13.77	.0391	4.89	.0290*		No	148.64	15.14		2 nd FWPE Section 1	Yes	10.47	1.42	.0053	.64	.4269		No	10.79	1.25		2 nd FWPE Section 2	Yes	13.23	1.74	.0199	2.42	.1223		No	14.00	1.66		2 nd FWPE Section 3	Yes	32.10	3.56	.0439	5.47	.0210*		No	34.57	4.78		2 nd FWPE Section 4	Yes	29.76	3.51	.0350	4.32	.0398*		No	31.86	3.90		2 nd FWPE Section 5	Yes	16.27	2.05	.0013	.15	.6991		No	16.50	2.31		2 nd FWPE Section 6	Yes	13.58	1.63	.0228	2.77	.0950*		No	14.36	1.74		2 nd FWPE Section 7	Yes	25.08	2.72	.0270	3.30	.0716*		No	26.50	2.88																																											
	1 st FWPE Section 5	Yes	16.29	1.76	.0001	.02	.8966																																																																																																																																																																															
		No	16.36	2.76					1 st FWPE Section 6	Yes	13.97	2.08	.0015	.18	.6762		No	14.21	1.67		1 st FWPE Section 7	Yes	25.38	3.18	.0044	.53	.4677		No	24.71	3.47		2 nd FWPE Total	Yes	139.90	13.77	.0391	4.89	.0290*		No	148.64	15.14		2 nd FWPE Section 1	Yes	10.47	1.42	.0053	.64	.4269		No	10.79	1.25		2 nd FWPE Section 2	Yes	13.23	1.74	.0199	2.42	.1223		No	14.00	1.66		2 nd FWPE Section 3	Yes	32.10	3.56	.0439	5.47	.0210*		No	34.57	4.78		2 nd FWPE Section 4	Yes	29.76	3.51	.0350	4.32	.0398*		No	31.86	3.90		2 nd FWPE Section 5	Yes	16.27	2.05	.0013	.15	.6991		No	16.50	2.31		2 nd FWPE Section 6	Yes	13.58	1.63	.0228	2.77	.0950*		No	14.36	1.74		2 nd FWPE Section 7	Yes	25.08	2.72	.0270	3.30	.0716*		No	26.50	2.88																																																							
	1 st FWPE Section 6	Yes	13.97	2.08	.0015	.18	.6762																																																																																																																																																																															
		No	14.21	1.67					1 st FWPE Section 7	Yes	25.38	3.18	.0044	.53	.4677		No	24.71	3.47		2 nd FWPE Total	Yes	139.90	13.77	.0391	4.89	.0290*		No	148.64	15.14		2 nd FWPE Section 1	Yes	10.47	1.42	.0053	.64	.4269		No	10.79	1.25		2 nd FWPE Section 2	Yes	13.23	1.74	.0199	2.42	.1223		No	14.00	1.66		2 nd FWPE Section 3	Yes	32.10	3.56	.0439	5.47	.0210*		No	34.57	4.78		2 nd FWPE Section 4	Yes	29.76	3.51	.0350	4.32	.0398*		No	31.86	3.90		2 nd FWPE Section 5	Yes	16.27	2.05	.0013	.15	.6991		No	16.50	2.31		2 nd FWPE Section 6	Yes	13.58	1.63	.0228	2.77	.0950*		No	14.36	1.74		2 nd FWPE Section 7	Yes	25.08	2.72	.0270	3.30	.0716*		No	26.50	2.88																																																																			
	1 st FWPE Section 7	Yes	25.38	3.18	.0044	.53	.4677																																																																																																																																																																															
		No	24.71	3.47					2 nd FWPE Total	Yes	139.90	13.77	.0391	4.89	.0290*		No	148.64	15.14		2 nd FWPE Section 1	Yes	10.47	1.42	.0053	.64	.4269		No	10.79	1.25		2 nd FWPE Section 2	Yes	13.23	1.74	.0199	2.42	.1223		No	14.00	1.66		2 nd FWPE Section 3	Yes	32.10	3.56	.0439	5.47	.0210*		No	34.57	4.78		2 nd FWPE Section 4	Yes	29.76	3.51	.0350	4.32	.0398*		No	31.86	3.90		2 nd FWPE Section 5	Yes	16.27	2.05	.0013	.15	.6991		No	16.50	2.31		2 nd FWPE Section 6	Yes	13.58	1.63	.0228	2.77	.0950*		No	14.36	1.74		2 nd FWPE Section 7	Yes	25.08	2.72	.0270	3.30	.0716*		No	26.50	2.88																																																																															
	2 nd FWPE Total	Yes	139.90	13.77	.0391	4.89	.0290*																																																																																																																																																																															
		No	148.64	15.14					2 nd FWPE Section 1	Yes	10.47	1.42	.0053	.64	.4269		No	10.79	1.25		2 nd FWPE Section 2	Yes	13.23	1.74	.0199	2.42	.1223		No	14.00	1.66		2 nd FWPE Section 3	Yes	32.10	3.56	.0439	5.47	.0210*		No	34.57	4.78		2 nd FWPE Section 4	Yes	29.76	3.51	.0350	4.32	.0398*		No	31.86	3.90		2 nd FWPE Section 5	Yes	16.27	2.05	.0013	.15	.6991		No	16.50	2.31		2 nd FWPE Section 6	Yes	13.58	1.63	.0228	2.77	.0950*		No	14.36	1.74		2 nd FWPE Section 7	Yes	25.08	2.72	.0270	3.30	.0716*		No	26.50	2.88																																																																																											
	2 nd FWPE Section 1	Yes	10.47	1.42	.0053	.64	.4269																																																																																																																																																																															
		No	10.79	1.25					2 nd FWPE Section 2	Yes	13.23	1.74	.0199	2.42	.1223		No	14.00	1.66		2 nd FWPE Section 3	Yes	32.10	3.56	.0439	5.47	.0210*		No	34.57	4.78		2 nd FWPE Section 4	Yes	29.76	3.51	.0350	4.32	.0398*		No	31.86	3.90		2 nd FWPE Section 5	Yes	16.27	2.05	.0013	.15	.6991		No	16.50	2.31		2 nd FWPE Section 6	Yes	13.58	1.63	.0228	2.77	.0950*		No	14.36	1.74		2 nd FWPE Section 7	Yes	25.08	2.72	.0270	3.30	.0716*		No	26.50	2.88																																																																																																							
	2 nd FWPE Section 2	Yes	13.23	1.74	.0199	2.42	.1223																																																																																																																																																																															
		No	14.00	1.66					2 nd FWPE Section 3	Yes	32.10	3.56	.0439	5.47	.0210*		No	34.57	4.78		2 nd FWPE Section 4	Yes	29.76	3.51	.0350	4.32	.0398*		No	31.86	3.90		2 nd FWPE Section 5	Yes	16.27	2.05	.0013	.15	.6991		No	16.50	2.31		2 nd FWPE Section 6	Yes	13.58	1.63	.0228	2.77	.0950*		No	14.36	1.74		2 nd FWPE Section 7	Yes	25.08	2.72	.0270	3.30	.0716*		No	26.50	2.88																																																																																																																			
	2 nd FWPE Section 3	Yes	32.10	3.56	.0439	5.47	.0210*																																																																																																																																																																															
		No	34.57	4.78					2 nd FWPE Section 4	Yes	29.76	3.51	.0350	4.32	.0398*		No	31.86	3.90		2 nd FWPE Section 5	Yes	16.27	2.05	.0013	.15	.6991		No	16.50	2.31		2 nd FWPE Section 6	Yes	13.58	1.63	.0228	2.77	.0950*		No	14.36	1.74		2 nd FWPE Section 7	Yes	25.08	2.72	.0270	3.30	.0716*		No	26.50	2.88																																																																																																																															
	2 nd FWPE Section 4	Yes	29.76	3.51	.0350	4.32	.0398*																																																																																																																																																																															
		No	31.86	3.90					2 nd FWPE Section 5	Yes	16.27	2.05	.0013	.15	.6991		No	16.50	2.31		2 nd FWPE Section 6	Yes	13.58	1.63	.0228	2.77	.0950*		No	14.36	1.74		2 nd FWPE Section 7	Yes	25.08	2.72	.0270	3.30	.0716*		No	26.50	2.88																																																																																																																																											
	2 nd FWPE Section 5	Yes	16.27	2.05	.0013	.15	.6991																																																																																																																																																																															
		No	16.50	2.31					2 nd FWPE Section 6	Yes	13.58	1.63	.0228	2.77	.0950*		No	14.36	1.74		2 nd FWPE Section 7	Yes	25.08	2.72	.0270	3.30	.0716*		No	26.50	2.88																																																																																																																																																							
	2 nd FWPE Section 6	Yes	13.58	1.63	.0228	2.77	.0950*																																																																																																																																																																															
		No	14.36	1.74					2 nd FWPE Section 7	Yes	25.08	2.72	.0270	3.30	.0716*		No	26.50	2.88																																																																																																																																																																			
	2 nd FWPE Section 7	Yes	25.08	2.72	.0270	3.30	.0716*																																																																																																																																																																															
		No	26.50	2.88																																																																																																																																																																																		

*Significant at p=.1

Table 17

Results from Related Healthcare Experience and FWPE Scores

			Mean	SD	R ²	T or F Statistic	p- value
Related Healthcare Experience	1 st FWPE Total	Yes	138.10	11.29	.0496	6.21	.0141*
		No	143.86	13.23			
	1 st FWPE Section 1	Yes	10.16	1.22	.0095	1.16	.2844
		No	10.47	1.82			
	1 st FWPE Section 2	Yes	13.00	1.40	.0157	1.93	.1671
		No	13.40	1.70			
	1 st FWPE Section 3	Yes	31.80	3.18	.0365	4.63	.0334*
		No	33.14	3.53			
	1 st FWPE Section 4	Yes	29.24	3.01	.0369	4.64	.0332*
		No	30.54	3.51			
	1 st FWPE Section 5	Yes	15.94	1.79	.0250	3.10	.0810*
		No	16.54	1.91			
	1 st FWPE Section 6	Yes	13.63	1.52	.0262	3.26	.0735*
		No	14.29	2.29			
	1 st FWPE Section 7	Yes	25.04	3.25	.0057	.69	.4071
		No	25.53	3.18			
	2 nd FWPE Total	Yes	136.90	12.84	.0615	7.92	.0057*
		No	144.03	14.49			
	2 nd FWPE Section 1	Yes	10.14	1.37	.0503	6.36	.0130*
		No	10.78	1.38			
	2 nd FWPE Section 2	Yes	12.92	1.51	.0410	5.14	.0252*
		No	13.64	1.86			
	2 nd FWPE Section 3	Yes	31.24	3.37	.0673	8.65	.0039*
		No	33.22	3.85			
	2 nd FWPE Section 4	Yes	29.04	3.25	.0536	6.80	.0103*
		No	30.74	3.72			
	2 nd FWPE Section 5	Yes	16.10	2.02	.0083	1.01	.3178
		No	16.49	2.14			
2 nd FWPE Section 6	Yes	13.28	1.68	.0423	5.30	.0230*	
	No	13.97	1.60				
2 nd FWPE Section 7	Yes	24.50	3.07	.0543	6.89	.0098*	
	No	25.81	2.41				

*Statistically significant at p=.10

Table 18

Results of Community Service and FWPE Scores

			Mean	SD	R ²	T or F Statistic	p- value
Community Service	1 st FWPE Total	Yes	140.38	12.33	.0205	2.47	.1186
		No	144.23	13.27			
	1 st FWPE Section 1	Yes	10.28	1.30	.0042	.5	.4806
		No	10.50	2.11			
	1 st FWPE Section 2	Yes	13.18	1.56	.0053	.64	.4258
		No	13.43	1.60			
	1 st FWPE Section 3	Yes	32.40	3.43	.0072	.88	.3511
		No	33.03	3.48			
	1 st FWPE Section 4	Yes	29.77	3.09	.0128	1.56	.2142
		No	30.58	3.84			
	1 st FWPE Section 5	Yes	16.18	1.83	.0084	1.02	.3145
		No	16.55	1.99			
	1 st FWPE Section 6	Yes	13.68	1.55	.0528	6.69	.0109*
		No	14.68	2.67			
	1 st FWPE Section 7	Yes	25.28	2.79	.0013	.16	.6931
		No	25.53	3.93			
	2 nd FWPE Total	Yes	141.27	14.31	.0007	.08	.7743
		No	140.48	14.31			
	2 nd FWPE Section 1	Yes	10.53	1.41	.0001	.01	.9103
		No	10.50	1.41			
	2 nd FWPE Section 2	Yes	13.46	1.80	.0068	.82	.3680
		No	13.15	1.67			
	2 nd FWPE Section 3	Yes	32.48	3.71	.0008	.10	.7534
		No	32.25	3.99			
	2 nd FWPE Section 4	Yes	29.95	3.47	.0003	.03	.8586
		No	30.08	3.87			
	2 nd FWPE Section 5	Yes	16.41	2.09	.0022	.26	.6106
		No	16.20	2.13			
2 nd FWPE Section 6	Yes	13.63	1.68	.0012	.14	.7084	
	No	13.75	1.61				
2 nd FWPE Section 7	Yes	13.63	1.68	.0012	.14	.7084	
	No	13.75	1.61				

*Significant at p=.1

Sub-question 2: To what degree can non-cognitive variables predict graduate performance on the departmental exit examination? Statistical analysis was conducted to determine the relationship, if any, that non-cognitive variables had with the student results on the departmental exit examination. Analysis indicated that neither previous experience nor the autobiographical essay score were statistically significant for use as

predictor variables for the department exit examination. Table 24 contains the results of non-cognitive variables as predictors of the department exit exam scores.

Table 19

Non-Cognitive Variables as Predictors of Exit Exam Scores

Independent Variable	Level	Mean	SD	Slope	SE	R ²	T or F statistic	p-value
Essay Score				1.00	0.64	0.0199	1.55	0.1231
Patient Contact Experience	No	72.58	5.06			0.0102	1.24	0.2681
	Yes	74.56	6.38					
Related Healthcare Experience	No	74.38	6.06			0.0000	0.00	0.9544
	Yes	74.31	6.53					
Community Service	No	73.39	6.26			0.0127	1.54	0.2166
	Yes	74.88	6.21					
Additional Experience	Any	73.85	5.48			0.0017	0.19	0.6619
	None	74.40	7.01					
Experience Type	Employed <6mo	74.80	6.16			0.0330	1.35	0.2608
	Employed >6mo	75.19	5.82					
	None	71.5	6.21					
	Shadowed	73.56	6.65					

Sub-question 3: To what degree can non-cognitive variables predict graduate performance on the NBCOT examination? The primary investigator analyzed the data to determine if non-cognitive variables could be used to predict first time pass rate on the NBCOT examination. Statistical analysis was conducted using simple logistic regression due to the dichotomous dependent variable of first time pass rate on the NBCOT exam. These results may be found in Table 25. One statistically significant association was found for this combination of variables. Occupational therapy students who indicated that

they had participated in community service on their admission application were 0.17 times less likely to pass the NBCOT exam on the first attempt than those with no community service. No other significant associations were found in regard to non-cognitive variables and first time pass rates on the national certification examination.

Table 20

Non-Cognitive Variables and First Time Pass Rate on NBCOT Exam

Independent Variable	Level	Odds Ratio	95% CI		p-value
			Lower	Upper	
Essay Score		1.15	0.60	2.20	0.6843
Patient Contact Experience	No (ref)	1.00			0.5558
	Yes	1.63	0.32	8.36	
Related Healthcare Experience	No (ref)	1.00			0.2198
	Yes	0.47	0.14	1.57	
Community Service	No (ref)	1.00			0.0907*
	Yes	0.17	0.02	1.33	
Additional Experience	Any	2.02	0.52	7.90	0.3140
	None (ref)	1.00			
Experience Type	Employed <6mo	2.73	0.57	13.15	0.5026
	Employed >6mo	3.68	0.54	25.16	
	Shadowed	3.14	0.46	21.57	
	None (ref)	1.00			

*Significant at $p=.1$

Question Four

The overarching research question for this study was to determine which variables collected at the time of admission could be utilized as predictor variables for success in the pre-licensure requirements for occupational therapy. Pre-licensure requirements were

operationally defined to include the fieldwork performance evaluations (FWPE), the department exit examination, and first time pass rate on the National Board for Certification in Occupational Therapy examination. However, it became clear to the investigator that the FWPE and department exit examination could also be used as predictor variables for the NBCOT examination. The individuals in the specified program were still in the student role while completing the fieldwork rotations and the department exit exam. Therefore, if these variables were identified as predictors of NBCOT success, the department could identify students who may need additional support prior to sitting for their national certification examination.

Consequently, the primary investigator chose to examine the association between both the department exit exam and FWPE scores with the NBCOT examination. Since the exit exam and FWPE scores were continuous variables, simple linear regression analyses were used to determine the association between these variables and the NBCOT score. For the departmental exit examination, statistically significant associations were found at $p=.0090$, indicating that as the exit exam score increased by one unit, the student was 1.15 times more likely to pass the NBCOT on the first attempt. There were no statistically significant results for the 1st or 2nd FW score and the first time pass rate on the NBCOT examination.

The primary investigator conducted a simple logistic regression model to determine which of the predictor variables were significantly associated with students being successful on all measures of pre-licensure. Four significant associations were identified with an additional association approaching significance. Table 26 contains the results of the simple logistic regression for the independent variables that were significant

for passing all pre-licensure requirements (1st FWPE, 2nd FWPE, departmental exit exam, and first time pass on the NBCOT exam). The predictor variable of college attended, according to the Basic Carnegie Classification of Institutions, and overall GPA approached significance for students to pass all pre-licensure requirements. These results are also located in Table 26.

Table 21

Results for Passing All Pre-licensure Requirements

Independent Variable	Level	Odds Ratio	95% CI		p-value
			Lower	Upper	
Math / Science GPA		3.26	1.31	8.12	.0111*
GPA		2.81	0.81	9.68	.1022
GRE – Verbal		1.00	0.99	1.01	.1351
GRE – Math		1.01	1.00	1.01	.0018*
GRE – Writing		1.20	0.69	2.08	.5219
Total Credit Hours		1.00	0.99	1.01	.9744
Essay Score		1.50	0.98	2.30	.0631*
Degree	No (ref)	1.00			.9841
	Yes	1.01	0.49	2.06	
Major	Education	0.90	0.31	2.61	.9735
	Sciences	0.93	0.43	2.01	
	Other (ref)	1.00			
Kinesiology Degree	No (ref)	1.00			.2433
	Yes	1.72	0.69	4.29	
College Group	Private	3.67	0.73	18.33	.2943
	Public Non-GA	3.26	0.66	16.03	
	Regional University	7.33	1.38	38.88	
	Research University	2.62	0.58	11.89	
	State University	2.44	0.58	10.37	
	State College (ref)	1.00			
Carnegie Classification	Associate Degree	1.79	0.287	11.13	.1049
	College				
	Masters College or University	4.80	0.952	24.21	
	Doctorate Granting University	4.58	0.903	23.27	
	Baccalaureate College (ref)	1.00			
Patient Contact Experience	No (ref)	1.00			.3090
	Yes	1.89	0.556	6.39	
Related Healthcare Experience	No (ref)	1.00			.7365
	Yes	0.88	0.424	1.84	
Community Service	No (ref)	1.00			.9561
	Yes	0.98	0.455	2.11	
Additional Experience	Any	0.67	0.308	1.48	.3243
	None (ref)	1.00			
Experience Type	Employed <6mo	3.16	0.792	12.62	.2483
	Employed >6mo	3.42	0.787	14.88	
	Shadowed	1.73	0.374	7.96	
	None (ref)	1.00			

*Significant at p=.1

Results of Regression Models

Multiple regression analysis was conducted in order to determine the association between multiple admission variables on the pre-licensure requirements. Because these predictor variables do not exist independently of one another, it was necessary to see the correlation between multiple predictor variables (admission variables) and each of the pre-licensure outcomes. Results from the simple linear analysis were used to determine which independent variables would be included in the multiple regression analysis (McDonald, 2009). Consequently, those variables that were statistically significant at the .10 alpha level during simple linear regression were considered for multiple regression analysis. Linear regression models were used for continuous outcome measures where more than one independent variable was statistically significant at the .1 alpha level in simple linear analysis. Logistic regression models were used to determine the extent of the association between independent variables and categorical, or dichotomous, outcome measures.

Table 27 contains the results for the regression models for the continuous outcomes of the FWPE and the departmental exit exam. Several scores resulted in simple models because of the limited number of significant variables from the simple linear regression process. Numerous FWPE sections, and the 2nd FWPE total score, had statistically significant results following the full linear regression analysis. For the exit exam the final model resulted in a simple model containing only college grouping and the Carnegie classification. Students who attended a state college (USG ranking system) or those who attended a Carnegie associate degree or baccalaureate institution had significantly lower mean exit exam scores than others.

Table 28 contains the results of the full logistic regression models for each categorical outcome measure (NBCOT and pass all pre-licensure requirements) where more than one independent variable was statistically significant at the 0.10 alpha level during simple linear analysis. Some of the full models resulted in simple models since only variables which were statistically significant at the 0.10 level were considered for the multiple logistic regression model. For the outcome variable of passing the NBCOT exam on the 1st attempt, GRE-verbal, and GRE-math scores remained in the final model. Additionally, the exit exam remained the only other statistically significant variable in the final model thereby indicating that the GRE scores (verbal and math) and the exit exam score were the most significant predictors of performance on the NBCOT pass rate.

Table 27

Regression Models for Continuous Outcome Measures

Outcome	Independent Variable	Level	Mean	SD	Slope	SE	Model R ²	F statistic	p-value
Fieldwork Placement 1 st Level II – Section 3 Score	College Group	Private	31.94	2.49			0.1013	1.71	0.1373
		Public Non-GA	34.00	4.15					
		Regional University	34.00	3.61					
		Research University	31.86	3.01					
		State University	31.67	2.55					
	State College	33.15	5.11						
	Related Healthcare Experience	Yes	31.80	3.21			2.36	0.1278	
		No	33.00	3.49					
Fieldwork Placement 1 st Level II – Section 4 Score	Total Credits				-0.02	0.01	0.0689	4.38	0.0385*
	Related Healthcare Experience	Yes	29.30	3.01				3.81	0.0533*
		No	30.56	3.53					
Fieldwork Placement 2 nd Level II – Total Score	GPA				7.63	4.29	0.1399	3.16	0.0781*
	Math & Science GPA				0.02	0.01		2.55	0.1127
	Patient Contact Experience	Yes	139.90	13.77				5.99	0.0158*
		No	148.64	1.14					

	Related Health Care Experience	Yes	136.90	12.84				4.33	0.0395*	
		No	143.77	14.43						
Fieldwork Placement 2 nd Level II – Section 2 Score	GPA				1.32	1.01	0.0730	1.71	0.1930	
	Math & Science GPA				0.04	0.07		0.00	0.9599	
	Patient Contact Experience	Yes	13.23	1.74					3.64	0.0590*
		No	14.00	1.66						
Fieldwork Placement 2 nd Level II – Section 3 Score	GPA				1.23	1.13	0.1839	1.17	0.2807	
	GRE – Quantitative				0.01	0.01		4.77	0.0310*	
	Total Credits				-0.02	1.01		2.03	0.1566	
	Patient Contact Experience	Yes	32.05	3.50					5.41	0.0218*
		No	34.57	4.78						
	Related Health Care Experience	Yes	31.06	3.16					6.94	0.0096*
No		33.24	3.88							
Fieldwork Placement 2 nd Level II – Section 4 Score	GPA				2.11	1.07	0.1826	3.87	0.0517*	
	Total Credits				-0.01	0.01		1.12	0.2925	
	Major	Education	31.80	3.56					3.78	0.0258*
		Sciences	29.72	3.68						
		Other	29.32	3.16						
	Patient Contact Experience	Yes	29.72	3.48					2.27	0.1350
		No	31.54	3.86						
	Related Health Care Experience	Yes	28.90	3.12					5.21	0.0244*
No		30.65	3.68							

Fieldwork Placement 2 nd Level II – Section 5 Score	Total Credits		-0.01	0.01			0.0270	3.02	0.0851*	
	Patient Contact Experience	Yes	16.24	2.04				0.02	0.8889*	
		No	16.50	2.31						
Fieldwork Placement 2 nd Level II – Section 6 Score	GPA				1.97	0.94	0.1614	0.74	0.3912	
	Math & Science GPA				-0.58	0.67		4.34	0.0393*	
	GRE – Quantitative				0.01	0.01		5.33	0.0227*	
	Patient Contact Experience	Yes	13.58	1.63					4.73	0.0316*
		No	14.36	1.74						
	Related Health Care Experience	Yes	13.28	1.68					1.75	0.1882
		No	13.94	1.59						
Fieldwork Placement 2 nd Level II – Section 7 Score	GRE – Quantitative				0.01	0.01	0.1752	4.72	0.0319*	
	Total Credits				-0.03	0.01		8.82	0.0037*	
	Patient Contact Experience	Yes	25.02	2.73					2.06	0.1543
		No	26.50	2.88						
	Related Health Care Experience	Yes	24.38	3.07					5.26	0.0237*
		No	25.75	2.43						
	Community Experience	Yes	25.10	2.88					0.00	0.9503
No		25.38	2.61							
Exit Exam	GPA				-0.27	3.75	0.2395	0.01	0.3126	
	Math & Science GPA				2.81	2.77		1.03	0.9428	
	GRE – Quantitative				-0.01	0.01		0.01	0.9378	
	Kinesiology Degree	Yes	76.60	6.79					1.66	0.2004
		No	73.96	6.39						

	College Group	Private	75.48	8.16			2.26	0.0540*
		Public Non-GA	75.76	7.06				
		Regional University	75.52	4.61				
		Research University	74.67	5.23				
		State University	74.99	6.35				
		State College	68.83	6.14				
	Carnegie Classification	Associate Degree College	70.67	7.67			4.02	0.0095*
		Masters College or University	75.55	6.09				
		Doctorate University	75.66	5.88				
		Baccalaureate College	69.54	6.15				

*Significant at p=.1

Table 22

Results of Regression Analysis for Categorical Outcomes

Outcome	Independent Variable	Level	Odds	95% CI		p-value
				Lower	Upper	
NBCOT Pass on 1 st Attempt	GPA		6.57	0.01	NE	0.5874
	Math & Science GPA		0.90	0.01	101.17	0.9659
	GRE – Verbal		1.04	1.00	1.09	0.0331*
	GRE – Quantitative		1.02	1.00	1.03	0.0305*
	GRE – Writing		0.24	0.02	3.65	0.3006
	Exit Exam		1.28	1.04	1.58	0.0188*
	Carnegie Classification	Associate Degree College	0.01	0.01	2.76	0.2936
		Masters College or University	0.02	ME	1.36	
		Doctorate University	0.03	NE	1.49	
		Baccalaureate College	1.00			
	Community Service	Yes	NE	NE	NE	0.9411
		No	1.00			
Pass All Exams	Math & Science GPA		1.88	0.70	5.03	0.2125
	GRE – Quantitative		1.01	1.00	1.01	0.0083*
	Essay Score		1.36	0.86	2.14	0.1835

*Significant at p=.1

Summary

Occupational therapy programs are faced with the daunting task of having to select the best applicants from increasing numbers of qualified applicants each year. As the profession itself becomes more established, and recognized by public sources such as U.S News & World Reports, programs will be faced with even larger applicant pools from which to select. For the occupational therapy program utilized in this research study, current admission policies had not been analyzed to determine if they are selecting students who will be successful. In order to provide evidence to justify the admissions practices utilized, this study analyzed existing data from students who were enrolled, and graduated, from one graduate level occupational therapy program. The primary investigator examined the variables considered during the admission process to determine if they were associated with success in the pre-licensure requirements for the profession. Specifically, the investigator examined whether prior collegiate performance (overall GPA, math/science GPA, total credit hours prior to admission, prior degree, undergraduate major, and college attended), GRE performance (verbal, math, and writing score), and non-cognitive variables (previous experience and faculty rating on autobiographical essay) could be used as predictor variables for success on pre-licensure requirements.

Data from an existing admission database for the occupational therapy department were collected and analyzed using SAS 9.3. All available data were utilized for students who were accepted and enrolled in the identified occupational therapy graduate program from August 2006 until August 2011, yielding a sample of 129. Of this sample, 93.02% were female and 6.98% male OT students. The sample had a mean age of 23.43 years at

the time of admission into the OT program. Students admitted during this time frame had a mean GPA of 3.49 with a mean math/science GPA of 3.26. Students earned a mean of 119.09 college credit hours prior to enrollment; 41.86% of accepted students had previously earned a college degree, and 47.24% had science related majors. More than half of all applicants (59.01%, N=75) attended a research university, a regional university, or a state university within the USG system; 85.04% (N=108) students attended undergraduate institutions that were ranked at the baccalaureate level or higher on the Basic Carnegie Classification of Institutions, 89.43% of students admitted to the OT program reported prior experience with an occupational therapist and 38.6% reported that they, or a family member, had received therapy services in the past. Of the students who were admitted, 88.52% reported having prior patient contact, with a mean number of 329.72 contact hours.

The primary investigator found several statistically significant associations ($p \leq .1$) between the independent variables in this study and the pre-licensure requirements. These results will be discussed independently in the following chapter. Admissions variables, which were statistically significant during the simple linear regression analysis, were analyzed using multiple regression to determine the association between combinations of admission variables and the pre-licensure outcomes. The results from the regression models will also be discussed in Chapter V. During simple linear regression, the only prior collegiate performance variable that was significant for all three pre-licensure requirements was the applicant's overall GPA. Data analysis indicated that as the applicant's overall GPA increased, their FWPE scores increased, the exit exam score increased and their first time pass rate on the NBCOT exam also increased. No other

variable in this group was significant for more than one area of pre-licensure. The primary investigator also found just one consistent variable for the GRE as well. The GRE math score significantly increased multiple FWPE subsection scores, the department exit exam score, and the first time pass rate on the NBCOT exam. Data analysis also identified consistent findings for the prior experience variables in this study. Analysis indicated that applicants with previous patient contact experience, related experience, or community service experience had significantly lower FWPE scores than those who did not have these experiences. Linear regression model analysis determined that overall GPA, related experience, college major, total credits, GRE-math, USG college ranking, and Carnegie Classification impacted the FWPE scores and exit exam results. Logistic regression models indicated that the predictor variables of GRE (verbal and math) and the department exit exam were significantly associated with the first time pass rate on the NBCOT exam. Only the GRE-math score was significantly associated with passing all measures of pre-licensure. The interpretation and discussion of these findings will follow in Chapter V, along with implications for the participating department and recommendations for future research.

CHAPTER V

DISCUSSION

As the profession of occupational therapy continues to become more recognized by the public, educational programs will continue to see an increase in the number of applications for enrollment. However, as noted by Auriemma's studies (2002; 2007) there has been little consistency among these programs regarding the variables used when selecting applicants for admission. Variables used to select students for admission must be reliable predictors for student success. Variables, which are not related to student success, complicate the admission process and leave selection committees with a daunting task to select students with little or no guidance. A thorough review of the occupational therapy literature resulted in little evidence to support the most commonly used admission variables within occupational therapy education.

In an effort to bridge the gap between the available evidence and the variables currently used at one graduate level occupational therapy program located in the Southeastern United States, the investigator sought to determine whether select admissions variables could predict graduates' performance on pre-licensure requirements for the profession of occupational therapy. The following admission variables were used for this study: prior collegiate performance (overall GPA, math/science GPA, total credit hours prior to admission, prior degree, undergraduate major, college attended), GRE performance (math, verbal, and writing), non-cognitive variables (previous experience and faculty rating on autobiographical essay). The pre-licensure requirements for this study included fieldwork performance evaluation scores, scores on the comprehensive

department exit exam, and first time pass rate on the national certification examination.

The following research questions guided this study:

1. To what degree can prior collegiate performance predict graduate performance on pre-licensure requirements?
2. To what degree can GRE scores predict graduate performance on pre-licensure requirements?
3. To what degree can non-cognitive variables (previous experience and faculty rating on autobiographical essay) predict graduate performance on pre-licensure requirements?
4. To what degree can the departmental exit exam and fieldwork performance evaluations predict graduate performance on pre-licensure requirements?

This investigator used existing data from students enrolled in one graduate occupational therapy program from August 2006 through August 2011. The sample size for this study was 129 students. IRB approval was secured at Georgia Southern University and the host institution prior to the extraction of data for analysis. Data analysis was completed using SAS 9.3. Since this was a pilot study seeking to describe the relationships between the existing variables, statistical significance was assessed using an alpha level of .10. Descriptive statistics were calculated on all variables to summarize the collected data. Simple linear regression models for continuous independent measures, one-way ANOVA for categorical independent variables, and t-tests for dichotomous independent variables were performed. Simple logistic regression models were used to determine the magnitude of the association with NBCOT pass rates on the first attempt and passing all of the exams with each independent variable. Since

admission variables cannot exist in isolation, variables which were statistically significant ($p \leq .1$) during simple analysis were entered into multiple regression models to identify multiple variables which significantly contributed to success in pre-licensure requirements.

Description of Sample

This study utilized all available data from 129 students who were enrolled in one graduate occupational therapy program in the Southeastern United States from August 2006 through August 2011. Descriptive data analysis indicated that 93.02% ($n=120$) students were female with 6.98% ($n=9$) being male OT students. This percentage differs from the national percentage of 89% female students enrolled in masters level OT programs (AOTA, 2011). However, AOTA workforce studies indicate that 95% of practitioners were females (AOTA, 2006). The mean age of students in this study was 23.43 years.

Prior collegiate performance was a term selected by the investigator to include overall GPA, math/science GPA, total credit hours prior to admission, prior degree, undergraduate major and college attended. Admitted students had a mean overall GPA of 3.49 and a math science GPA of 3.26. The mean GRE scores for this sample were: 434 (GRE-verbal), 529 (GRE-math) and 3.85 (GRE-writing). The average number of credits earned prior to admission was 119, which is just shy of the typical 120 needed for a bachelor's degree. This result is further supported by 41.86% of students having earned a college degree prior to enrollment. The largest percentage of students had a previous major within the science fields, and 18.85% of the study's sample indicated they were kinesiology majors. Twenty-eight percent of students attended a State University from

the USG ranking system. According to the Carnegie Classification System (Basic), 75.59% of students attended a doctoral degree granting university or a masters degree college/university for their undergraduate coursework. Table 29 summarizes the descriptive analysis of prior collegiate performance and GRE results.

The investigator used the term non-cognitive variables to represent the variables of previous experience and faculty ratings on the autobiographical essay submitted at the time of admission. During the data collection and analysis phases, the investigator discovered that applicants were actually required to supply information regarding several types of previous experience on the application. The term “experience type” represents the type of exposure, or experience, an applicant had with an occupational therapist prior to applying to the OT program. Applicant responses for this were categorized in one of the following categories: none, shadowed an OT, volunteered/employed for less than 6 months, volunteered/employed for more than 6 months. Of the sample (n= 124), just 10.57% had no prior experience with an OT. The next variable related to whether an applicant had “additional experience” with therapy. Specifically, applicants were scored on whether they, or a family member, had previously received therapy services. Seventy students (61.40%) reported that neither they, nor a family member, had any previous therapy. For descriptive data analysis, the results were categorized according to whether the student, a family member, or both had received prior therapy. However, due to low frequency in two of the categories, this variable was collapsed into a dichotomous variable (any additional experience, or no additional experience) for data analysis. The third type of experience captured on the admission application related to the applicants’ experience, including the number of hours, in the areas of patient contact, related

healthcare and community service. It is important to note that the application does not provide any qualifiers or descriptors regarding the differences, if any, between these categories. The majority of students (88.52%) reported that they had some patient care experience, whereas only 41.46% reported that they had related healthcare experience. Sixty-seven percent of students participated in community service activities prior to applying to the OT program. Table 30 contains the descriptive summaries of previous patient experience for the study population.

Table 29

Descriptive Statistics of Prior Collegiate Performance

Variable	Level	n	%	Mean	SD
Gender	Female	120	93.02		
	Male	9	6.98		
Age				23.43	4.17
GPA				3.49	0.30
Math/Science GPA				3.26	0.41
Number of Schools				2.69	1.33
GRE – Verbal				424.03	74.55
GRE – Math				529.53	101.56
GRE – Writing				3.85	0.66
Total Credit Hours				119.08	27.54
Degree	No	75	58.14		
	Yes	54	41.86		
Major	Sciences	60	47.24		
	Education	20	15.75		
	Other	47	37.01		
Kinesiology Degree	No	99	81.15		
	Yes	23	18.85		
College Group	Research University	24	18.90		
	Regional University	15	11.81		
	State University	36	28.35		
	State College	14	11.02		
	Two-Year College	3	2.36		
	Public Non-GA	17	13.39		
	Private	16	12.60		
	Two Year Program	2	1.57		
Carnegie Classification	Associate Degree College	19	14.96		
	Doctorate University	46	36.22		
	Masters College Univ	50	39.37		
	Baccalaureate College	12	9.45		

Table 23

Descriptive Statistics of Non-Cognitive Variables

Variable	Level	n	%	Mean	SD
Additional Experience	None	70	61.40		
	Family Received OT/PT	31	27.19		
	Subject Received OT/PT	11	9.65		
	Family & Subjects Received OT/PT	2	1.75		
Experience Type	None	14	11.38		
	Shadowed OT	25	20.33		
	Employed/Volunteered < 6 mo	55	44.72		
	Employed /Volunteered > 6 mo	29	23.58		
Patient Contact Experience	No	14	11.48	329.72	1387.48
	Yes	108	88.52		
Related Health Care Experience	No	72	58.54	385.88	1199.68
	Yes	51	41.46		
Community Service	No	40	32.79	243.42	621.16
	Yes	82	67.21		
Essay Score				4.01	0.90

Summary of Pre-licensure Requirements

Prior to being eligible for licensure, occupational therapy students must complete several requirements outside of the academic classroom. Students must complete a minimum of two 12-week fieldwork experiences. The profession uses the Fieldwork Performance Evaluation (FWPE) to assess a student's entry-level competence. Students must score a minimum of 122 on each of the two FWPE evaluations in order to pass the experience, and be considered eligible for licensure. Students must also pass the national certification exam administered by the National Board for Certification in Occupational Therapy. Scores are reported in pass/fail format only. The Accreditation Council for Occupational Therapy Education (ACOTE®) requires that OT programs publicly display their NBCOT results on their websites and all published material. Students enrolled in the

host institution OT program are also required to pass a departmental exit exam, which is a comprehensive measure of the student's mastery of curriculum objectives. Upon completion of these three requirements, OT graduates are eligible to obtain professional licensure

Data analysis indicated that 97.64% of the sample passed the 1st FWPE and 96.12% passed the 2nd FWPE. AOTA (2011) has reported that the median pass rate for all master's level OT programs through June 2011 is 98%, with individual institutional pass rates ranging from 51% to 100%. Thus, the results from the host institution are slightly lower than the national median score for program pass rates on fieldwork experiences. Data analysis indicated that 89.92% of the study's sample passed the NBCOT exam on the first attempt. National first time pass rates during the 2006-2011 period averaged between 77%-88% (AOTA, 2011). Historically, the host institution has reported first-time pass rates higher than the national average, which is supported by this study and national data results. The results of the department exit exam indicated that 45.74% of students passed the examination. Because the departmental exit exam is an internal programmatic measure, there are no national results to compare with the host institution. However, the exit exam was designed to identify deficit areas for students and to provide remediation activities prior to graduation. Jedlika et al (2000) noted that the exam provides an opportunity for "self-analysis of their mastery of the knowledge and judgment required for practice..." (p.2). Thus, the low percentage of students who passed the exit exam may then contribute to the higher than national average pass rate on the NBCOT exam for the host institution since these students are given early feedback on

deficit areas and opportunities to remediate. Table 31 contains the descriptive data analysis for the pre-licensure requirements analyzed in this study.

Table 24

Descriptive Summary of Pre-licensure Requirements

Variable	Level	n	%	Mean	SD
FWPE 1st	Total Score			141.28	12.73
	Section 1 – Fundamentals of Practice			10.33	1.60
	Section 2 – Basic Tenets			13.22	1.57
	Section 3 – Evaluation and Screening			32.60	3.42
	Section 4 – Intervention			29.96	3.34
	Section 5 – Management of OT Services			16.26	1.87
	Section 6 – Communication			13.96	2.02
	Section 7 – Personal Behaviors			25.26	3.18
FWPE 2nd	Total Score			141.26	14.07
	Section 1 – Fundamentals of Practice			10.55	1.40
	Section 2 – Basic Tenets			13.38	1.74
	Section 3 – Evaluation and Screening			32.51	3.75
	Section 4 – Intervention			30.05	3.60
	Section 5 – Management of OT Services			16.33	2.07
	Section 6 – Communication			13.66	1.65
	Section 7 – Personal Behaviors			25.28	2.75
Exit Exam				74.40	6.43
NBCOT Pass Rate 1st Attempt	No	13	10.08		
	Yes	116	89.92		
Pass FWPE 1st	No	3	2.36		
	Yes	124	97.64		
Pass FWPE 2nd	No	5	3.88		
	Yes	124	96.12		
Pass Exit Exam	No	70	54.26		
	Yes	59	45.74		
Pass All	No	75	58.59		
	Yes	53	41.41		

Interpretation of Results

Statistical analysis yielded many statistically significant results for the association between the predictor variables and the pre-licensure requirements. This section will

discuss these results in relation to the previously reviewed literature. The results will also be interpreted into meaningful information that will serve as foundational knowledge for the host institution to better understand the variables currently utilized by the program for admission purposes.

Prior College Performance

Grade Point Average. Auriemma's 2007 study found that 100% of OT programs consider the applicants' GPA during the admission process. Academic GPA has been found to be a predictor of future academic success within the professions of occupational and physical therapy (Balogun, Karacoloff & Farina, 1986; Vargo, Madill & Davidson, 1986). However, prior academic performance has not been shown to be an indicator of clinical success in the allied health professions. The majority of the reviewed literature looked at OT program GPA and its ability to predict clinical grades, with no studies in the reviewed literature looking at prerequisite GPA and clinical scores, or certification exam pass rates.

Prerequisite GPA was found to be used by 41% of programs surveyed by Auriemma in 2007. However, the specific descriptors were not present to indicate whether the GPA was calculated on all prerequisite coursework or on specific courses such as math/science. Studies conducted in the medical field and in occupational therapy have found that "undergraduate coursework does not influence academic performance in subsequent similar courses" (Lysaght et al, 2009, p. 45). As with overall GPA, there have been no previous studies in the reviewed literature that looked at the association between prerequisite coursework and pre-licensure requirements.

Data analysis was conducted for this study to look at both GPA, and math/science GPA, and their association with pre-licensure requirements. The host institution for this study utilizes an overall GPA and a GPA based on all math and science courses completed by the applicant. Simple linear regression analysis was conducted to look at GPA and FWPE scores, exit exam scores, and logistic regression was utilized to look at NBCOT pass rates. As documented in Table 32, an applicants overall GPA and math science GPA were positively associated with each of the three pre-licensure requirements. GPA and math/science were significantly associated with several sections of the 2nd FWPE, and the 2nd FWPE total score; however, there were no significant associations with any portion of the 1st FWPE. Even with the multiple statistically significant results between the GPA and FWPE, R^2 value demonstrates relatively small variability for the impact of GPA and M/S GPA on the FWPE scores. So, while GPA and math science GPA are able to predict FWPE scores for the identified sections, the impact that the grade point averages has on the FWPE score is relatively small, ranging from just 1.43% to 7.89% of item variability.

Both GPA and M/S GPA had a positive relationship with the first time pass rate on the NBCOT exam and the exit exam score. For every one unit increase in GPA, students were 12.09 times more likely to pass the NBCOT exam, and for every one unit increase in M/S GPA, students were 5.65 times more likely to pass the NBCOT exam. One unit increases in either GPA or M/S GPA would increase exit exam scores by approximately 3.5 points. It is crucial to consider that a one-unit increase in GPA is a full one-point rise in a student's overall GPA. A full unit increase would make the host institution's overall GPA requirement a 4.0 with a 3.5 M/S GPA. This is an enormous

increase in GPA and difficult to implement in the admission process. Based on the relatively small variability that GPA, or M/S GPA account for in the outcomes, the implementation of this would not be warranted. The R^2 values for the exit exam are 3.12% for overall GPA and 4.6% for M/S GPA. Thus, the little variability attributed to either of the calculated GPA and does not warrant increasing the admission GPA despite the statistical significance of the results.

Although results indicate that those with higher GPA, and M/S GPA, are more likely to pass the NBCOT exam, once again the reality of a full one point increase must be considered. A full one-point increase in GPA would result in a 4.0 requirement. This is an unrealistic GPA for most applicants, thus substantially limiting admission numbers. Additionally, because the host program has limited numbers of students who do not pass the NBCOT exam, this extreme change in GPA is not warranted at this time for the program. The results of this study do indicate that overall preadmission GPA was a stronger predictor of NBCOT pass rates in comparison to M/S GPA. Overall GPA remained as the only cognitive variable in the final regression model as a significant predictor variable for the 2nd FWPE. In total, students with higher overall GPAs received statistically higher scores on the department exit exam and were more likely to pass the NBCOT exam on the first attempt. Thus, these results support Lysaght et al. (2009) in that there is no evidence to support specific courses as prerequisites, rather a students' overall GPA was more predictive of success on pre-licensure requirements. The results also support Tan, Meredith and McKenna (2002) by showing that students who tend to perform better academically tended to perform better clinically regardless of prerequisite GPA since the data indicates that students with higher overall GPAs received

significantly higher FWPE total scores. The results for this variable may be considered by the student affairs committee while keeping in mind the small variability that GPA accounted for in comparison with the impact of a full unit increase in GPA.

Table 25

Impact of GPA on Pre-licensure Requirements

	Slope	SE	R ²	T or F Statistic	Odds Ratio	95% CI Lower/Upper	p-value*
GPA: 2nd FWPE Total	9.75	4.13	.0420	2.36			.0198*
GPA: 2nd Section 2	1.28	0.51	.0143	2.49			.0143*
GPA: 2nd Section 3	2.01	1.12	.0252	1.80			.0736*
GPA: 2nd Section 4	1.94	1.07	.0255	1.81			.0720*
GPA: 2nd Section 6	1.57	0.48	.0789	3.29			.0013*
GPA: Exit Exam	3.85	1.90	.0312	2.02			.0453*
GPA: NBCOT					12.09	1.46 100.21	.0209*
GPA: Pass all					2.81	.81 9.68	.1022**
M/S GPA: 2nd Section 2	0.70	0.37	.0273	1.88			.0625*
M/S GPA: 2nd Section 6	0.86	0.35	.0461	2.47			.0149*
M/S GPA: Exit Exam	3.36	1.36	.0460	2.47			.0146*
M/S GPA: NBCOT					5.65	1.11 28.75	.0370*
M/S GPA: pass all					3.26	1.31 8.12	.0111*

*Significant at p=.1

** Approaching significance

Additional College Related Variables. This study analyzed several additional variables beyond academic GPA that were related to an applicant's prior college performance. There has been much discussion within the host institution's OT department regarding whether to require a bachelor's degree prior to enrolling in the curriculum. While there was no information about this in the reviewed literature regarding the benefit of a previously earned degree, it remains a topic of discussion

among OT professionals. The majority of the variables discussed in this section have not been previously studied, thus there is no current literature which to relate these study variables, and the findings.

College credits. In an attempt to better understand this issue, this study included the number of college credits as a predictor variable to determine if the number of credits impacted pre-licensure requirements. The sample yielded credit hours ranging from 89.9 to 211 earned credit hours. There were no significant associations between college credit hours and the exit exam, or NBCOT pass rate; thereby, indicating that there were no significant differences in the exit exam scores, or NBCOT pass rates, for students based on the number of college credit hours earned. Students with just 90 hours of college credits were likely to receive the same scores on these two requirements as students who had earned more credit hours. Thus, additional schooling did not have any apparent value to student scores on the departmental exit exam or first time pass rate on the NBCOT exam.

The number of college credits had multiple significant associations with the 2nd FWPE. Table 33 contains the results for these variables. Of interest, the association between the number of credit hours earned and the FWPE scores is a negative slope, even on sections which were not identified as statistically significant. As the number of credit hours increases, the FWPE score decreases on all but two sections of the FWPE. Although, the R^2 value indicates that the number of college credits accounts for a small amount of variability in the FWPE scores. In other words, while this was an overall trend, with several significant results, the impact that the college credit hours has on the FWPE scores is less than 5% of item variability. Such small variability does not warrant any

alarm or concern. However, what these results do appear to indicate is that students with more completed college coursework are likely to receive lower scores on their Level II fieldworks than those students who enter the program with just 90 credit hours.

Table 26

Results of College Credits and FWPE Scores

Dependent Variable	Slope	SE	R²	T or F statistic	p-value
1st FWPE Total	-.06	.04	.0141	-1.33	.1869
1st FWPE Section 1	.00	.01	.0004	.24	.8141
1st FWPE Section 2	-.01	.01	.0086	-1.04	.2990
1st FWPE Section 3	.00	.01	.0016	-.44	.6598
1st FWPE Section 4	-0.02	.01	.0357	-2.15	.0334*
1st FWPE Section 5	-.01	.01	.0069	-.93	.3531
1st FWPE Section 6	-.01	.01	.0053	-.81	.4179
1st FWPE Section 7	-.01	.01	.0135	-1.31	.1927
2nd FWPE Total	-0.11	.04	.0446	-2.42	.0172*
2nd FWPE Section 1	-0.01	.00	.0241	-1.75	.0826*
2nd FWPE Section 2	-.010	.01	.0080	-1.00	.3201
2nd FWPE Section 3	-0.02	.01	.0298	-1.95	.0533*
2nd FWPE Section 4	-0.03	.01	.0379	-2.20	.0296*
2nd FWPE Section 5	-0.01	.01	.0237	-1.73	.0853*
2nd FWPE Section 6	-.01	.01	.0121	-1.23	.2201
2nd FWPE Section 7	-0.02	.01	.0372	-2.74	.0070*

*Significant at p=.1

College degree. This study further considered the benefit of college experience by looking specifically at whether a prior college degree could be a predictor variable for

pre-licensure success. There were no statistically significant results for any pre-licensure requirement using the predictor variable of prior degree. These results match the previous results indicating that there is no benefit of additional college credits, or degree. Based on these results, there are no data to support requiring students to spend an additional year of schooling.

McEwen and Crawford (1995) stated that, despite differences in admission requirements, most OT programs would agree that they are seeking applicants who have “internal motivation, insight, and self-knowledge” (p.1). One could argue that these traits would be found in older students who have had increased amounts of college experience. Older students would be more likely to have earned more credit hours and, or, have earned a college degree. Instead, the results of this study indicate that students with more college credits are at no greater advantage for success on pre-licensure requirements than students who enter the program with the minimum number of credit hours.

College major. Data analysis was also conducted to determine whether college major could predict performance on the pre-licensure requirements. In terms of college major, there were no significant associations with the department exit exam, or the NBCOT exam pass rate. Education majors had a significantly higher 2nd FWPE Section 4 score than science majors or those clustered under the ‘other’ category of college majors. Section 4 of the FWPE is the intervention section, where students are measured on the selection and implementation of treatment activities. It could be assumed that this task coincides with skills likely learned in education curriculums. Students who were kinesiology majors earned statistically higher scores (76.51 versus 73.80; $p=.0687$) on the departmental exit exam than non-kinesiology majors with the mean score for non-

kinesiology majors being below the minimum for passing the exam. Kinesiology majors would likely be better prepared than other majors for the departmental exit exam which is heavily focused on biomechanical content from the curriculum. Although, once again, R^2 values indicate that college major accounts for just .97% of item variability and kinesiology major accounts for just 2.74% of item variability. Therefore, at this point the data does not warrant requiring specific undergraduate majors. There were no other significant associations detected for the predictor variables relating to college major and any other pre-licensure requirement.

College classification. This study looked at the college grouping, based on the USG ranking system as well as the Carnegie Classification for all subjects in this study. The host OT program may receive applications from any of the 35 USG schools, or any other accredited institution. Currently, there is no method to weight institutions differently or to account for differences in rigor, thus the previously attended university has not been a factor in the admissions process. When looking at the two ranking systems used in this study, one might assume that applicants from particular categories would perform differently than others based on different institution rankings. USG classification systems included research university, regional university, state college, state university, public non-Georgia, and private schools. Carnegie classifications were doctorate granting university, master's college/university, baccalaureate college, and associate degree college.

Although the USG ranking system did not predict NBCOT pass rate, students who attended doctoral or masters level institutions on the Carnegie Classification system were more likely to pass the NBCOT on the first attempt (Table 34). A review of the

Carnegie descriptors reveals that baccalaureate institutions graduate fewer than 50 masters, or 20 doctoral students each year (Carnegie, 2012). Thus, these institutions, or those classified in other groups, do not have extensive academic communities with graduate students. Graduate learning, such as self-directed learning and reflective practice, may not be skills highly developed in students who attend institutions which do not produce large numbers of graduate level students. Hence, students who attend institutions where graduate learning is facilitated are more likely to pass the NBCOT examination on the first attempt.

Table 27

NBCOT Pass Rate Based on USG and Carnegie Classification

Independent Variable	Level	Odds Ratio	95% CI		p-value
			Lower	Upper	
College Group	Private	6.00	0.58	61.84	0.3433
	Public Non-GA	6.40	0.62	65.74	
	Regional University	NE	NE	NE	
	Research University	9.20	0.91	93.02	
	State University	3.20	0.67	15.19	
	State College (ref)	1.00			
	Carnegie Classification	Associate Degree College	0.26	0.03	
	Masters College or University	1.05	0.11	10.30	
	Doctorate Granting University	2.00	0.17	24.12	
	Baccalaureate (ref)	1.00			

*Significant at $p=.1$

Data analysis results indicate that the USG and Carnegie classifications were not useful predictors of scores on the FWPE, with the exception of Section 3 of the 1st FWPE (Table 35). Students from USG regional universities, or public non-GA schools had statistically significant higher mean scores than any other group. The R^2 value indicates that 7.98% of the variability in Section 3 scores is due to the college attended as ranked

by the USG system. Because this is a subsection score, rather than a total score for the FWPE, this difference is not significant enough to warrant further consideration of this as an admission requirement.

Table 28

Results of FWPE Scores Based on USG and Carnegie Classifications

	USG College Group		Carnegie	
	R ²	p-value	R ²	p-value
1st FWPE- Total	.0683	.1468	.0123	.6816
1st FWPE- Section 1	.0631	.1762	.0056	.8741
1st FWPE Section 2	.0570	.2281	.0337	.2379
1st FWPE Section 3	.0798	.0818*	.0215	.4428
1st FWPE Section 4	.0456	.3598	.0171	.5451
1st FWPE Section 5	.0337	.5461	.0049	.8947
1st FWPE Section 6	.0370	.4896	.0196	.4861
1st FWPE Section 7	.0495	.3102	.0108	.7197
2nd FWPE- Total	.0277	.6537	.0095	.7566
2nd FWPE- Section 1	.0226	.7521	.0394	.1778
2nd FWPE Section 2	.0412	.4276	.0070	.8323
2nd FWPE Section 3	.0248	.7106	.0052	.8887
2nd FWPE Section 4	.0404	.4408	.0274	.3342
2nd FWPE Section 5	.0362	.5075	.0255	.3664
2nd FWPE Section 6	.0686	.1414	.0369	.2032
2nd FWPE Section 7	.0092	.9559	.0011	.9880

*Significant at p=.1

Simple linear regression analysis indicated that both the USG ranking and the Carnegie Classification system were significantly associated with the results of the department exit exam (Table 36). Students who attended state colleges on the USG ranking system had significantly lower mean exit exam scores than students who attended any other college group. Students who attended Carnegie level schools at the associate or baccalaureate level had mean exit exam scores significantly lower than any other group. Both the USG grouping and the Carnegie classification remained as significant variables in the final regression model for the departmental exit exam. These results indicate that

students who attend groups of schools which do not produce large numbers of graduate students or research, earn mean scores lower than others on the exit exam. A review of the college groups indicates that there are vast differences in the research productivity and graduate scholarship among different groups of institutions. Thus, higher-level learning may not be fostered on campuses that do not routinely educate graduate students. Unlike previous results, the R^2 value of these two variables indicates a need for further consideration as a factor considered during admission.

Table 29

Department Exit Exam Results Based on USG and Carnegie Classification

Independent Variable	Level	Mean	SD	R^2	T or F statistic	p-value
USG Group	Private	75.39	7.89	0.1195	3.15	.0106*
	Public Non-GA	75.76	7.06			
	Regional University	76.65	5.22			
	Research University	74.64	5.12			
	State College	68.56	5.99			
	State University	75.02	6.17			
Carnegie Classification	Associate Degree College	70.68	6.82	0.1300	6.13	.0006*
	Masters College or University	75.89	6.08			
	Doctorate Granting University	75.63	5.82			
	Baccalaureate College	69.91	6.01			
	None	74.40	7.01			
	Employed > 6mo	75.19	5.82			
	None	71.5	6.21			
Shadowed	73.56	6.65				

*Statistically significant at $p=.1$

Graduate Records Examination

The GRE is a standardized admission test used by the host institution during the admission process. Despite its widespread use, there have been inconsistent results regarding its ability to predict graduate school success (Kuncel et al., 2001). For this reason, the Educational Testing Services has stated that validity studies should be conducted for each program that uses the GRE as an exclusionary factor in the admission process (2009). Although GRE scores have been found to be associated with academic

GPA, the GRE has not been studied as it relates to clinical scores (Kirchner & Holm, 1997; Day 1986). Kuncel et al (2001) found the GRE subtests to be valid predictors of comprehensive exit exam scores for graduate students from multiple disciplines and Hollman et al (2008) found that students with low GRE-verbal scores were 6 times more likely to fail the physical therapy national board examination. However, the relationship between GRE and pre-licensure requirements for OT has not been investigated in the reviewed literature.

Table 37 contains the significant results of the data analysis for GRE scores and the pre-licensure requirements. Data analysis indicated that the math section of the GRE was associated with each of the 3 pre-licensure requirements: FWPE, exit exam, and NBCOT exam. Additionally, GRE-math was predictive of passing all requirements on the 1st attempt. Despite the numerous significant results from the data analysis, the variability of each dependent variable that can be explained by the GRE-math score is relatively low. Just 2.88% of the 2nd FWPE total score can be attributed to the GRE-math score, and 3.99% of the exit exam score can be attributed to the GRE-M. However, logistic regression analysis indicated that a one-unit increase in GRE-Math increased the likelihood of passing the NBCOT exam by 1.01, one unit increase in GRE-verbal increased the likelihood of passing by 1.03 times, and a one unit increase in the GRE-written increased the likelihood by 2.77 times. GRE scores did remain in the final regression models for the NBCOT exam and passing all four exams. Table 37 summarizes these results.

Unlike the one unit increase in GPA which was previously discussed as being unrealistic, a one unit increase in the math or verbal sections of the GRE is a realistic

change. Since the NBCOT exam is a grueling examination with important consequences both for the examinee and the OT program, any ability to increase student pass rates should be considered by the department. The data from this study indicates that students with higher GRE-M, GRE-V, or GRE-written scores were more likely to pass the NBCOT exam on the first attempt. Such results will be instrumental for the host institution and the admission decision process. While this study did not look at whether the GRE could predict academic (program) success as found in the reviewed literature, this study did find that students with higher GRE scores did receive statistically higher scores on sections of the FWPE, the exit exam, and were more likely to pass their NBCOT exam on the first attempt. Thus, this study is the first in the OT literature to link GRE scores with clinical scores (FWPE) and national board examinations.

Table 30

Statistically Significant Results of GRE Scores & Pre-licensure Requirements

Variable		Slope	SE	R²	T or F Statistics	Odds Ratio	95% CI Lower/Upper		p-value
GRE-M	1 st FWPE Section 7	.01	0.00	.0729	3.16				.0020*
	2 nd FWPE Total	.02	0.01	.0288	1.94				.0544*
	2 nd FWPE Section 3	.01	0.00	.0394	2.27				.0247*
	2 nd FWPE Section 6	.003	0.00	.0455	2.45				.0156*
	2 nd FWPE Section 7	.0004	0.00	.0218	1.68				.0963*
	Exit Exam Score	.01	.01	.0399	2.30				.0233*
	NBCOT						1.01	1.0	1.01
	Pass all					1.01	1.00	1.01	.0018*
GRE-V	NBCOT					1.03	1.01	1.04	.0008*
GRE-written	NBCOT					2.77	1.07	7.14	.0356*

*Statistically significant at p=.1

Previous Experience

For the purposes of this study, previous experience was considered to be a non-cognitive variable. Non-cognitive variables are less objective than cognitive variables such as grade point average and GRE scores. Non-cognitive variables reflect the unique value and mission of their program (Auriemma, 2007). Murden et al (1977) found stronger associations between non-cognitive variables and clinical success than with GPA and clinical success for medical students. Bandiera and Rogehr (2003) further reported that non-cognitive variables were as important for health care professionals as cognitive skills. Such variables are critical in professions where empathy and compassion are as necessary as knowledge and skill. Thus, it is no surprise that 92.7% of variables reportedly used in OT admissions were non-cognitive (Auriemma, 2007). The only non-cognitive variable included in this study were previous experience and faculty scores on an autobiographical essay.

There were three types of previous experience information gathered from the applications. The first was termed “contact experience” which covered the number of hours spent in patient care, related healthcare and community service. The second type of experience gathered was related to experience type. Experience type was categorized based on the type and duration of interaction with an OT. The third type of experience gathered off of the application was an applicant’s self-disclosure of whether they, or a family member, had previously received therapy services. This was termed “additional [therapy] experience”.

Contact Experience. Contact experience was an overarching term spanning three different forms of information gathered by the students on the admissions application.

The admissions application has a section titled “experience data sheet” with the following headings: patient contact experience (including shadowing a healthcare professional), related healthcare experience, and community service. There are no further descriptors to differentiate between these three categories. Applicants are expected to complete each section with the facility name, date(s), total hours, and job responsibilities. Because these experiences had no time limitations and could be volunteer or paid positions, there were large ranges in the amount of time entered by the students.

Of the students who were accepted, 88.52% indicated that they had some form of patient contact experience prior to applying to the OT program with a mean of 329.72 patient contact hours. The number of hours spent with patients ranged from 5 hours to 4,160 hours. The median number of hours was 58.5. For the purposes of data analysis, patient contact was categorized as a dichotomous variable indicating yes, the applicant had patient contact (regardless of the number of hours), or no, there was no evidence of patient contact. Patient contact experience had statistically significant associations with the 2nd FWPE total score and several subsections. Interestingly, students who did *not* have patient contact prior to applying to OT school had statistically significant higher total scores on the 2nd FWPE and sections 3, 4, 6, and 7. Patient contact experience remained a significant variable following the multiple regression analysis ($p=.0158$) for the 2nd FWPE score. Patient contact may be a misnomer, as most students gain patient contact via time spent with a healthcare professional. In other words, most of the time spent with patients is acquired while working alongside a practicing occupational or physical therapist. The students may pick up professional behaviors and therapeutic mannerisms during this time, which aids in the foundational development of a

professional identity. On the other hand, fieldwork supervisors are charged with developing future therapists and may desire that their protégés behave in a manner similar to their own professional style. Students who have spent large amounts of time with patients, or therapists, prior to enrolling in the program have already developed behaviors, which may be vastly different than their fieldwork supervisor. These students may have observed in multiple facilities and with multiple therapists, and they may have a better understanding that there are multiple ways to address patients and tasks. In contrast, students with less previous experience may be easier to mold to their supervisors' mannerisms, which results in higher FWPE scores.

Forty-one percent of students reported that they had related healthcare experience. This low response is likely due to confusion regarding this heading, similar to the issue reported in the physical therapy literature (McGinnis, 1984). Of those who did participate in related healthcare, a mean of 385.88 hours were spent in the related healthcare setting. Due to such a low percentage of students engaging in this experience, the median number of hours was zero. Similar to those results found in patient contact, those who reported *no* related healthcare experience had significantly higher total FWPE score for the 1st and 2nd clinical experience. The R^2 values indicated that healthcare experience accounted for 4.96% of the variability of 1st FWPE scores and 6.15% of the 2nd FWPE total score. Thus, while statistically significant, there were relatively small percentages of the variance accounted for by this factor. However, related healthcare experience impacted almost every section, and the total scores, of each of the fieldwork evaluations at an alpha level of $p \leq .1$. Related healthcare experience remained as a significant variable in the final regression model ($p = .0395$) for the 2nd FWPE total score.

Even the sections that were not statistically significant, students with related experiences received mean lower scores than those without experience. Since the mean scores for students who had related healthcare experience were statistically lower, one might assume that somehow the time spent in related healthcare experiences influences students resulting in lower FWPE scores than their peers. While this study cannot conclude that related healthcare experiences causes these lower scores, the results do indicate that there is a variable which is not measured by this study, gained during this experience and results in lower fieldwork scores. One potential explanation is that students who do not have previous experience may be more malleable during their fieldwork and emulate their supervisors' behaviors closely. Those with previous experience may be gaining the same knowledge, but may not be performing in a manner like their supervisor. Thus, clinical supervisors may be scoring the FWPE based on how much the student behaves like them, rather than whether the student completes the necessary skills.

The third section requested information about participation in community service. Over two thirds of the sample (67.21%) did participate in community service activities with a mean number of 243.42 service hours. The number of community service hours ranged from 7 to 5000 hours with a median of 40.5 hours. Community service was statistically associated only with Section 6 of the 1st FWPE and the first time pass rate on the NBCOT. Those who participated in community service received lower scores on the 1st section of the 1st FWPE, Fundamentals of Practice; and these individuals were .17 times less likely to pass the NBCOT exam on the first attempt. Of course, this analysis was a correlation only. Thus, we cannot conclude that community service has a negative influence on the NBCOT exam. Rather, these results may point to the influence of other

variables associated with both community service and the NBCOT exam scores that were not part of this investigation.

Table 31

Statistically Significant Results of Previous Experience & Pre-licensure Requirements*

			Mean	SD	R ²	T or F Stat	p-value
Patient Contact	2 nd FWPE	Yes	139.90	13.77	.0391	4.89	.0290
	Total	No	148.64	15.14			
Related Health-care	2 nd FWPE	Yes	32.10	3.56	.0439	5.47	.0210
	Section 3	No	34.57	4.78			
	2 nd FWPE	Yes	29.76	3.51	.0350	4.32	.0398
	Section 4	No	31.86	3.90			
	2 nd FWPE	Yes	13.58	1.63	.0228	2.77	.095
	Section 6	No	14.36	1.74			
	2 nd FWPE	Yes	25.08	2.72	.0270	3.30	.0716
	Section 7	No	26.50	2.88			
	1 st FWPE	Yes	138.10	11.29			
	Total	No	143.86	13.23	.0496	6.21	.0141
	1 st FWPE	Yes	31.80	3.18	.0365	4.63	.0334
	Section 3	No	33.14	3.53			
	1 st FWPE	Yes	29.24	3.01	.0369	4.64	.0332
	Section 4	No	30.54	3.51			
	1 st FWPE	Yes	15.94	1.79	.0250	3.10	.0810
	Section 5	No	16.54	1.91			
	1 st FWPE	Yes	13.63	1.52	.0262	3.26	.0735
	Section 6	No	14.29	2.29			
	2 nd FWPE	Yes	136.90	12.84	.0615	7.92	.0057
	Total	No	144.03	14.49			
	2 nd FWPE	Yes	10.14	1.37	.0503	6.36	.0130
	Section 1	No	10.78	1.38			
	2 nd FWPE	Yes	12.92	1.51	.0410	5.14	.0252
	Section 2	No	13.64	1.86			
2 nd FWPE	Yes	31.24	3.37	.0673	8.65	.0039	
Section 3	No	33.22	3.85				
2 nd FWPE	Yes	29.04	3.25	.0536	6.80	.0103	
Section 4	No	30.74	3.72				
2 nd FWPE	Yes	13.28	1.68	.0423	5.30	.0230	
Section 6	No	13.97	1.60				
2 nd FWPE	Yes	24.50	3.07	.0543	6.89	.0098	
Section 7	No	25.81	2.41				
Comm. Service	1 st FWPE	Yes	13.68	1.55	.0528	6.69	.0109
	Section 6	No	14.68	2.67			
	NBCOT	Yes		.			.0907
		No	(ref)				

*Statistically significant at $p \leq .1$

Experience Type. This variable was examined for the purposes of determining if shadowing, or volunteering, directly with an occupational therapist would have an impact on the student's performance on pre-licensure requirements. Experience type was categorized based on the type and duration of interaction with the OT: none, shadowed, employment or volunteer < 6 months, employment or volunteer > 6 months. These experiences could have been paid, or unpaid, and must have been evident on the admission application.

Applicant responses indicated that approximately 76% of applicants had less than six months worth of exposure to their chosen profession. Such limited exposure is surprising due to the great amount of specific pre-requisite coursework required to be admitted to OT programs and the rigor that is associated with the admissions process. Thus, students are making significant career decisions with little exposure to the profession. Despite the seemingly small amount of time spent prior to making a career decision, the time spent with an OT prior to admission had no significant associations with any pre-licensure variable in this study. Students may be using their time with an OT to verify their previous decision, rather than using the time to make a decision. These results support Lyons, Mackenzie, Bore, and Powis' (2006) notion that OT programs build upon solid foundations of pre-existing attributes. Applicants to OT programs may already embody core values deemed necessary to the profession rather than gaining these via time spent with a therapist.

Additional Experience. Students are required to write an autobiographical essay as part of their application to the OT program. While there are no other directions to guide the students' essay, students consistently write about their reason for choosing OT

as a profession. Students who reference their own personal history of a disease, or injury which required therapy, are recognized for having additional experience with therapy services. Students who reference a family member having a disease, or injury, are also recognized for having additional experience as diseases, and injuries, impact the entire family, not just the individual. Consequently, these family members will also have grown and developed through the additional experiences they have with therapy services. Because healthcare professionals are known to be compassionate and altruistic, family members and former patients may enter healthcare careers to help others as they have once been helped.

Of the sample used for this study, 38.60% of the students had additional experience with therapy prior to admission. However, because this was derived from the autobiographical essay this may not be a true representation of those who entered the field due to a previous personal, or familial, experience. Surprisingly, this variable had no significant associations with any pre-licensure requirement in this study. Students who entered the program for altruistic reasons had no significant differences in any of the pre-licensure requirements. Thus, these results support Mentasti's and Thibodeau's (2006) research that experience and personal qualities cannot compensate for inadequate academic preparation. Regardless of one's reason for entering the profession, personal experience will not offset inadequate academic preparation.

Cognitive and Non-cognitive Variables in Regression Models

Regression Models were completed to determine the variables that were significant in predicting student performance in the three pre-licensure areas. Patient contact, and related healthcare experience, combined with overall GPA remained as

significant variables for the 2nd FWPE total score, with a model R^2 value of .1399. USG college group and Carnegie Classification remained in the final model for predictors of the exit exam. For the NBCOT exam, the predictor variables of GRE verbal, GRE math and the exit exam remained as significant variables in the final model (Table 39). The only variable that remained as a predictor for passing all exams was GRE math.

Table 39

Final Regression Models for Categorical Outcome Variables

Outcome	Independent Variable	Level	Odds	95% CI		p-value	
				Lower	Upper		
NBCOT Pass on 1 st Attempt	GPA		6.57	0.01	NE	0.5874	
	Math & Science GPA		0.90	0.01	101.17	0.9659	
	GRE – Verbal		1.04	1.00	1.09	0.0331*	
	GRE – Quantitative		1.02	1.00	1.03	0.0305*	
	GRE – Writing		0.24	0.02	3.65	0.3006	
	Exit Exam		1.28	1.04	1.58	0.0188*	
	Carnegie Classification	Associate Degree College		0.01	0.01	2.76	0.2936
		Masters College or University		0.02	NE	1.36	
		Doctorate University		0.03	NE	1.49	
		Baccalaureate College		1.00			
Community Service	Yes		NE	NE	NE	0.9411	
	No		1.00				
Pass All Exams	Math & Science GPA		1.88	0.70	5.03	0.2125	
	GRE – Quantitative		1.01	1.00	1.01	0.0083*	
	Essay Score		1.36	0.86	2.14	0.1835	

*Significant at p=.1

Research Summary

The purpose of this research study was to examine and describe the existing admission data at one graduate occupational therapy program in the Southeastern portion of the United States. As the program is inundated with increasing numbers of admission applications, the Student Affairs Committee has sought to revise the existing admission processes in an attempt to select applicants who will not only make excellent students but will be successful in completion of their pre-licensure requirements. However, making changes without a thorough understanding of the processes currently used and the impact that current admission variables have on student outcomes (pre-licensure requirements) would be senseless. Instead, this investigator sought to examine the admission variables of previous collegiate performance, Graduate Records Examination Scores, and previous experience to determine their association with pre-licensure requirements.

Question one specifically addressed whether previous collegiate performance (GPA, math/science GPA, college major, college attended, and number of earned credit hours) could predict graduate performance on pre-licensure requirements. After data analysis was conducted with an alpha level of .1, the results from this study indicate that an applicant's overall GPA was positively associated with FWPE scores, the exit exam, and the first time pass rate on the NBCOT exam. The impact of GPA on FWPE scores was minimal accounting for small amounts of variability in the scores. GPA did remain in the final regression model for the 2nd FWPE only. Thus, the Student Affairs Committee should not adjust admission GPA based on FWPE outcomes. Instead, the committee should consider that a one unit increase in GPA allows a graduate to be 12 times more likely to pass the national board exam on the first attempt. Since NBCOT results are

published, any ability for the program to increase the pass rate would be beneficial. While a full one unit increase is not realistic, smaller increases in the pre-admission GPA would still be beneficial to the program and graduates. Since the program has a large number of applicants each year, the program may also consider placing greater emphasis to the overall GPA during the admissions process.

Question two addressed whether GRE scores (math, verbal, or written) could predict graduate performance on pre-licensure requirements. Data analysis indicated that a one unit increase on the GRE-verbal or the GRE-written increased the likelihood of passing the NBCOT exam by 1.03 and 2.77 times respectively. The GRE-math was significantly associated with the 2nd FWPE total score, the exit exam score, the first time pass rate on the NBCOT, and the likelihood of passing all pre-licensure requirements. GRE-math and GRE-verbal scores remained in the final regression model for passing the NBCOT exam. GRE-math was the only significant predictor variable in the final model for passing all four exams. Unlike the GPA where a one-unit increase is difficult to achieve, one unit increases in the GRE-math are realistic changes that can be made to the admission requirements. Thus, the Student Affairs Committee should consider increasing the minimum GRE-math score to improve graduate and programmatic outcomes.

Question three assessed the ability of non-cognitive variables (previous experience and autobiographical essay score) to predict graduate scores on pre-licensure requirements. Data analysis provided no support that contact experience, additional experience, or experience with an OT has any significant association with success on the pre-licensure results. The department does not currently require a minimum number of hours prior to admission, and the results of this study do not support further consideration

of this at this time. However, non-cognitive variables are defined as variables which are measured according to the importance that a program, or profession, places on them. Thus, the Student Affairs Committee must consider whether there is inherent value, not measured by this study, for student participation in service activities. Students frequently reference prior experiences during classes, thus it would not be reasonable to discontinue these opportunities based on this study without further consideration by the committee. It is also recommended that the college reword the admission application form to avoid any misunderstanding of the categories used to capture student experiences.

The final question for this research study considered whether the department exit exam and FWPE scores could predict first time pass rate on the NBCOT exam. Since the students are still enrolled in coursework when FWPE scores and the department exit scores are given, these variables could be used as indicators of who may not be successful on their professional certification examination. FWPE scores were not predictors of NBCOT exam, which may be due to the fact that the FWPE is a performance based assessment and would not predict student performance on a traditional comprehensive exam. However, for every one unit increase in a student's exit exam scores, the student was 1.15 times more likely to pass the NBCOT exam on the first trial. Since the exit exam was created to prepare students for the NBCOT exam, this association is logical. The department should continue to use this exam to prepare students for their national board certification examination.

Because graduates must pass all pre-licensure requirements prior to receiving their professional licensure, this investigator conducted a logistic regression analysis to determine which of the predictor variables were significantly associated with students

passing all four requirements. The dependent variables were the 1st FWPE, 2nd FWPE, exit exam score, and NBCOT pass rate. The logistic regression analysis indicated that for every one unit increase in math/science GPA, students were 3.26 times more likely to pass all four requirements; and, a one unit increase in overall GPA increased the likelihood by 2.81 times. A one unit increase in GRE-math allowed students to be 1.01 times more likely to pass all four requirements, and a one unit increase on the GRE writing score increased the likelihood of passing all four by 1.5 times.

Despite the numerous statistically significant results, analysis revealed that relatively few of the results accounted for great variability in the dependent variables. R^2 values below 5%, as many of these were, indicate that these variables accounted for less than 5% of the differences in the scores. Such small variability makes changes in the admission requirements at the OT program difficult to justify. However, GRE-math scores were associated with the three pre-licensure requirements and the likelihood of passing all pre-licensure requirements. Thus, the GRE-math score required for admission should be reconsidered by the Student Affairs Committee based on the results of this study. As a faculty member, and Chair of Student Affairs, it was disheartening to see that experience and community service had a negative association with student FWPE scores and the first time pass rate on the NBCOT exam for the sample studied.

Recommendations for Future Research

In addition to the above stated recommendations for the department's Student Affairs Committee, the results of this study indicate the need for further research on this topic. First, the data should continue to be collected and analyzed to achieve a larger sample size. Ongoing analysis of admissions data must be conducted to provide the

program with relevant and timely feedback on their admissions processes. The Student Affairs Committee should consider investigating students who did not pass their pre-licensure requirements to determine if there are other factors in the admission file that would help explain the failing scores. Finally, this study should be replicated at other programs. Replication would provide a greater sample for data analysis. Replication would also aid in better understanding of the unexpected outcomes from students' previous experience. And finally, as the profession continues to consider the use of a national application system, universal applications will be required. Thus, there must be a consensus among programs regarding the variables requested on the admission application and the usefulness of each in the selection of successful occupational therapy students.

Further research is also needed to address questions that arose from this study regarding the lack of association between variables, which appear to be related. Specifically of interest was why predictor variables were often associated with just one FWPE and not the other. In an effort to better understand this, the researcher conducted Pearson correlations (Appendix D) to determine whether the two FWPE scores were correlated with one another. Correlation results indicated that no sections of the FWPE, or the total FWPE scores, were correlated with any other FWPE score. Because the FWPE is a repeated measure on the same OT student, one would expect to find moderate correlations at the minimum. The results from this study indicate that there is no correlation between FWPE scores. Thus, it is possible that the FWPE measures something other than that which it reports to assess, nullifying its reliability and validity. In order to improve the reliability of this FWPE as an assessment tool for the profession

of occupational therapy, inter-rater reliability should be established. Academic fieldwork coordinators must ensure that their clinical instructors have received training on the use of the FWPE as an assessment tool. Additionally, training on how to score the instrument should be a major component of the training.

Another unexpected result was the absence of GPA in the final regression models, considering the great emphasis placed on it by society. Since the FWPE is a performance-based assessment, GPA would not necessarily be an effective predictor, since students can learn clinical performance skills. However, both the NBCOT exam and the department exit exam require complex higher-level reasoning, which would seem to be related to one's grade point average. Instead, only the GRE-math remained in the final regression model. Thus, it is likely that the analytical skills needed to be successful on the pre-licensure requirements are best captured by the GRE rather than GPA. Further research is recommended to determine whether there are minimal threshold scores for GPA, M/S GPA, and/or GRE for admissions. While the results of this study did not indicate that any of these scores contributed significantly to the variability in pre-licensure requirements, further investigation is warranted to determine if there are minimal cutoff scores which are significantly associated with pre-licensure success.

Summary

As the profession of occupational therapy continues to grow, academic programs will continue to be faced with increasing numbers of qualified applicants for limited seats. Programs must be able to utilize methods to select applicants who will not only be great academic students, but will be successful in the completion of pre-licensure requirements. Without a thorough understanding of the currently used admission

variables and their relationship to pre-licensure success, academic programs are unable to select the best applicants from all who apply.

The results of this study indicate that there are several significant associations between cognitive, and non-cognitive admission variables, and student success on pre-licensure. However, the variability that is accounted for by many of these significant associations is too small to warrant consideration at this point. USG college grouping and Carnegie Classification remained as significant predictors for the department exit examination. The GRE-math, GRE-verbal, and the exit exam were significant predictors in the final model for first time pass rate on the NBCOT exam. A student's previous overall GPA, patient contact, and related healthcare experience remained in the final model for the total score on the 2nd FWPE. There were no significant final models for the 1st FWPE. The lack of association among FWPE scores resulted in further analysis indicating that the FWPE is not a reliable or valid instrument.

The results from this study will be shared with the host department's occupational therapy faculty. As the program continues to analyze admissions policies and processes, these results will provide foundational understanding of the currently used variables. The results from this study may also be used to question the appropriateness of the FWPE as an accurate measure of a student's performance. Finally, these results may be used to advise prospective students who seek information regarding colleges, majors, and extracurricular experiences which are currently a part of the admission process.

REFERENCES

- Agho, A. O., Mosley, B. W., & Smith-Paul, B. (1998). Use of the interview in selecting students for occupational therapy programs. *The American Journal of Occupational Therapy, 52*(7), 592-594.
- Agho, A. O., Mosley, B. W., & Williams, A. M. (1999). A national survey of current admission practices in selected allied health educational programs. *Journal of Allied Health, 28*(1), 8-14.
- American Occupational Therapy Association (1993). *Core values and attitudes of occupational therapy practice*. Retrieved from www.aota.org
- American Occupational Therapy Association (2002a). *A career in occupational therapy*. Retrieved from www.aota.org/Students/Prospective/OT/38202.aspx
- American Occupational Therapy Association (2002b). *Fieldwork performance evaluation for the occupational therapy student*. Bethesda, MD: AOTA Press.
- American Occupational Therapy Association (2006). *Workforce trends in occupational therapy*. Retrieved from <http://www.aota.org/Educate/EdRes/StuRecruit/Working/38381.aspx>
- American Occupational Therapy Association (2009a). *ACOTE standards for educational programs*. Retrieved from www.aota.org
- American Occupational Therapy Association (2009b). *Academic Programs Annual Data Report: Academic Year 2008-2009*. Retrieved from <http://www.aota.org/Educate/Accredit/47682/44045.aspx?FT=.pdf>
- American Occupational Therapy Association (2010a). *American Occupational Therapy*

Association Fact Sheet. Retrieved from <http://www.aota.org/Practitioners/PracticeAreas/Aging/Tools/38512.aspx>

American Occupational Therapy Association (2010b). *Academic Programs Annual Data Report: Academic Year 2009-2010*. Retrieved from www.aota.org/Educate/Accredit/47682/46227.aspx?FT=.pdf

American Occupational Therapy Association (2011). *Academic Programs Annual Data Report: Academic Year 2010-2011*. Retrieved from <http://www.aota.org/Educate/EdRes/OTEdData/42026/2010-2011-Annual-Data-Report.aspx?FT=.pdf>

Association of Schools of Allied Health Professions. (n.d.). Retrieved from <http://www.asahp.org/definition.htm>

Atler, K. (2003). *The complete guide: Using the fieldwork performance evaluation forms*. Bethesda, MD: AOTA Press

Auriemma, D. (2002, September). Admission methods of professional occupational therapy programs in the United States. *Education Special Interest Section Quarterly*, 12(3), 1-4.

Auriemma, D. (2007, March). Admission methods of professional occupational therapy programs in the United States: 2001-2002. *Education Special Interest Section Quarterly*, 17(1), 1-4.

Bailey, D. (1991). *Research for the health professional: A practical guide*. Philadelphia: F.A. Davis

Balogun, J. A. (1988). Predictors of academic and clinical performance in a baccalaureate physical therapy program. *Physical Therapy*, 68(2), 238-242.

Balogun, J. A., Karacoloff, L. A., & Farina, N. T. (1986). Predictors of academic

- achievement in physical therapy. *Physical Therapy*, 66(6), 976-980.
- Bandiera, G., & Regehr, G. (2003). Evaluation of a structured application assessment instrument for assessing application to Canadian postgraduate training programs in emergency medicine. *Academic Emergency Medicine*, 10(6), 594-598
- Best, C. E. (1994). A prediction model of performance in level II fieldwork in physical disabilities. *The American Journal of Occupational Therapy*, 48(10), 926-931.
- Briel, J. B., O'Neill, K., & Scheuneman, J. D. (Eds.). (1993). GRE Technical Manual. Princeton, NJ: Educational Testing Service.
- Carnegie Foundation (n.d.). *Carnegie Classification Descriptions*. Retrieved from www.carnegiefoundation.org
- Case-Smith, J. (2010). *Occupational Therapy for Children*. Maryland Heights, MO: Mosby Elsevier.
- Collegeboard (2011). About the tests: SAT and SAT subject tests overview. Retrieved from <http://sat.collegeboard.org/about-tests>
- Day, J. A. (1986). Graduate record examination analytical scores as predictors of academic success in four entry-level master's degree physical therapy programs. *Physical Therapy*, 66(10), 1555-1562.
- Dietrich, M. C. (1981). Putting objectivity in the allied health student selection process. *Journal of Allied Health*, 10(4), 226-239.
- Downey, M. C., Collins, M. A., & Browning, W. D. (2002). Predictors of success in dental hygiene education: A six year review. *Journal of Dental Education*, 66(11), 1269-1273.
- Educational Testing Services (2009). *The Graduate Records Examinations*. Retrieved

from www.ets.org

- Edwards, J. C., Johnson, E. K., & Molidor, J. B. (1990). The interview in the admission process. *Academic Medicine, March*, 167-177.
- Elam, C. L., & Andrykowski, M. A. (1991). Admission interview ratings: relationship to academic and demographic variables and interviewer characteristics. *Academic Medicine, 66*(9), 13-15.
- Gabard, D. L., Porzio, R., Oxford, T., & Braun, R. (1997). Admissions Interviews: Questions of utility and cost in masters of physical therapy programs in the United States. *Physiotherapy Research International, 2*(3), 135-166.
- Gall, M. D., Gall, J. P., & Borg, W. R. (2006). *Educational research: An introduction* (8th ed.). Upper Saddle River, NJ: Allyn & Bacon.
- Georgia Health Sciences University, Department of Occupational Therapy (2011). 2011-2012 Student Handbook . Retrieved from <http://georgiahealth.edu/alliedhealth/ot/documents/studenthandbook.pdf>
- Grant, A. (2010, December 6). The 50 Best Careers of 2011. *US News and World Reports*. Retrieved from <http://money.usnews.com/money/careers/articles/2010/12/06/the-50-best-careers-of-2011>
- Guffey, J. S., Farris, J. W., Aldridge, R., & Thomas, T. (2002). An evaluation of the usefulness of noncognitive variables as predictors of scores on the national physical therapy licensing examination. *Journal of Allied Health, 31*(2), 78-104.
- Hollman, J. H., Rindslesch, A. B., Youdas, J. W., Krause, D. A., Hellyer, N. J., & Kinlaw, D. (2008). Retrospective analysis of the behavioral interview and other preadmission variables to predict licensure examination outcomes in physical

- therapy. *Journal of Allied Health*, 37(2), 97-104.
- Hunter, J. E., & Hunter, R. F. (1984). Validity and utility of alternative predictors of job performance. *Psychological Bulletin*, 96, 72-98.
- Isenburg, B. D., & Heater, S. L. (1994). Professionalization of the field: How can educational programs identify the best applicants? *The American Journal of Occupational Therapy*, 48(8), 758-759.
- Jedlicka, J. S., Mosley, L. J., Jaffe, L., & Kassner, T. C. (2004). Comprehensive exit examinations: A tool for evaluating and facilitating competency of occupational therapy graduates. *Education Special Interest Section Quarterly*, 11, 1-3.
- Jewell, D. V., & Riddle, D. L. (2005). A method for predicting a student's risk for academic probation in an professional program in allied health. *Journal of Allied Health*, 34(1), 17-23.
- Katz, G. M., & Mosey, A. C. (1980). Fieldwork performance, academic grades, and pre-selection criteria of occupational therapy students. *American Journal of Occupational Therapy*, 34, 794-800.
- Kirchner, G. L., & Holm, M. B. (1997). Prediction of academic and clinical performance of occupational therapy students in an entry-level master's program. *The American Journal of Occupational Therapy*, 51(9), 775-779.
- Kuncel, N.R., Hezlett, S. A., & Ones, D. S. (2001). A comprehensive meta-analysis of the predictive validity of the graduate record examination: Implications for graduate student selection and performance. *Psychological Bulletin*, 127(3), 162-181.
- Lievens, F., Coetsier, P., De Fruyt, F., & de Maeseneer, J. (2002). Medical students'

personality characteristics and academic performance: a five-factor model perspective. *Medical Education*, 36, 1050-1056.

Lucci, J. A., & Brockway, J. A. (1980). Student selection process: A follow-up study.

The American Journal of Occupational Therapy, 34(1), 27-32.

Lyons, M., Mackenzie, L., Bore, M., & Powis, D. (2006). Framing a set of non-academic selection criteria for occupational therapy students: An Australian study.

Australian Occupational Therapy Journal, 53, 284-292. doi:10.1111/j.1440-1630.2006.00591.x

Lysaght, R., Donnelly, C., & Villeneuve, M. (2009). Factors predicting applicant

outcomes in occupational therapy. *Canadian Journal of Occupational Therapy*, 76(1), 38-47.

Macan, T. H., & Dipboye, R. L. (1990). The relationship of interviewers' preinterview

impressions to selection and recruitment outcomes. *Personnel Psychology*, 43(4), 745-768.

Mann, W. C., & Banasiak, N. (1985). Fieldwork performance and academic grades. *The*

American Journal of Occupational Therapy, 39(2), 92-95.

McDonald, J. H. (2009). Handbook of biological statistics (2nd ed). Baltimore: Sparky

House Publishing.

McEwen, M. & Crawford, L. (1995). The admission process: In search of congruity in

practice. *Education Special Interest Section*, 5(1), 1-2.

McGinnis, M. E. (1984). Admissions predictors for pre-physical therapy majors. *Physical*

Therapy, 64(1), 55-58.

Mentasti, L. E., & Thibodeau, E. A. (2006). Nonacademic characteristics of dental school

- applicants. *Journal of Dental Education*, 70(10), 1043-1050.
- Murden, R., Galloway, G. M., Reid, J. C., & Colwill, J. M. (1977). Academic and personal characteristics as predictors of clinical success in medical school. *Research in Medical Education*, 16, 181-186.
- National Board for Certification in Occupational Therapy (2003). *Executive summary for the practice analysis summary*. Gaithersburg, MD: Author.
- National Board for Certification in Occupational Therapy (2008). *NBCOT 2008 Practice Analysis*. Gaithersburg, MD: Author.
- National Board for Certification in Occupational Therapy (2009). *Foundations of the NBCOT Examination*. Gaithersburg, MD: Author.
- National Board for Certification in Occupational Therapy (2011). *OTR Certification Examination Handbook*. Gaithersburg, MD: Author.
- Nayer, M. (1992). Admission criteria for entrance to physiotherapy schools: How to choose among many applicants. *Physiotherapy Canada*, 44(3), 41-46.
- Nemko, M. (2006, January 5). Excellent careers for 2006. Retrieved from http://www.usnews.com/usnews/biztech/articles/060105/5careers_excellent.htm
- Nemko, M. (2008, December 11). Best careers 2009: What's new in 2009...and some advice on picking a career. *US News and World Reports*. Retrieved from <http://money.usnews.com/money/careers/articles/2008/12/11/best-careers-2009>
- Platt, L. S., Turocy, P. S., & McGlumphy, B. E. (2001). Preadmission criteria as predictors of academic success in entry-level athletic training and other allied health educational programs. *Journal of Athletic Training*, 36(2), 141-144.
- Posthuma, B., & Noh, S. (1990). Interview scores and academic grades as prediction

- criteria for admission to an occupational therapy program. *Canadian Journal of Occupational Therapy*, 57, 285-291.
- Posthuma, B. W., & Sommerfreund, J. (1985). Examination of selection criteria for a program in occupational therapy. *The American Journal of Occupational Therapy*, 39(7), 441-445.
- Reed, K. L. (1993). The beginnings of occupational therapy. In H. L. Hopkins & H. D. Smith (Eds.), *Willard and Spackman's Occupational Therapy* (pp. 26-43). Philadelphia: Lippincott.
- Reilly, R. R. (1974). Factors in graduate student performance. *American Educational Research Journal*, 13, 125-138.
- Robert Wood Johnson Foundation. (2011). Health care workforce: Future supply vs. demand.
- Roehrig, S. (1990). Prediction of student problems in a baccalaureate physical therapy program. *Journal of Physical Therapy Education*, 4, 26-30.
- Salvatori, P. (2001). Reliability and validity of admissions tools used to select students for the health professions. *Advances in Health Sciences Education*, 6, 159-175.
- Schmalz, G. M., Rahr, R. R. & Allen, R. M. (1990). The use of preadmission data to predict levels of success in selected allied health students. *Occupational Therapy Journal of Research*, 10, 367-375.
- Schwartz, K. B. (2003). The history of occupational therapy. In E. B. Crepeau, E. S. Cohn, & Schell, B. A. (Eds.), *Willard and Spackman's Occupational Therapy* (pp. 5-33). Philadelphia: Lippincott.
- Scott, A. H., Chase, L. M., Lefkowitz, R., Morton-Rose, D., Chambers, C., Joe, J.,

- Holmes, G., & Bloomberg, S. (1995). A national survey of admissions criteria and processes in selected allied health professions. *Journal of Allied Health, 24*(2), 95-107.
- Shaw, D. L., Martz, D. M., Lancaster, C. J., & Sade, R. M. (1995). Influence of medical school applicants demographic and cognitive characteristics on interviewers' ratings of noncognitive traits. *Academic Medicine, 70*(5), 532-536.
- Shepard, K. (1980). Use of small group interviews for selection into allied health educational programs. *Journal of Applied Health, 9*(2), 86-94.
- Stoecker, J. L. (1990). Occupational attainment in selected allied health professions. *Journal of Allied Health, 19*(4), 325-338.
- Tan, K., Meredith, P., & McKenna, K. (2004). Predictors of occupational therapy students' clinical performance: An exploratory study. *Australian Occupational Therapy Journal, 51*(1), 25-33.
- Thieman, T. J., Weddle, M. I., & Moore, M. A. (2003). Predicting academic, clinical and licensure examination performance in a professional (entry-level) master's degree program in physical therapy. *Journal of Physical Therapy Education, 17*(2), 32-37.
- Tickle-Degnen, L. (1998). Working well with others: The prediction of students' clinical performance. *The American Journal of Occupational Therapy, 52*(2), 133-142.
- University System of Georgia. (2010). Board of Regents Policy Manual. Retrieved September 30, 2010 from http://www.usg.edu/policymanual/section4/policy/4.2_undergraduate_admissions/#p4.2.3_additional_admissions_policies
- US Department of Education (2011). *Family Education and Privacy Act. Section 99.31,*

3ii.

- US News. (2007, December 19). The Components of 31 Top Careers. *US News and World Reports*. Retrieved from <http://money.usnews.com/money/careers/articles/2007/12/19/the-components-of-31-top-careers>
- US News (2008, December 11). The report card: The 30 best careers and how they rate. *US News and World Reports*. Retrieved from www.usnews.com/money/careers/articles/2008/12/11/the-report-card.html
- Utzman, R. R., Riddle, D. L., & Jewell, D. V. (2007). Use of demographic and quantitative admissions data to predict academic difficulty among professional physical therapist students. *Physical Therapy*, 87(9), 1164-1180.
- Vargo, J., Madill, H., & Davidson, P. (1986). The preadmission interview as a predictor of academic grades and fieldwork performance. *Canadian Journal of Occupational Therapy*, 53, 211-215.
- Watson, C. J., Barnes, C. A., & Williamson, J. W. (2000). Determinants of clinical performance in a physical therapy program. *Journal of Allied Health*, 29(3), 150-156.
- Wolgemuth, L. (2009, December 28). The 50 Best Careers of 2010. *US News and World Reports*. Retrieved from <http://money.usnews.com/money/careers/articles/2009/12/28/the-50-best-careers-of-2010>
- Youdas, J.W., Hallman, H. O., Carey, J. R., Bogard, C. L., & Garrett, T. R. (1992). Reliability and validity of judgments of applicant essays as a predictor of academic success in an entry-level physical therapy education program. *Journal of Physical Therapy Education*, 6, 15-18.

APPENDIX A
AOTA'S FIELDWORK PERFORMANCE EVALUATION
(FWPE)



Fieldwork Performance Evaluation For The Occupational Therapy Student

MS./MR. _____
 NAME: (LAST) _____ (FIRST) _____ (MIDDLE) _____

COLLEGE OR UNIVERSITY _____

FIELDWORK SETTING:

NAME OF ORGANIZATION/FACILITY _____

ADDRESS: (STREET OR PO BOX) _____

CITY _____ STATE _____ ZIP _____

TYPE OF FIELDWORK _____

ORDER OF PLACEMENT: 1 2 3 4 / OUT OF 1 2 3 4

FROM: _____ TO: _____
 DATES OF PLACEMENT _____

NUMBER OF HOURS COMPLETED _____

FINAL SCORE _____

PASS: _____ NO PASS: _____

SIGNATURES:
 I HAVE READ THIS REPORT. _____

SIGNATURE OF STUDENT _____

NUMBER OF PERSONS CONTRIBUTING TO THIS REPORT _____

SIGNATURE OF RATER #1 _____

PRINT NAME/CREDENTIALS/POSITION _____

SIGNATURE OF RATER #2 (IF APPLICABLE) _____

PRINT NAME/CREDENTIALS/POSITION _____

SUMMARY COMMENTS:
 (ADDRESSES STUDENT'S CLINICAL COMPETENCE)

AOTA grants permission to photocopy the *Fieldwork Performance Evaluation for the Occupational Therapy Student* for training purposes only. Training purposes encompass using the FWPE forms in student notebooks and training manuals for clinical fieldwork sites, in training sessions for practitioners on the proper use and scoring of the forms, and for students to complete a self-analysis during their fieldwork training. Permission to use the forms must be submitted to copyright@aota.org

Fieldwork Performance Evaluation For The Occupational Therapy Student

This evaluation is a revision of the 1987 American Occupational Therapy Association, Inc. Fieldwork Evaluation Form for the Occupational Therapist and was produced by a committee of the Commission on Education.

PURPOSE

The primary purpose of the Fieldwork Performance Evaluation for the Occupational Therapy Student is to measure entry-level competence of the occupational therapy student. The evaluation is designed to differentiate the competent student from the incompetent student and is not designed to differentiate levels above entry level competence. For further clarification on entry-level competency refer to the Standards of Practice for Occupational Therapy¹.

The evaluation is designed to measure the performance of the occupational therapy process and was not designed to measure the specific occupational therapy tasks in isolation. This evaluation reflects the 1998 Accreditation Council for Occupational Therapy Education Standards and the National Board for Certification in Occupational Therapy, Inc. Practice Analysis results². In addition, this evaluation allows students to evaluate their own strengths and challenges in relation to their performance as an occupational therapist.

USE OF THE FIELDWORK PERFORMANCE EVALUATION FOR THE OCCUPATIONAL THERAPY STUDENT

The Fieldwork Performance Evaluation is intended to provide the student with an accurate assessment of his/her competence for entry-level practice. Both the student and fieldwork educator should recognize that growth occurs over time. **The midterm and final evaluation scores will reflect development of student competency and growth.** In order to effectively use this evaluation to assess student competence, site-specific objectives need to be developed. Utilize this evaluation as a framework to assist in ensuring that all key performance areas are reflected in the site-specific objectives.

Using this evaluation at midterm and final, it is suggested that the student complete a self-evaluation of his/her own performance. During the midterm review process, the student and fieldwork educator should collaboratively develop a plan, which would enable the student to achieve entry-level competence by the end of the fieldwork experience. This plan should include specific objectives and enabling activities to be used by the student and fieldwork educator in order to achieve the desired competence.

The Fieldwork Educator must contact the Academic Fieldwork Coordinator when: (1) a student exhibits unsatisfactory behavior in a substantial number of tasks or (2) a student's potential for achieving entry-level competence by the end of the affiliation is in question.

DIRECTIONS FOR RATING STUDENT PERFORMANCE

- There are 42 performance items.
- Every item must be scored, using the one to four point rating scale (see below).
- **The rating scales should be carefully studied prior to using this evaluation.** Definitions of the scales are given at the top of each page.
- Circle the number that corresponds to the description that best describes the student's performance.
- **The ratings for the Ethics and Safety items must be scored at 3 or above on the final evaluation for the student to pass the fieldwork experience.** If the ratings are below 3, continue to complete the Fieldwork Performance Evaluation to provide feedback to the student on her/his performance.
- Record midterm and final ratings on the Performance Rating Summary Sheet.
- Compare overall midterm and final score to the scale below.

OVERALL MIDTERM SCORE

Satisfactory Performance 90 and above
Unsatisfactory Performance 89 and below

OVERALL FINAL SCORE

Pass 122 points and above
No Pass 121 points and below

RATING SCALE FOR STUDENT PERFORMANCE

- 4 — **Exceeds Standards:** Performance is highly skilled and self-initiated. This rating is **rarely given** and **would represent the top 5% of all the students** you have supervised.
- 3 — **Meets Standards:** Performance is consistent with **entry-level** practice. This rating is **infrequently given at midterm** and is a **strong rating at final**.
- 2 — **Needs improvement:** Performance is **progressing but** still needs improvement for entry-level practice. This is a **realistic rating of performance at midterm**, and some ratings of 2 may be reasonable at the final.
- 1 — **Unsatisfactory:** Performance is **below standards** and requires development for entry-level practice. This rating is given when **there is a concern about performance**.

RATING SCALE FOR STUDENT PERFORMANCE

- 4 — **Exceeds Standards:** Performance is highly skilled and self-initiated. This rating is **rarely given** and **would represent the top 5% of all the students** you have supervised.
- 3 — **Meets Standards:** Performance is consistent with **entry-level** practice. This rating is **infrequently given at midterm** and is a **strong rating at final**.
- 2 — **Needs improvement:** Performance is **progressing** but still needs improvement for entry-level practice. This is a **realistic rating of performance at midterm**, and some ratings of 2 may be reasonable at the final.
- 1 — **Unsatisfactory:** Performance is **below standards** and requires development for entry-level practice. This rating is given when **there is a concern about performance**.

I. FUNDAMENTALS OF PRACTICE:

All items in this area must be scored at a #3 or above on the final evaluation in order to pass fieldwork.

1. **Adheres to ethics:** Adheres consistently to the American Occupational Therapy Association Code of Ethics⁴ and site's policies and procedures including when relevant, those related to human subject research.
- | | | | | |
|---------|---|---|---|---|
| Midterm | 1 | 2 | 3 | 4 |
| Final | 1 | 2 | 3 | 4 |
2. **Adheres to safety regulations:** Adheres consistently to safety regulations. Anticipates potentially hazardous situations and takes steps to prevent accidents.
- | | | | | |
|---------|---|---|---|---|
| Midterm | 1 | 2 | 3 | 4 |
| Final | 1 | 2 | 3 | 4 |
3. **Uses judgment in safety:** Uses sound judgment in regard to safety of self and others during all fieldwork-related activities.
- | | | | | |
|---------|---|---|---|---|
| Midterm | 1 | 2 | 3 | 4 |
| Final | 1 | 2 | 3 | 4 |

Comments on strengths and areas for improvement:

• Midterm

• Final

II. BASIC TENETS:

4. Clearly and confidently **articulates the values and beliefs** of the occupational therapy profession to clients, families, significant others, colleagues, service providers, and the public.
- | | | | | |
|---------|---|---|---|---|
| Midterm | 1 | 2 | 3 | 4 |
| Final | 1 | 2 | 3 | 4 |
5. Clearly, confidently, and accurately **articulates the value of occupation** as a method and desired outcome of occupational therapy to clients, families, significant others, colleagues, service providers, and the public.
- | | | | | |
|---------|---|---|---|---|
| Midterm | 1 | 2 | 3 | 4 |
| Final | 1 | 2 | 3 | 4 |
6. Clearly, confidently, and accurately **communicates the roles of the occupational therapist and occupational therapy assistant** to clients, families, significant others, colleagues, service providers, and the public.
- | | | | | |
|---------|---|---|---|---|
| Midterm | 1 | 2 | 3 | 4 |
| Final | 1 | 2 | 3 | 4 |
7. **Collaborates with** client, family, and significant others throughout the occupational therapy process.
- | | | | | |
|---------|---|---|---|---|
| Midterm | 1 | 2 | 3 | 4 |
| Final | 1 | 2 | 3 | 4 |

Comments on strengths and areas for improvement:

• Midterm

• Final

RATING SCALE FOR STUDENT PERFORMANCE

- 4 — **Exceeds Standards:** Performance is highly skilled and self-initiated. This rating is **rarely given** and **would represent the top 5% of all the students** you have supervised.
- 3 — **Meets Standards:** Performance is consistent with **entry-level** practice. This rating is **infrequently given at midterm** and is a **strong rating at final**.
- 2 — **Needs Improvement:** Performance is **progressing but still needs** improvement for entry-level practice. This is a **realistic rating of performance at midterm**, and some ratings of 2 may be reasonable at the final.
- 1 — **Unsatisfactory:** Performance is **below standards** and requires development for entry-level practice. This rating is given when **there is a concern about performance**.

III. EVALUATION AND SCREENING:

8. **Articulates a clear and logical rationale** for the evaluation process.
- | | | | | |
|---------|---|---|---|---|
| Midterm | 1 | 2 | 3 | 4 |
| Final | 1 | 2 | 3 | 4 |
9. **Selects relevant screening and assessment methods** while considering such factors as client's priorities, context(s), theories, and evidence-based practice.
- | | | | | |
|---------|---|---|---|---|
| Midterm | 1 | 2 | 3 | 4 |
| Final | 1 | 2 | 3 | 4 |
10. **Determines client's occupational profile** and performance through appropriate assessment methods.
- | | | | | |
|---------|---|---|---|---|
| Midterm | 1 | 2 | 3 | 4 |
| Final | 1 | 2 | 3 | 4 |
11. **Assesses client factors and context(s)** that support or hinder occupational performance.
- | | | | | |
|---------|---|---|---|---|
| Midterm | 1 | 2 | 3 | 4 |
| Final | 1 | 2 | 3 | 4 |
12. **Obtains sufficient and necessary information** from relevant resources such as client, families, significant others, service providers, and records prior to and during the evaluation process.
- | | | | | |
|---------|---|---|---|---|
| Midterm | 1 | 2 | 3 | 4 |
| Final | 1 | 2 | 3 | 4 |
13. **Administers assessments** in a uniform manner to ensure findings are valid and reliable.
- | | | | | |
|---------|---|---|---|---|
| Midterm | 1 | 2 | 3 | 4 |
| Final | 1 | 2 | 3 | 4 |
14. **Adjusts/modifies the assessment procedures** based on client's needs, behaviors, and culture.
- | | | | | |
|---------|---|---|---|---|
| Midterm | 1 | 2 | 3 | 4 |
| Final | 1 | 2 | 3 | 4 |

15. **Interprets evaluation results** to determine client's occupational performance strengths and challenges.
- | | | | | |
|---------|---|---|---|---|
| Midterm | 1 | 2 | 3 | 4 |
| Final | 1 | 2 | 3 | 4 |
16. **Establishes an accurate and appropriate plan** based on the evaluation results, through integrating multiple factors such as client's priorities, context(s), theories, and evidence-based practice.
- | | | | | |
|---------|---|---|---|---|
| Midterm | 1 | 2 | 3 | 4 |
| Final | 1 | 2 | 3 | 4 |
17. **Documents the results of the evaluation** process that demonstrates objective measurement of client's occupational performance.
- | | | | | |
|---------|---|---|---|---|
| Midterm | 1 | 2 | 3 | 4 |
| Final | 1 | 2 | 3 | 4 |

Comments on strengths and areas for improvement:

• Midterm

• Final

IV. INTERVENTION:

18. **Articulates a clear and logical rationale** for the intervention process.
- | | | | | |
|---------|---|---|---|---|
| Midterm | 1 | 2 | 3 | 4 |
| Final | 1 | 2 | 3 | 4 |
19. **Utilizes evidence** from published research and relevant resources to make informed intervention decisions.
- | | | | | |
|---------|---|---|---|---|
| Midterm | 1 | 2 | 3 | 4 |
| Final | 1 | 2 | 3 | 4 |

20. **Chooses occupations** that motivate and challenge clients.

Midterm 1 2 3 4

Final 1 2 3 4

21. **Selects relevant occupations** to facilitate clients meeting established goals.

Midterm 1 2 3 4

Final 1 2 3 4

22. **Implements intervention plans that are client-centered.**

Midterm 1 2 3 4

Final 1 2 3 4

23. **Implements intervention plans that are occupation-based.**

Midterm 1 2 3 4

Final 1 2 3 4

24. **Modifies task approach, occupations, and the environment** to maximize client performance.

Midterm 1 2 3 4

Final 1 2 3 4

25. **Updates, modifies, or terminates the intervention plan** based upon careful monitoring of the client's status.

Midterm 1 2 3 4

Final 1 2 3 4

26. **Documents client's response** to services in a manner that demonstrates the efficacy of interventions.

Midterm 1 2 3 4

Final 1 2 3 4

Comments on strengths and areas for improvement:

• Midterm

• Final

V. MANAGEMENT OF OCCUPATIONAL THERAPY SERVICES:

27. **Demonstrates through practice or discussion the ability to assign** appropriate responsibilities to the occupational therapy assistant and occupational therapy aide.

Midterm 1 2 3 4

Final 1 2 3 4

28. **Demonstrates through practice or discussion the ability to actively collaborate** with the occupational therapy assistant.

Midterm 1 2 3 4

Final 1 2 3 4

29. **Demonstrates understanding of the costs and funding** related to occupational therapy services at this site.

Midterm 1 2 3 4

Final 1 2 3 4

30. **Accomplishes organizational goals** by establishing priorities, developing strategies, and meeting deadlines.

Midterm 1 2 3 4

Final 1 2 3 4

31. **Produces the volume of work** required in the expected time frame.

Midterm 1 2 3 4

Final 1 2 3 4

Comments on strengths and areas for improvement:

• Midterm

• Final

RATING SCALE FOR STUDENT PERFORMANCE

- 4 — **Exceeds Standards:** Performance is highly skilled and self-initiated. This rating is **rarely given** and **would represent the top 5% of all the students** you have supervised.
- 3 — **Meets Standards:** Performance is consistent with **entry-level** practice. This rating is **infrequently given at midterm** and is a **strong rating at final**.
- 2 — **Needs improvement:** Performance is **progressing** but still needs improvement for entry-level practice. This is a **realistic rating of performance at midterm**, and some ratings of 2 may be reasonable at the final.
- 1 — **Unsatisfactory:** Performance is **below standards** and requires development for entry-level practice. This rating is given when **there is a concern about performance**.

VI. COMMUNICATION:

32. **Clearly and effectively communicates verbally and nonverbally** with clients, families, significant others, colleagues, service providers, and the public.

Midterm	1	2	3	4
Final	1	2	3	4

33. **Produces clear and accurate documentation** according to site requirements.

Midterm	1	2	3	4
Final	1	2	3	4

34. **All written communication is legible**, using proper spelling, punctuation, and grammar.

Midterm	1	2	3	4
Final	1	2	3	4

35. **Uses language appropriate to the recipient** of the information, including but not limited to funding agencies and regulatory agencies.

Midterm	1	2	3	4
Final	1	2	3	4

Comments on strengths and areas for improvement:

- Midterm

- Final

VII. PROFESSIONAL BEHAVIORS:

36. **Collaborates with supervisor(s)** to maximize the learning experience.

Midterm	1	2	3	4
Final	1	2	3	4

37. **Takes responsibility for attaining professional competence** by seeking out learning opportunities and interactions with supervisor(s) and others.

Midterm	1	2	3	4
Final	1	2	3	4

38. **Responds constructively to feedback.**

Midterm	1	2	3	4
Final	1	2	3	4

39. **Demonstrates consistent work behaviors** including initiative, preparedness, dependability, and work site maintenance.

Midterm	1	2	3	4
Final	1	2	3	4

40. **Demonstrates effective time management.**

Midterm	1	2	3	4
Final	1	2	3	4

41. **Demonstrates positive interpersonal skills** including but not limited to cooperation, flexibility, tact, and empathy.

Midterm	1	2	3	4
Final	1	2	3	4

42. **Demonstrates respect for diversity** factors of others including but not limited to socio-cultural, socioeconomic, spiritual, and lifestyle choices.

Midterm	1	2	3	4
Final	1	2	3	4

Comments on strengths and areas for improvement:

- Midterm

- Final

PERFORMANCE RATING SUMMARY SHEET

Performance Items	Midterm Ratings	Final Ratings
I. FUNDAMENTALS OF PRACTICE		
1. Adheres to ethics		
2. Adheres to safety regulations		
3. Uses judgment in safety		
II. BASIC TENETS OF OCCUPATIONAL THERAPY		
4. Articulates values and beliefs		
5. Articulates value of occupation		
6. Communicates role of occupational therapist		
7. Collaborates with clients		
III. EVALUATION AND SCREENING		
8. Articulates clear rationale for evaluation		
9. Selects relevant methods		
10. Determines occupational profile		
11. Assesses client and contextual factors		
12. Obtains sufficient and necessary information		
13. Administers assessments		
14. Adjusts/modifies assessment procedures		
15. Interprets evaluation results		
16. Establishes accurate plan		
17. Documents results of evaluation		
IV. INTERVENTION		
18. Articulates clear rationale for intervention		
19. Utilizes evidence to make informed decisions		
20. Chooses occupations that motivate and challenge		
21. Selects relevant occupations		
22. Implements client-centered interventions		
23. Implements occupation-based interventions		
24. Modifies approach, occupation, and environment		
25. Updates, modifies, or terminates intervention plan		
26. Documents client's response		
V. MANAGEMENT OF OT SERVICES		
27. Demonstrates ability to assign through practice or discussion		
28. Demonstrates ability to collaborate through practice or discussion		
29. Understands costs and funding		
30. Accomplishes organizational goals		
31. Produces work in expected time frame		
VI. COMMUNICATION		
32. Communicates verbally and nonverbally		
33. Produces clear documentation		
34. Written communication is legible		
35. Uses language appropriate to recipient		
VII. PROFESSIONAL BEHAVIORS		
36. Collaborates with supervisor		
37. Takes responsibility for professional competence		
38. Responds constructively to feedback		
39. Demonstrates consistent work behaviors		
40. Demonstrates time management		
41. Demonstrates positive interpersonal skills		
42. Demonstrates respect for diversity		
TOTAL SCORE		

MIDTERM:

Satisfactory Performance 90 and above
 Unsatisfactory Performance 89 and below

FINAL:

Pass 122 points and above
 No Pass 121 points and below

REFERENCES

1. American Occupational Therapy Association. (1998). Standards of practice for occupational therapy. *American Journal of Occupational Therapy, 52*, 866–869.
2. Accreditation Council for Occupational Therapy Education. (1999). Standards for an accredited educational program for the occupational therapist. *American Journal of Occupational Therapy, 53*, 575–582.
3. National Board for Certification in Occupational Therapy. (1997). *National Study of Occupational Therapy Practice, Executive Summary*.
4. American Occupational Therapy Association. (2000). Occupational therapy code of ethics (2000). *American Journal of Occupational Therapy, 54*, 614–616.
5. American Occupational Therapy Association (2002). Occupational therapy practice framework: Domain and process. *American Journal of Occupational Therapy, 56*, 606–639.

GLOSSARY

Client Factors: Those factors that reside within the client and that may affect performance in areas of occupation. Client factors include body functions and body structures

- body functions (a client factor, including physical, cognitive, psychosocial aspects)—“the physiological function of body systems (including psychological functions)” (WHO, 2001, p.10)
- body structures—“anatomical parts of the body such as organs, limbs and their components [that support body function]” (WHO, 2001, p.10)

(Occupational therapy practice framework: Domain and process. *American Journal of Occupational Therapy, 56*, 606–639.)⁵

Code of Ethics: Refer to www.aota.org/general/coe.asp

Collaborate: To work together with a mutual sharing of thoughts and ideas (ACOTE Glossary)

Competency: Adequate skills and abilities to practice as an entry-level occupational therapist or occupational therapy assistant

Context: Refers to a variety of interrelated conditions within and surrounding the client that influence performance. Contexts include cultural, physical, social, personal, spiritual, temporal and virtual. (Occupational therapy practice framework: Domain and process. *American Journal of Occupational Therapy, 56*, 606–639.)⁵

Efficacy: Having the desired influence or outcome (from Neistadt and Crepeau, eds. *Willard & Spackman's Occupational Therapy*, 9th edition, 1998)

Entry-level practice: Refer to American Occupational Therapy Association (1993). Occupational therapy roles. *American Journal of Occupational Therapy, 47*, 1087–99.

Evidence-based Practice: “Conscientious, explicit and judicious use of current best evidence in making decisions about the care of individual patients. The practice of evidence-based [health care] means integrating individual clinical expertise with the best available external clinical evidence from systematic research.” (Sackett and colleagues, Evidence-based medicine: How to practice and teach EBM, 1997, p. 2) (From the Mary Law article “Evidence-Based Practice: What Can It Mean for ME?”. www.aota.org)

Occupation: Groups of activities and tasks of everyday life, named, organized, and given value and meaning by individuals and a culture; occupation is everything people do to occupy themselves, including looking after themselves (self-care), enjoying life (leisure), and contributing to the social and economic fabric of their communities (productivity); the domain of concern and the therapeutic medium of occupational therapy. (Townsend, ed., 1997, *Enabling Occupation: An Occupational Therapy Perspective*, p.181)

Occupational Performance: The result of a dynamic, interwoven relationship between persons, environment, and occupation over a person's lifespan; the ability to choose, organize, and satisfactorily perform meaningful occupations that are culturally defined and age appropriate for looking after oneself, enjoying life, and contributing to the social and economic fabric of a community. (Townsend, ed., 1997, *Enabling Occupation: An Occupational Therapy Perspective*, p.181)

Occupational Profile: A profile that describes the client's occupational history, patterns of daily living, interests, values and needs. (Occupational therapy practice framework: Domain and process. *American Journal of Occupational Therapy, 56*, 606–639.)⁵

Spiritual: (a context) The fundamental orientation of a person's life; that which inspires and motivates that individual. (Occupational therapy practice framework: Domain and process. *American Journal of Occupational Therapy, 56*, 606–639.)⁵

Theory: “An organized way of thinking about given phenomena. In occupational therapy the phenomenon of concern is occupational endeavor. Theory attempts to (1) define and explain the relationships between concepts or ideas related to the phenomenon of interest, (2) explain how these relationships can predict behavior or events, and (3) suggest ways that the phenomenon can be changed or controlled. Occupational therapy theory is concerned with four major concepts related to occupational endeavor: person, environment, health, and occupation.” (Neistadt and Crepeau, eds., *Willard & Spackman's Occupational Therapy*, 9th ed., 1998, p. 521)

APPENDIX B
INSTITUTIONAL REVIEW BOARD (IRB) APPROVALS

Georgia Southern University Office of Research Services & Sponsored Programs		
Institutional Review Board (IRB)		
Phone: 912-478-0843		Veazey Hall 2021
Fax: 912-478-0719	IRB@GeorgiaSouthern.edu	P.O. Box 8005 Statesboro, GA 30460

To: Sharon Swift
Dr. James Green

cc: Charles E. Patterson
Vice President for Research and Dean of the Graduate College

From: Office of Research Services and Sponsored Programs
Administrative Support Office for Research Oversight Committees
(IACUC/IBC/IRB)

Date: 12/07/11

Initial Approval Date: 12/07/11

Expiration Date: 12/31/12

Subject: Status of Application for Approval to Utilize Human Subjects in Research

After a review of your proposed research project numbered **H12166** and titled "**Relationship of Select Admissions Criteria to Pre-licensure Requirements in a Graduate Degree Program in Occupational Therapy.**" it appears that your research involves activities that do not require full approval by the Institutional Review Board according to federal guidelines.

According to the Code of Federal Regulations Title 45 Part 46, your research protocol is determined to be exempt from full review under the following exemption category(s):

B4 Research involving the collection or study of existing data, documents, records, pathological specimens, or diagnostic specimens, if these sources are publicly available or if the information is recorded by the investigator in such a manner that subjects cannot be identified, directly or through identifiers linked to the subjects.

Therefore, as authorized in the Federal Policy for the Protection of Human Subjects, I am pleased to notify you that your research is exempt from IRB approval. You may proceed with the proposed research.

Please notify the IRB when you have completed the project by emailing irb@georgiasouthern.edu. Include the date of completion, the number of subjects (records) utilized and if there were any unexpected events related to the subjects during the project. (If none, state no unexpected or adverse events occurred during the conduct of the research.)

Sincerely,



Eleanor Haynes
Compliance Officer

**GEORGIA SOUTHERN UNIVERSITY INSTITUTIONAL REVIEW BOARD
PROPOSAL NARRATIVE**

Personnel.

The primary investigator in this study will be Sharon Swift, doctoral candidate, within the Department of Educational Leadership. In addition, Dr James Green, Doctoral Committee Chairperson, will have access to the research data based on his role as the committee chairperson. Dr Bryan Griffin will also have access to the data as the committee methodologist. No data will be personally identifiable as all student names and student identifiers will be removed prior to data analysis.

It is important to disclose that the PI, Sharon Swift, is employed as a faculty member at the Department of Occupational Therapy at Georgia Health Science University. She is the committee chairperson of the Student Affairs Committee, which entails making admissions decisions for the department. As part of her essential duties, she must review all admissions documents for the department and, along with her committee, make decisions regarding which students should be admitted to the program. While her current position permits daily access to the data, it does not allow her to conduct research analysis on the variables for any purpose other than programmatic outcomes. I (Sharon Swift), am seeking permission to conduct research on the existing database of admission variables to determine whether the variables used to make admissions decisions are related to student success. Administrative staff members who are authorized to maintain the database of admission data will access the existing database to de-identify the data and assign a random identification number prior to data analysis. A copy of the master file will be maintained for back-up purposes only. The research data will be stored in a computer file with only the primary investigator having password protected access. The administrative staff member will have no further access to the data.

Purpose

The purpose of this study is to determine whether select admissions variables can predict graduates' performance on pre-licensure requirements: fieldwork performance evaluation, scores on the departmental exit examination, and first time performance on the National Board for Certification in Occupational Therapy exam. Specifically, the following predictor variables will be tested to determine both degree and nature of the relationship each holds with the measures of pre-licensure requirements: collegiate performance (overall GPA, math/science GPA, total credit hours prior to admission, prior degree, undergraduate major, college attended), GRE performance (verbal, quantitative, and writing scores), non-cognitive variables (previous experience and faculty rating on autobiographical essay). With this purpose in mind, the following questions will guide this research study:

5. To what degree can prior collegiate performance predict graduate performance on pre-licensure requirements?
6. To what degree can GRE scores predict performance on pre-licensure requirements?
7. To what degree, can non-cognitive variables (previous related experience and autobiographical essay scores) predict performance on pre-licensure requirements?
8. To what degree can the departmental exit exam and fieldwork performance evaluation predict performance on pre-licensure requirements?

An extensive review of the literature related to occupational therapy admissions, along with admissions to allied health professions has been conducted. In physical therapy, GPA has been shown to be the best predictor of academic success, and when combined with admission's essay can account for 51% of the variance in programmatic GPA (Balogun, 1986; Balogun, Karacoloff & Farina, 1986; McGinnis, 1984; Salvatori, 2001). A study of occupational therapy students found that a student's prior GPA has a strong correlation to the OT program GPA (Vargo, Madill, & Davidson, 1986). Despite the relationship between previous GPA and program GPA, there has been minimal evidence to indicate a relationship between academic grades and clinical performance. A study by Watson, Barnes & Williamson (2000) found that clinical grades for physical therapy students could not be predicted from academic grades in the physical therapy program. The majority of studies in occupational therapy support these findings with low and often insignificant correlations between academic performance and fieldwork ratings (Best, 1994; Katz & Mosey, 1980; Mann & Banasiak, 1985).

In addition to GPA, standardized test scores are the only other cognitive, and objective, variable utilized in the admissions process. Standardized tests are considered beneficial to the admissions process as the scores can be used as "equalizers to evaluate applicants with identical academic records who are from institutions of vastly different quality" (Dietrich, 1981, p. 228). A comprehensive meta-analysis found

that GRE-V, GRE-Q, GRE-A and subject tests were valid predictors of graduate grade point average (GGPA), 1st year GGPA, faculty ratings, and comprehensive examination scores for graduate students from multiple disciplines (N= 82,659) (Kuncel et al., 2001). Kirchner and Holm (1997) found the GRE to be predictive of program GPA ($p=.05$) for a limited sample of 75 students enrolled in a master's in occupational therapy program at the University of Puget Sound. The GRE-A score was a significant predictor of program GPA and contributed significantly to GPA variance for a sample of physical therapy students (Day, 1986). When combined with pre-admission GPA, the GRE-A accounted for 24% of the variance in program GPA for the physical therapy students in Day's study. However, in a profession where clinical skills are essential, admission variables must be able to identify not only those who will be successful in the classroom, but also in the clinical components of the curriculum and profession.

Due to the uniqueness of allied health professions, many programs require previous experience in the field prior to admission. A survey of allied health programs (N=188) indicated that 79% require some form of prior experience (Scott et al., 1995). While Auriemma's (2007) study reports that 38% of occupational therapy programs use this as a requirement, there is little information in the reviewed literature about the relationship, if any, to academic or clinical success. Despite the logical association between experience and success, few studies have included this as a variable. McGinnis (1984) found insignificant results within physical therapy but attributed this to confusion between the terms: volunteer, shadowing, and paid employment. McGinnis did determine that experience cannot be substituted for inadequate grades. The most extensive study on this topic comes from outside allied health, in the field of dental medicine. Due to the great paucity of studies on this topic, this study is worthy of including in this review. Mentasti and Thibodeau (2006) found that involvement in extracurricular activities prior to admission can be "reflective of an applicant's nonacademic interests, leadership potential and long-term commitment" (p. 1049). The authors went on to state that participation could be an "important indicator of social awareness, interpersonal skills, and dedication to the community or humanity" (p. 1049). Such traits are clearly valuable skills for healthcare professionals and have been alluded to by the American Occupational Therapy Association and Carnegie Commission on Higher Education. Mentasti and Thibodeau (2006) concluded that the best academically qualified applicants had few shadowing hours and greater than average involvement in volunteer and extracurricular activities. These results warrant close consideration within allied health and the profession of occupational therapy since these fields are known to be altruistic and philanthropic.

In a time where evidence based practice is expected, admission committees must provide evidence that the variables used to make admission decisions are valid and reliable. Committees are faced with numerous applicants who express a sincere desire to become occupational therapists. Current rankings as a top career by US News and World Reports have increased program applications, making slots in OT programs highly sought-after. Admission committees must select the best applicants in an attempt to predict those individuals who have the academic ability to withstand the rigor of the program and the humanistic ability to succeed in patient care. Academic health programs must ensure that the processes they employ when selecting healthcare workers of tomorrow are objective, equitable and humane. Thus, admission committees must be sure that they are making the best decisions on behalf of the student, program, profession, and ultimately the consumers of professional services.

This study will benefit the admission committee at the host institution by identifying admission variables that relate to success on pre-licensure requirements. In ongoing efforts to improve admission policies and ensure that the program selects the best applicants from all who apply, the outcomes from this study will affect admission policies and procedures for the host academic institution's occupational therapy department. An extensive literature review has been conducted by this researcher with little evidence on the use of the current admission variables for the Occupational Therapy Department and measures of student success. Furthermore, the Graduate Records Examination specifically states that validity studies must be conducted for any program that uses GRE scores as admission requirements. To date, no such studies have been conducted for the admission variables used for the Department of Occupational Therapy at Georgia Health Science University.

Outcome

The Department of Occupational Therapy at the host institution is the only occupational therapy program within the state's university system. Applications to this OT program are up 36% for fall, 2011 in comparison to the previous year and up 169% from four years ago. Hence, the program is faced with increasing numbers of applicants, greater than the national rate, for limited seats. Academic programs must

make admission decisions based on a variety of data despite little knowledge of whether data collected during the admissions process is related to programmatic outcomes and graduate success. This study will identify admission variables that provide value for the OT admission committee when making decisions on an applicant's file. Admission data that do not relate to a student's success in the program distracts the committee and may result in the selection of students who may not be successful in completing pre-licensure requirements. Admission variables that add value to the application must be identified to guide admission policy to ensure that the program selects the best applicants from all that apply.

The mission of the institution is specific in that campus programs must prepare healthcare professionals for the state. As the only public graduate occupational therapy program in the state, the host academic institution has a responsibility to ensure that they select and educate the best possible candidates for the community at large. Based on a thorough literature review there is a lack of information regarding graduate level admissions for occupational therapy; therefore, this study is groundbreaking research for the profession of OT and the host academic program.

Describe your subjects

The data utilized in this study are contained in an existing database associated with students who enrolled in a graduate level occupational therapy program at one health science university located in the Southeastern part of the United States. The OT program utilized for this study is the only public OT program within the university system, thus the program receives numerous applications from throughout the state. Applicants to the OT program may come from any of the 35 public colleges and universities within the state, or may apply from any other accredited institution. For the purposes of this study, data from students enrolled in the host institution's graduate level OT program from August 2006 to August 2011 will be included in this study.

This study will use existing admissions data for students who were accepted and matriculated in the academic program during the specified time period. Educational privacy regulations through Family Educational Rights and Privacy Act (FERPA) limit access to students' educational records (US Department of Education, 2011). FERPA permits access to these records, while maintaining confidentiality guidelines, for "organizations conducting certain studies for or on behalf of the school" (US Department of Education, 2011, Section 99.31). As this study will provide information to guide admission policies and processes at the host academic institution, access to these records will conform to FERPA standards. Any information regarding personal identities will be removed from the records; thus, confidentiality of individual students will be maintained. The targeted sample size for this study will be 160 existing student records using all available data for the specified time period from the host institution.

Methodology (Procedures)

Upon securing IRB approval from both academic institutions, the admissions variables and pre-licensure requirements for the specified enrollment time will be extracted from the existing database by administrative staff. The primary investigator will remove any personal identifying information from the existing database and assign a random identification number to each subject's educational record. An encrypted master copy of identified data will be kept on a secure network server for reference purposes only, with only the primary researcher having access. The primary investigator in this study will follow the host institution's policy and procedures for the storage of research data. Only data that are not personally identifiable will be utilized during data analysis and all data will be reported in aggregate format, thereby maintaining individual subject confidentiality. Data will be maintained for a minimum of five years following the conclusion of this study based on the host institution's research requirements for storage of data.

The primary investigator in this study serves as the Student Affairs Chairperson for the host occupational therapy program; thus, routine job functions require access to this data as part of admissions advising and decision making for the program. Hence, the primary investigator has access to all admission variables as part of the essential duties of the Student Affairs Committee. However, this access is limited to admissions decisions for the program and does not permit research to be conducted on the existing data set for purposes other than program evaluation. Consequently, for the purposes of this study, and the future ability to publish significant results, IRB approval at the host institution will be secured.

Data to be utilized in this study are available in an existing electronic database, thus the study will be ex post facto. Admission data are collected and entered into the database at the time of acceptance into the academic program by the host institution's admissions department and the Student Affairs Committee.

The electronic database is a comprehensive record of each student's admission information, and includes up to 136 admission variables per record. Upon completion of the academic program, the Student Affairs Committee enters additional data including exit exam scores, fieldwork scores, and NBCOT exam results for departmental reference purposes. To date, there has been no statistical analysis of the program's admission data and programmatic outcomes. For the purposes of this study, only those variables identified below will be analyzed to determine if a relationship exists between the admissions variables and pre-licensure requirements for students in the occupational therapy program at the identified institution.

This study will analyze admission and pre-licensure requirement data for students who were enrolled in the academic program from August 2006 to August 2011. This data set represents a group of students who have met all graduation requirements and are no longer enrolled at the host institution. Demographic data have been collected from information supplied on the initial admission application, including age and gender. Applicants to the educational program are required to submit educational transcripts from each post-secondary institution they have attended. Data that were initially collected from the transcripts include the total number of college credits, whether a college degree has been awarded, and the declared major. Grade point averages have been calculated by the admissions department based on all coursework completed prior to enrollment. Declared major and prior college attended are assigned at the time of admission based on the state's university grouping and a predetermined set of committee guidelines. Each student has submitted Graduate Records Examination (GRE) scores, as part of their admission packet, to the graduate occupational therapy program. Pre-licensure requirements have been entered into the established database following the completion of the program. The data will be maintained on a secure network by the primary investigator while following the host institution's policies and procedures for research data storage, and all names will be removed. The data will be password protected with only the PI having access. After the names are removed, there will be no personally identifiable information contained on the database.

Independent variables. Independent variables analyzed during this study consist of cognitive variables obtained from the existing database representing students enrolled in the OT program from August 2006 to August 2011. These variables are quantitative in nature and have been submitted to the institution as part of the initial application process. The selected variables for this study include the following: 1) overall GPA based on all college coursework; 2) math/science GPA; 3) verbal GRE score; 4) quantitative GRE score; 5) GRE written score; 6) previous experience; 7) autobiographical essay. Additional independent variables, deemed pertinent to this study, include total number of college credit hours, college degree earned, prior college attended, number of colleges attended, and declared college major.

Dependent variables. The dependent variables that will be included in the data analysis include select pre-licensure requirements. As with the independent measures presented above, these measures are located in the existing electronic database based on students who have already graduated from the program. As a mandatory graduation requirement, each subject must take a comprehensive departmental exit exam. These exam scores are recorded and maintained by the department. The existing OT curriculum requires successful completion of two fieldwork experiences, which may be completed at any of over two hundred facilities that have contracts with the host institution. Each student receives a fieldwork performance evaluation (FWPE) for each experience which has been completed by a supervising therapist. Thus, each student will have two FWPE evaluations in their educational record. The FWPE has seven subtests and an overall total score which are included in the departmental student database. Mean scores from the two administrations of the evaluation will be calculated by the primary investigator using Excel spreadsheet and entered into the database. This process will aid in elimination of evaluator bias and account for differences in scoring between different fieldwork evaluators. Upon successful completion of the two fieldwork experiences, each subject must take the National Occupational Therapy Certification Exam (NBCOT exam). NBCOT exam results are reported to the department each quarter in nominal, pass/fail format only. At this time, scaled scores are not available to the primary investigator from NBCOT.

Data Analysis

All data will be analyzed using Statistical Analysis Software (SAS). Results will be graphed for visual presentation and to facilitate understanding of the results. Statistical significance will be assessed using an alpha level of 0.05 unless otherwise noted. Linear regression will be used for continuous outcome measures. Simple linear regression models (for continuous independent variables), one-way ANOVA (for categorical independent variables) and t-tests (for dichotomous independent variables) will be used to

examine the potential relationships and differences between the continuous outcomes and each independent variable.

Special Conditions:

Risk. There are no risks associated with this study for the subjects. This study is an ex post facto review of existing educational records representative of a group of students who have been enrolled and graduated from the Occupational Therapy program. This ex post facto review of the admission variables will simply allow the department's admission committee to better understand the relationship between the variables and success on pre-licensure requirements. No data will be personally identifiable as all names and student identification numbers will be removed prior to data analysis.

Reminder: No research can be undertaken until your proposal has been approved by the IRB.



Date: 3/12/2012

HAC File #: [Pro00000435](#) , The Relationship of Select Admissions Requirements in a Graduate Degree Program in Occupational Therapy

Protocol Title The Relationship of Select Admissions Requirements in a Graduate Degree Program in Occupational Therapy

PI Name Sharon Swift

Approval Date 3/6/2012

Expiration Date 3/5/2013

The Human Assurance Committee (HAC) chairperson or designee reviewed and approved the referenced study and enclosed document(s) by the expedited procedure in accordance with the Department of Health and Human Services (DHHS) policy and the Institutional Assurance on file with the DHHS under the following criteria:

(5) Research involving materials (data, documents, records, or specimens) that have been collected, or will be collected solely for nonresearch purposes (such as medical treatment or diagnosis). (Note: Some research in this category may be exempt from the HHS regulations for the protection of human subjects, 45 CFR 46.101(b)(4) . This listing refers only to research that is not exempt.)

Approval has been granted for waiver of consent in accordance with the Department of Health and Human Services DHHS) policy, the Institutional Assurance on file with the DHHS and the Health Insurance Portability and Accountability Act (HIPPA) policy because:

1. The research involves no more than minimal risks to subjects.
2. The alteration or waiver of consent will not adversely affect the privacy rights and welfare of the individuals.
3. The research could not practicably be carried out without access to and use of the protected health information.
4. The research could not practicably be carried out without the waiver or alteration.
5. The privacy risks to individuals whose protected health information is to be used or disclosed are reasonable in relation to the anticipated benefits, if any, to the individuals, and the importance of the knowledge may reasonably be expected to

- result from the research.
6. There is an adequate plan to protect the identifiers from improper use and disclosure.
 7. There is an adequate plan to destroy identifiers at the earliest opportunity consistent with the conduct of the research unless there is a health or research justification for retaining the identifiers, or such retention is required by law.
 8. There are adequate written assurances that the protected health information will not be reused or disclosed to any other entity or person except as required by law, for authorized oversight of the research project, or for other research for which the use of disclosure of the protected information will be permitted.

The approval includes the following supporting documents

[student affairs spreadsheet.xlsx.pdf](#) 3/6/2012 0.01

The Committee calls your attention to the following obligations as Principal Investigator of this study. Under the terms of our approved Institutional Assurance to the Department of Health and Human Services, you must provide the HAC with a progress report at the termination of the study, or prior to the expiration of this approval, whichever comes first. If the study will continue beyond the initial approval term, review by the Human Assurance Committee is required, with a progress report constituting an important part of the review.

Failure to submit a Continuation Request by its due date will result in an automatic termination of this study. Reinstatement will only be granted following resubmission of the study to the HAC.

If patients are research subjects, as Principal Investigator, you must insure that all medical records contain appropriate indication of study participation, as specified in the MCG Health System Policies and Procedures (1.6.0, 3/17/95).

The HAC has determined that the interval of continuing review as noted by the approval and approval expiration dates above is appropriate to the degree of risk for this protocol.

If Veterans Affairs (VA) patients or facilities will be involved in this study, a letter of approval from the VA Research & Development Committee must also be obtained prior to involvement of VA patients or facilities.

Please feel free to contact our office at 706-721-3110 if you have any questions.

Warning: This is a private message for eIRB users only. If the reader of this message is not the intended recipient you are hereby notified that any dissemination, distribution or copying of this information is STRICTLY PROHIBITED.

Human Assurance Committee (HAC)
 Georgia Health Sciences University
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Augusta GA 30912-7621

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APPENDIX C
KEY TO CODING

KEY TO CODING

Column B: Start Date. Year that the subject started in the OT program

Column C: DOB. Year of subjects birth

Column D: Adm Age. Subjects age in years at the time of starting the program (Column B-Column C)

Column E: Sex. 1-Female; 2- Male

Column F: M/S GPA. Math/Science Grade Point Average

Column G: GPA. Overall GPA prior to attend MCG/GHSU

Column H: No of Schools. Number of institutions attended prior to MCG/GHSU

Column I: GRE V. GRE- Verbal score

Column J: GRE Math

Column K: GRE Writing

Column L: Total no of credits. Total number of semester credit hours prior to MCG/GHSU

Column M: Degree. 1: Yes; 2:No. Whether subject had earned a college degree prior to MCG/GHSU

Column N: Major. Major based on college the major is traditionally housed in.

1. College of Science (natural sciences & math)
2. School of Health Science
3. College of Arts & Science (psychology, liberal arts, communication)
4. College of Education
5. College of Business
6. PRE-OT
7. Family and Consumer Science
8. Undeclared
9. College of Public Health

Column O: Kinesiology Major. 1- Yes; 2- No

Column P: College Name. See Attached

Column Q: College Group. Based on USG categorization of colleges. See Attached

Column R: Carnegie. Based on Carnegie Basic Classification 2010 System.

- 1: Associate's Colleges
- 2: Doctorate – granting Universities
- 3: Masters Colleges and Universities
- 4: Baccalaureate Colleges
- 5: Special Focus Institutions

Column S: Additional Experience. 1= no additional experience. 5= family member received OT or PT services; 6= subject received OT or PT services; 7: both family and self have received therapy services.

Column T: Experience Type. Pre-admission experience with an occupational therapist

- 0- No experience evident
- 1- Talked to or shadowed OT to gain knowledge about the profession
- 2- Volunteered in health care, education, community, or related field < 6mo
- 3- Employment in health care, education, community, or related field < 6mo
- 4- Employment, or volunteer, for 6+ months; for seasonal opportunities- 2+ years.

Column U: Patient. Number of hours subject indicated on application under “patient contact experience, including shadowing a healthcare professional”

Column V: Related. Number of hours subject indicated on application spent in “related health care experience”.

Column W: Community. Number of hours subject indicated on application spent in “community service”

Column X: FW1 TOTAL. Total Score of all subsections of 1st level II fieldwork placement. (168 possible points)

Column Y: FW1 Section 1. Fundamentals of Practice. 3 items; 12 possible points

Column Z: FW1 Section 2. Basic Tenets. 4 items; 16 possible points.

Column AA: FW1 Section 3. Evaluation and Screening. 10 items, 40 possible points.

Column AB: FW1 Section 4. Intervention. 9 items, 36 possible points

Column AC: FW1 Section 5. Management of Occupational Therapy Services. 5 items, 20 possible points.

Column AD: FW1 Section 6. Communication. 4 items, 16 possible points.

Column AE: FW1 Section 7. Professional Behaviors. 7 items, 28 possible points.

Column AF: FW2 Total. Total Score of all subsections of 2nd level II fieldwork placement.

Column AG: FW2 Section 1. Fundamentals of Practice. 3 items; 12 possible points

Column AH: FW2 Section 2. Basic Tenets. 4 items; 16 possible points.

Column AI: FW2 Section 3. Evaluation and Screening. 10 items, 40 possible points.

Column AJ: FW2 Section 4. Intervention. 9 items, 36 possible points

Column AK: FW2 Section 5. Management of Occupational Therapy Services. 5 items, 20 possible points.

Column AL: FW2 Section 6. Communication. 4 items, 16 possible points.

Column AM: FW2 Section 7. Professional Behaviors. 7 items, 28 possible points.

Column AN: Exit Exam. Score on OT Departmental Exit Exam in percentage correct

Column AO: NBCOT. Pass rate on national board examination 1-First time pass; 2- Pass on repeat exam;

3- has not passed exam

Column AP: Essay Score. Faculty rating assigned to admission essay.

5- Outstanding response. Has significant insight of self, others, and profession

4- Good Response. Demonstrates insight towards self and/or others and/or profession

3. Adequate response of entry level OT applicant. Room for growth during program, potential to grow.

2- Weak response for entry level application, missing major point of question; lacks insight.

1- Poor response for entry level applicant. Lacks insight of self and others.

USG Grouping of Colleges/Carnegie Ranking

College Group 1: Research Universities

1: Georgia Health Sciences University- Specialty/Med

2: Georgia Institute of Technology- RU/VH

3: Georgia State University- RU/VH

4: University of Georgia- RU/VH

College Group 2: Regional Universities

5: Georgia Southern University - DRU

6: Valdosta State University- Masters L

College Group 3: State Universities

7: Albany State University- Masters M

8: Armstrong Atlantic State University- Masters- L

9: Augusta State University- Masters L

10: Clayton State University- Bac Diverse

11: Columbus State University- Masters- L

12: Fort Valley State University - Bac Diverse

13: Georgia College & State University- Masters L

14: Georgia Southwestern State University- Masters S

15: Kennesaw State University- Masters L

16: North Georgia College & State University- Masters L

17: Savannah State University- Bac/A & S

18: Southern Polytechnic State University- Masters M

19: University of West Georgia – Masters L

College Group 4: State Colleges

20: Abraham Baldwin Agricultural College- Assoc Pub 4

21: Atlanta Metropolitan College Assoc Pub U-SC

22: College of Coastal Georgia – Assoc Pub R-M

23: Dalton State College- Bac/Assoc

24: Darton College- Assoc Pub R-M

25: East Georgia College- Assoc Pub R-S

26: Gainesville State College- Assoc Pub 4

- 27: Georgia Gwinnett College- Bac/Diverse
- 28: Georgia Highlands College- Assoc/Pub R-M
- 29: Georgia Perimeter College- Assoc Pub S-MC
- 30: Gordon College- Assoc Pub 4
- 31: Macon State College- Bac Diverse
- 32: Middle Georgia College- Assoc Pub 4
- 33: South Georgia College- Assoc Pub RS

College Group 5: Two Year Colleges

- 34: Bainbridge College- Assoc Pub RM
- 35: Waycross College- Assoc Pub RS

College Group 6- Non-Ga public

College Group 7: Private (any)

College Group 8- 2 year colleges

Non- USG Institutions

- 36: Brenau University: 7, Masters L
- 37: University of Florida: 6 RU/VH
- 38: Berry : 7, Bac/A&S
- 39: Young Harris: 7, Assoc/Priv NFP
- 40: University of Missouri: 6, RUH
- 41: University of Mississippi: 6, RUH
- 42: University of South Carolina: 6, RU/VH
- 43: Clemson: 6 RUH
- 44: Covenant: 7, Private, Bac/Diverse
- 45: Slippery Rock University: 6, Masters L
- 46: Columbia College: 7, Masters M

- 47: Brewton Parker: 7, BAC/Diverse
- 48: Spelman : 7, Bac A/S
- 49: Lander University: 6, Bac Diverse
- 50: College of Charleston: 6, Masters M
- 51: Brigham Young: 7, RUH
- 52: Southern Adventist: 7, Bac/Diverse
- 53: Texas State: 6, Masters L
- 54: Mercer: 7, Masters L
- 55: Texas A&M: 6, Spec/MEd
- 56: Samford: 7, masters M
- 57: Middle Tennessee State: 6, DRU
- 58: Coastal Carolina: 6, Masters S
- 59: Emmanuel:7, Bac Diverse
- 60: Georgia Perimeter: 8, Assoc/Pub S-MC
- 61: Georgia Military College: 8 Assoc/Pub-Spec
- 62: University of Alabama: 6, RUH

Carnegie Classification:

Associate 1

Doctoral Granting 2 (RUH, DRU, RUVH)

Masters Colleges (all) 3

Baccalaureate (4)

Special Focus (5)

APPENDIX D
PEARSON CORRELATION TABLES FOR
FIELDWORK PERFORMANCE EVALUATIONS

Pearson Correlations for FWPE

	FW1 Total	FW Sec 1	FW1 Sec 2	FW1 Sec 3	FW 1 Sec 4	FW1 Sec 5	FW 1 Sec 6	FW1 Sec 7	FW 2 Total	FW2 Sec1	FW2 Sec 2	FW2 Sec 3	FW2 Sec4	FW2 Sec5	FW2 Sec 6	FW2 Sec 7
FW1 Total		.6053	.7442	.8537	.7777	.7866	.6458	.6301	.1865	.0737	.0834	.1936	.1582	.1507	.1853	.1293
FW Sec 1	.6053		.5010	.4695	.4106	.4151	.3719	.4056	.1735	.0684	.1455	.1960	.2227	.0804	.1474	.0571
FW1 Sec 2	.7442	.5010		.6216	.5459	.5538	.4258	.3662	.0988	-.0316	.0484	.1151	.1035	.1507	.0628	.0961
FW 1Sec 3	.8537	.4695	.6216		.6483	.6668	.5193	.4289	.2320	.1248	.1374	.2397	.1395	.1956	.2235	.1707
FW 1 Sec 4	.7777	.4106	.5459	.6483		.5256	.4622	.4616	.1781	.0656	.0226	.1481	.1858	.1164	.1913	.1228
FW1 Sec 5	.7866	.4151	.5538	.6668	.5256		.4753	.4470	.1571	.0669	.0647	.1818	.1562	.0945	.1709	.0570
FW 1 Sec 6	.6458	.3719	.4258	.5193	.4622	.4753		.2669	.1149	.0559	-.001	.0767	.0974	.1035	.1379	.1499
FW1 Sec 7	.6301	.4056	.3662	.4289	.4616	.4470	.2669		.0584	-.0743	-.031	.1335	.0103	.0328	.1209	.0874
FW 2 Total	.1865	.1735	.0988	.2320	.1781	.1571	.1149	.0584		.6838	.8164	.9045	.8597	.6311	.7944	.7477
FW2 Sec1	.0737	.0684	-.031	.1248	.0656	.0669	.0559	-.074	.6838		.5834	.5385	.5170	.4522	.4810	.5684
FW2 Sec 2	.0834	.1455	.0484	.1374	.0226	.0647	-.001	-.031	.8164	.5834		.7301	.6745	.4831	.6353	.5144
FW2 Sec 3	.1936	.1960	.1151	.2397	.1481	.1818	.0767	.1335	.9045	.5385	.7301		.7859	.4940	.6776	.5882
FW2 Sec4	.1582	.2227	.1035	.1395	.1856	.1562	.0974	.0103	.8597	.5170	.6745	.7859		.4557	.6260	.5941
FW2 Sec5	.1507	.0804	.1507	.1956	.1164	.0945	.1035	.0328	.6311	.4522	.4831	.4940	.4557		.4921	.5153
FW2 Sec 6	.1853	.1474	.0628	.2235	.1913	.1709	.1379	.1209	.7944	.4810	.6353	.6776	.6260	.4921		.6156
FW2 Sec 7	.1293	.0571	.0961	.1707	.1228	.0570	.1499	.0874	.7477	.5684	.5144	.5882	.5941	.5153	.6156	
Mean	141.28	10.33	13.22	32.60	29.96	16.26	13.96	25.26	141.26	10.55	13.38	32.51	30.05	16.33	13.66	25.28
SD	12.73	1.6	1.57	3.42	3.34	1.87	2.02	3.18	14.07	1.4	1.74	3.75	3.6	2.07	1.65	2.75

