

MEASURING THE KNOWLEDGE OF OCCUPATIONAL THERAPY STUDENTS
AND PRACTICING OCCUPATIONAL THERAPISTS REGARDING
SCHOOL-BASED OCCUPATIONAL THERAPY

A THESIS

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BY

HELEN BLACKLOCK, B.S.

DENTON, TEXAS

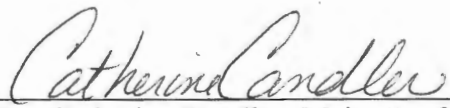
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To the Dean of the Graduate School:

I am submitting herewith a thesis written by Helen Blacklock entitled "Measuring the Knowledge of Occupational Therapy Students and Practicing Occupational Therapists Regarding School-Based Occupational Therapy." I have examined this thesis for form and content and recommend that it be accepted in partial fulfillment of the requirements for the degree of Master of Arts with a major in Occupational Therapy.


Dr. Catherine Candler, Major Professor

We have read this thesis and recommend its acceptance:


Department Chair

Accepted 

Dean of the Graduate School

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I would like to thank God, my family, friends, and colleagues, for helping me through this thesis. I especially want to thank my husband John, for his love, support and encouragement.

ABSTRACT

HELEN BLACKLOCK

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DECEMBER 2008

Over the years the need for occupational therapists practicing in the school setting has increased. The purpose of this study is to compare the knowledge concerning school based practice of occupational therapy students who have completed their didactic courses with that of practicing occupational therapists. The question remains whether the additions the academic communities have made to their curriculum have been enough to allow the occupational therapy students to demonstrate an increase in knowledge of occupational therapy in the schools. The 40 question “KNOTS Scale for Pediatric Occupational Therapists” was completed by 43 occupational therapy students and school-based therapists. The questions were divided into three categories: a) school-based, b) general pediatric, and c) legislative. Results of the data analysis indicated that there was a statistically significant difference between occupational therapy students who have completed their didactic course work and school-based occupational therapists in all three categories. The KNOTS Scale has many potential practical applications.

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CHAPTER I

INTRODUCTION

Brandenburger-Shasby and Trickey (2005) stated in their article that 25% of occupational therapists were employed in a school-based setting. In 2006 The American Occupational Therapy Association (AOTA) performed a Workforce Trends Study, which surveyed both AOTA members and non members. This survey identified 29.6 % of occupational therapists as being employed in a school-based setting (AOTA, 2006). As federal laws such as the Individuals with Disabilities Education Act (IDEA), No Child Left Behind (NCLB), and the American Rehabilitation Act have emerged we have seen an increase in the need for the skills of occupational therapy practitioners in the school setting. Occupational therapists practicing in schools require an increased proficiency in and understanding of the educational setting in which they work.

Occupational therapy students not only need training in basic occupational therapy intervention, but also in how to adapt occupational therapy to the school setting. Examples of occupational therapy skills in the school setting include transitioning a 3-year-old into a school setting from his or her early intervention program, preparing a high school student for the workplace, and learning how to work in partnership with the IEP team (Brandenburger-Shasby 2005). In contrast, traditional occupational therapy is limited to treating the underlying cause of pain or weakness within the hospital, clinic or home. The emphasis in this medical model of occupational therapy need not be

functional. Rather, the focus is on range of motion and the relief of pain. With a varied patient base occupational therapy needs to be taught in a way that addresses both the educational and the medical model.

Knowledge and skills of new graduates have been questioned by practicing occupational therapists. Adamson, Hunt, Harris, and Hummel (1998) in their study on new graduates in the allied health fields concluded that recent occupational therapy graduates do not believe they are adequately prepared for the workplace. The occupational therapy students indicated that the knowledge and skills gained during their undergraduate course work did not adequately prepare them for their place of work. This lack of comfort in practicing occupational therapy has been especially found in the school setting (Brandenburger-Shasby, 2005; Harris & Alley, 2000; Royeen & Furbish, 1996).

Veteran occupational therapists have compensated for this lack of academic training in a variety of ways. On the job training has been essential. The willingness to think in educational, as well as medical terms has also been helpful. None of this however, takes away from the demonstrated need for university programs to adapt to this new focus. Harris and Alley (2000) echo this sentiment and encourage not only more university classes that address this need, but also more continuing education programs that address school-based occupational therapy. Harris and Alley contend that with the increase of school-based practitioners and the lack of school-based continuing education therapists practicing in the schools must depend on their university programs to prepare them for working in the schools.

Since the 2000 survey of Brandenburger-Shasby the field of occupational therapy has increased opportunities for new graduates to learn school-based practice. The opportunity to learn school-based practice has made progress both through improved university programs and through increased fieldwork opportunities. This research will explore the issues of how well occupational therapists and occupational therapy students understand school-based practice.

CHAPTER II

LITERATURE REVIEW

Occupational therapy is a changing field of practice. It has evolved from work done by restorative aides during World War I to a practice that has expanded into many areas. In its beginning occupational therapy served people in institutional type centers such as hospitals, rehabilitation centers, and psychiatric settings. Throughout the years change has been constant. During the 1990's changes in the healthcare field influenced allied health professionals, including occupational therapists, to concentrate on health promotion, injury prevention, and wellness. This change in focus applied to the education sector as well as the medical community (Adamson et al., 1998). Healthcare policy and Federal and State laws accelerated these changes (Adamson et al., 1998; Brandenburger-Shasby & Trickey, 2001; Brandenburger-Shasby, 2005; Lemorie & Paul 2001; Lysack, Stadnyk, Paterson, McLeod, & Krefting, 1995).

In response to new laws that mandated inclusion of occupational therapy in the school setting, occupational therapy as a profession expanded from traditional healthcare to the school. By the 1970's and 1980's community-based practice demonstrated the largest increase of employment in occupational therapy (Lemorie & Paul, 2001) and school-based employees were the biggest portion of this increase (Brandenburger-Shasby, 2005; Royeen & Furbish, 1996).

Federal Law

The greatest single impetus to an increase in school-based occupational therapy occurred on November 29, 1975. On that date the United States Congress enacted the Education for All Handicapped Children Act (EHA) or Public Law 94-142. This law was intended to give support to states and local school districts for the protection of infants, children with disabilities and their families. It also opened occupational therapy and other disciplines to school-based therapy. Public Law 94-142 was amended several times between 1975 and 1997. The amendment of 1986 to EHA provided services and programs for children ages three through five. It also allowed for the option of early intervention programs for infants and toddlers. In 1990 PL 101-476 changed the name from Education for All Handicapped Children Act to Individuals with Disabilities Education Act or IDEA. Two changes were also implemented: assistive technology devices and services were recognized, and educational diagnosis of traumatic brain injury and autism were added. With the revision of IDEA in 1997 (P.L. 105-17) transition of students from school to work was provided. On December 3, 2004, IDEA was reauthorized as the Individuals with Disabilities Education Improvement Act IDEIA. However, educators and those working within the schools continue to know it as IDEA.

Special Skills

Today the educational setting is one of the largest employers of occupational therapists (Brandenburger-Shasby & Tricky, 2001; Harris & Alley, 2000; Royeen & Furbush, 1996). In 2003 an estimated 25% of occupational therapists worked in the educational setting (Brandenburger-Shasby, 2005). In 2006 AOTA performed a

Workforce Trend survey in which 29.6% of occupational therapists are now practicing in schools. As a part of this growth Brandenburger-Shasby (2005) and Harris & Alley (2000) identified that occupational therapy in the school setting requires a specialized set of knowledge and skills to practice in this setting. Several of the skills that a school-based occupational therapist needs according to Brandenburger-Shasby (2005) in her review of literature were transitioning young children from early intervention programs to a school-based setting, transitioning students from school to work, and collaborative teaming. Other skills highly encouraged were intervention using an inclusion model, individual and environmental accommodations, and data-based decision making.

In addition to specific skills needed to implement practice in schools, school-based therapists continued many of the same skills required for traditional occupational therapy (Adamson et al., 1998). These include interpersonal skills, understanding the client's goals, and actual life circumstances. Other helpful skills include workplace skills such as business management, knowledge of the health care system, and knowledge of the roles of a range of health professionals necessary for collaborative team interactions.

Highly Qualified

On September 8, 2006 The Accreditation Council for Occupational Therapy Education adopted accreditation standards for occupational therapy education for professional master's degree occupational therapy programs and occupational therapy assistant programs effective January 1, 2008. The preamble states that owing to the dynamic nature of present day health and human service delivery, the entry-level occupational therapist needs to possess basic skills. However, university programs are not

required to provide a basic pediatric curriculum, or a level I or level II fieldwork in a pediatric or school setting. If an entry-level therapist does not participate in a pediatric fieldwork or a fieldwork in a school-based setting in the course of their education, it may be that the incoming therapist who will practice in schools will not have knowledge of specific issues relevant to school-based practice. The difficulty is that for many years the academic program did not keep up with the changes that were rapidly occurring in the field, changes that centered on the practice of school-based therapy.

Teachers, both general education and special education, are called upon by NCLB and IDEA to be highly trained in the subject areas they teach. To meet NCLB's requirements teachers must have a bachelor's degree, state certification or licensure, and prove that they know each subject they teach (P.L. 107-110). Related service personnel are expected to be credentialed equal to the discipline's state licensing, certification, registration, or other similar requirements. IDEA and NCLB require states to show they are making improvements to hire, train, and retain highly qualified people to provide not only special education teachers, but also related services personnel (AOTA, 2005). A possible way in which universities may facilitate being prepared to practice in schools is to establish a secondary credential for those who work in an educational setting. This credential would force the university to take school-based occupational therapy seriously, and at the same time give beginning school-based therapists more confidence as they begin their chosen career.

Preparation of New Therapists

To examine the preparation of new therapists for the challenge that school-based occupational therapy demands, Adamson et al. (1998) explored the perceptions of new graduates regarding the adequacy of their undergraduate programs in equipping them for the workplace. Their survey was completed by 144 occupational therapy graduates from the Faculty of Health Sciences, the University of Sydney. The researchers considered 11 factors. Five of the factors rated high, meaning they were well-addressed in the curriculum programs. These include ethical practice, confidence in the clinical role, communication with clients, pursuit and application of knowledge, and realistic expectations of workplace role. The lowest domains were communication with health professionals and the general public, workplace management, and knowledge of the health industry. The domains of applied evaluative approach and coping in the workplace were also scored low. The therapists also indicated that greater competency in producing written records and reports, more training in effectively communicating information to clients, and training in time management would greatly help their productivity. The results of this study indicated that occupational therapy graduates perceived significant gaps between knowledge and skills gained during their undergraduate course work, and those required in the workplace.

Brandenburger-Shasby (2005) conducted a survey with the intention of determining when an occupational therapist in his or her professional education develops the competencies to be successful in entry-level school-based practice. Participants were 450 occupational therapists that were randomly selected from AOTA, School System Special

Interest Section. University professors were excluded from this study as they may not have practiced in a school setting. It is interesting to note 71 percent of the respondents had an entry level bachelor's degree while 27 percent had a master's entry level. Thirty eight percent of the participates graduated as occupational therapists during the years 1990-1999, 26% graduated during 1980-89, 29% graduated in 1970-79, and 7% before 1970. This study explored what therapists working in an educational setting perceived regarding preparedness for practice and what education was needed for school-based practitioners. Brandenburger-Shasby used a 25-item questionnaire titled the *Survey of School-Based Practice* to identify professional preparation of occupational therapists. She found that participation in Level I fieldwork in a school setting increased from the 1970s to the 1990s. Level II fieldwork in school-based setting and pediatrics also increased. Of the responding therapists 37% said they did not participate in either a school-based practice or a pediatric Level II fieldwork. Eighty percent of the respondents believed that they were not prepared upon graduation to practice in schools. This implies that preparation for school-based occupational therapy should be taken more seriously by both the university and the students.

Knowledge of School-Based Settings

In an effort to measure the knowledge of occupational therapy students concerning school settings Harris and Alley (2000) developed the Knowledge of Occupational Therapy in the School (KNOTS) scale. It was their belief that school-based therapists may depend on university educational programs to prepare them for practicing in the schools. They made four predictions to develop the validity and internal reliability of the

KNOTS. They predicted that occupational therapy students would perform better on the measure than students in the college of education at the University of New Mexico. In addition, they expected the occupational therapy students who were seniors to score significantly higher than those who were juniors on the KNOTS.

Participants in Harris and Alley's (2000) study were one hundred and forty-five student volunteers of the University of New Mexico. These students were recruited from a junior-level occupational therapy class, a senior-level occupational therapy class, special education or dual licensure classes and general education classes.

Using the KNOTS scale the results of their survey showed occupational therapy students scored significantly higher than the general education students. Senior occupational therapy students scored significantly higher than the junior occupational therapy students. There was no significant difference in occupational therapy students with prior work experiences in the schools and those without prior work experiences. There was, also, no significant difference in occupational therapy students who intended to work in the schools after graduation and those who did not.

In conclusion, Harris and Alley determined the results of this study suggests that with refinement the KNOTS could be used to assist school districts with pre-employment screening for occupational therapists who have little or no school-based practice, and as tools for assessing continuing education needs. Universities could use the KNOTS to assess student preparedness for practice and to evaluate needs for curriculum development. Also, individual occupational therapy students and practicing clinicians could assess their own knowledge in the area of school-based practice.

Capshaw (2004) used the KNOTS to determine differences in knowledge between occupational therapists that practice in the clinic setting and those who practice in schools. The purpose of the study was to identify and close the gaps in knowledge between school-based and clinical therapists. Capshaw modified the KNOTS to reflect the changes of the 1997 revision of IDEA and to direct the questions toward practicing therapists as opposed to students as in the original KNOTS. Questions that were not relevant for current practice trends and questions not relevant to the practice of school-based occupational therapy were omitted. Capshaw developed three categories for her survey: (a) the knowledge regarding occupational therapy practice in the school setting, (b) legislative issues mandating services in the schools, and (c) pediatric practice in general.

The survey consisting of the modified KNOTS scale was e-mailed to one hundred and one pediatric occupational therapists who were current members of AOTA's special interest section groups or another popular pediatric listserv. The results for her survey showed there was not a statistically significant difference in responses for school occupational therapy questions or the general pediatric questions. To determine the statistically significant difference the Mann-Whitney test was used. The school therapists had a mean of 86.92% and clinical therapists had a mean of 85.33%. Likewise there was not a statistically significant difference in the responses of school-based therapists and pediatric therapist regarding general pediatric questions. School-based therapists scored a mean of 85.3% and clinical-based therapists scored a mean of 80.8%. There was, however, a statistically significant difference in the scores between the school-based

therapists and the clinical-based therapist on knowledge of legal issues and on the total scale.

Two explanations Capshaw had for the lack of statistically significant differences between school-based practitioners and clinical-based practitioners include the increase of school-based knowledge into university occupational therapy programs and a continuing increase in the knowledge of the practice of school-based occupational therapy in general. She also discovered that 52% of the clinical-based practitioners stated they had previous school-based therapy experience.

Over the last 30 years as the practice of occupational therapy has moved into the community, the school setting has certainly been affected. The question remains whether or not the additions the academic communities have made to their curriculum have been enough.

Statement of the Problem

Academic programs need to prepare future practitioners for their field of practice. Practitioners in the fields of health information management, orthoptics, physical therapy, speech pathology and occupational therapy, indicate they do not feel prepared to practice upon graduation (Adamson et al., 1998). Particularly in the area of school-based therapy, many new occupational therapy graduates indicate they do not feel prepared to practice occupational therapy in the school setting. One method to look at how well prepared occupational therapists are to practice in the schools is the KNOTS. The motivation for this study was to examine the knowledge concerning school-based practice in

occupational therapy students who have completed their didactic courses, and in practicing occupational therapists. The difference in their understanding was analyzed.

Purpose

The purpose of this survey was to determine if occupational therapy students and practicing therapists differ in their knowledge concerning school-based practice.

Definitions and Terms

1. School-based practitioner – an individual with at least two years experience practicing in schools as an occupational therapist.
2. Level I fieldwork – The ACOTE Standards (AOTA, 1999) describe the goal of level I fieldwork as an introduction of students to the fieldwork experience and to develop a basic comfort level with and an understanding of the needs of clients. It shall include experiences designed to enrich coursework through directed observation and participation in selected aspects of the occupational therapy process. (AOTA, 1999).
3. Level II fieldwork – The ACOTE Standards (AOTA, 1998) describe level II fieldwork as the development of competent entry-level, generalist occupational therapists and occupational therapy assistants. This fieldwork experience is to provide students the opportunity to integrate academic knowledge with the application of skills in a practice setting.

CHAPTER III

METHODOLOGY

This research used a retrospective, cross-sectional design. A convenience sample was surveyed. The modified version of the KNOTS Scale was used to measure and compare the knowledge of occupational therapy students who have completed their didactic course work with the knowledge of school-based occupational therapists who have two years or more experience working in the school environment. The survey was a self-administered questionnaire distributed through *Survey Methods.com* using a web URL address.

Participants

The participants were recruited from Texas Woman's University's (TWU) e-mail list and Region 10 Educational Service Center's Occupational Therapy and Physical Therapy list serve. Region 10 Educational Service Center is a part of the Texas Education Agency. Participants from Region 10 must have been a school-based practitioner (SBP) and practiced occupational therapy in the schools for at least two years. Participants from TWU were occupational therapy students (OTS) who just completed their academics and were ready to start their level II fieldwork. Forty-eight participants volunteered to complete the survey. Seventeen were SBP and 26 were OTS. One participant responded as an OTS and as an SBP. This participant had a master's degree and 6-10 years experience working in a school setting. Taking this information into consideration this

participant was counted as a therapist. Three respondents were neither an SBP, nor an OTS. Their data was dismissed. One respondent who only partially completed the survey was omitted. After all the participants were carefully reviewed, this study had a total of 17 SBP and 26 OTS.

Sixteen SBP were female and one male. The median category age for school-based practitioners was 41-45 years with 12 who had a bachelor's degree and 5 who had a master's degree. The 26 occupational therapy students were enrolled in an entry level master's degree program. All 26 were female with the median category age of 20-25 years.

One of the demographic questions posed to the SBP was, "Where do you believe you acquired your understanding of occupational therapy in the schools?" Choices were (a) university, with 3 respondents (b) on the job training, with 17 respondents (c) continuing education, with 10 respondents and (d) mentor with 5 respondents. The practitioners were allowed more than one response.

Instrument

The KNOTS, a survey previously designed by Mary B. Harris and Sidney T. Alley at the University of New Mexico (2000) and adapted for pediatric practitioners by Stephanie Capshaw (2004), was used. The KNOTS is designed to measure knowledge concerning occupational therapy in the schools. The original developers of the KNOTS validated it with a panel of five experienced school-based occupational therapists and one university occupational therapy instructor who reviewed the entire 60 question

instrument. These reviewers assessed the content and construct validity of the KNOTS. They also examined the clarity of the questions. The KNOTS was revised based on the suggestions from the reviewers.

Cronbach's alpha was computed to assess internal reliability of the KNOTS. This included the 40 author constructed items and 20 AOTA constructed items. These questions were originally published in AOTA's self-study series, including *School-Based Practice for Related Services* and *Classroom Applications for School-Based Practice* (Harris & Alley 2000). Cronbach's alpha was .85 for all 60 items, .73 for the author constructed items, and .81 for the AOTA items. These results indicated a reasonably high degree of internal reliability. The AOTA items and the author-constructed items were positively correlated in a significant way. Positive correlations with the total KNOTS score were found for 57 of the 60 questions.

In early 2004 Capshaw revised the scale for her survey to reflect knowledge and skills of practicing pediatric occupational therapists, and current practice trends. Capshaw saw a need to modify or revise the KNOTS due to changing trends of practice and changes in the law. Capshaw's version consisted of a demographic section and 40 questions. The content areas were (a) knowledge regarding occupational therapy practice in the school setting, (b) legislative issues mandating services in schools, and (c) pediatric practice in general. The modified KNOTS was reviewed by a panel of five experienced school-based therapists and one university instructor in order to establish content and construct validity. The modified KNOTS was revised according to the panel's

recommendations and feedback. Permission to use the modified KNOTS scale for pediatric therapists was granted by Ms. Capshaw through personal communication (April 26, 2007).

The self-administered survey consisted of 40 multiple choice questions from Capshaw's study. The revisions to IDEA in 2004 did not change occupational therapy as a related service under part B (AOTA, 2007). As a result, the KNOTS questions remained consistent with current practice. This version was chosen because Capshaw's KNOTS was modified for practicing pediatric therapists and her version includes pediatric practice as well as school-based practice.

Procedure

Surveys containing the KNOTS questions were e-mailed both to Texas Woman's University occupational therapy students and to school-based occupational therapists practicing within the area of the Texas Education Service Center Region 10, located in the Dallas metropolitan area with at least two years experience. This data collection procedure was chosen for its convenience. A participant was excluded if he or she did not meet the above criteria.

A pre-notice e-mail message was sent to all potential participants of the upcoming survey. Two to three days after the initial e-mail, the survey was sent. Eight to ten days after the initial questionnaire, a third e-mail was sent to all participants reminding them to complete the survey. Three weeks later final e-mails were sent with a cover letter thanking the participants for their participation in the study. This final e-mail included a questionnaire for those who needed one final chance to participate in the study.

Data Analysis

Data were analyzed with the *Statistical Package for the Social Sciences* software program for the desktop computer. The percentages of correct answers within each of the three categories (school-based, pediatric, and legislative) and on the total scale were computed for both SBP and OTS. Descriptive statistics were calculated on test scores. Differences between the three categories (school, pediatrics, and legislative) measured by the KNOTS within groups were examined using the *Friedman Test* with post hoc analysis where indicated using *Wilcoxon Signed Ranks*. Differences between groups (SBP, OTS) were examined using the *Mann-Whitney U Test*.

CHAPTER IV

RESULTS

The Mann-Whitney U test was used to compare scores between SBP and OTS. A confidence interval of $p=.05$ was established by the researcher to indicate a statistically significant difference. Statistically significant differences between the two groups were found in all categories. Review of the results for this comparison can be found in Figure 1. As anticipated the school-based practitioner's scores were higher when compared to the scores of the occupational therapy student.

Results of the KNOTS

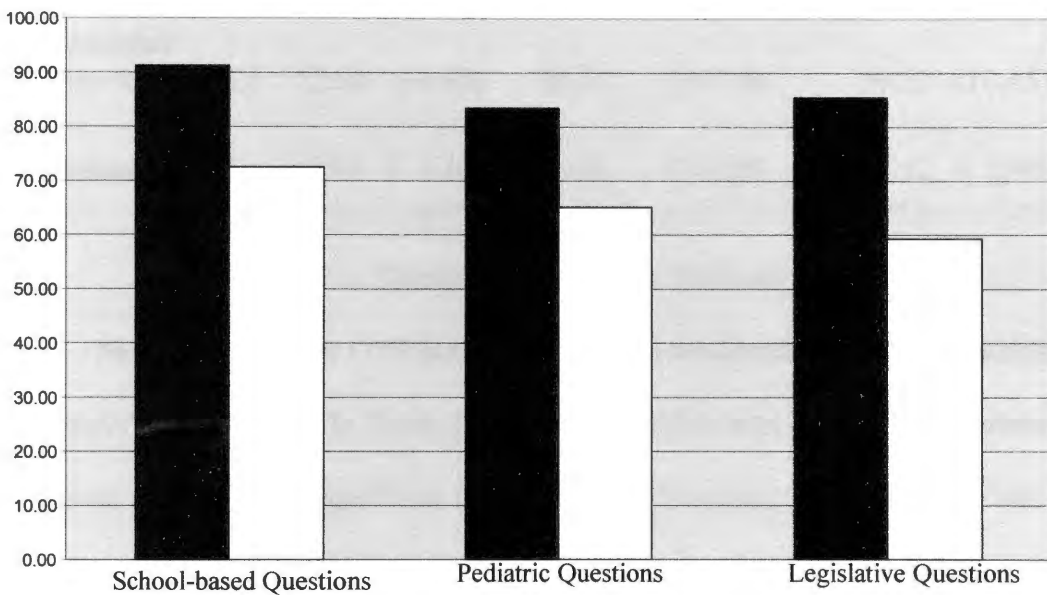


Figure 1. Mean percent of the KNOTS for therapists and students

School-Based Practitioners

Mean scores for the three content areas of school-based, pediatric and legislative questions, scored by the therapists are displayed in Table 2. *The Friedman Test* was computed to determine if there was a difference in SBP scores. It demonstrated there was no statistically significant difference ($p = .072$) between the scores in each of the three areas for the SBP.

Table 1

Percent Correct KNOTS Scores

	N	School M %	(SD)	Pediatric M %	(SD)	Legislative M %	(SD)
School-based Practitioner	17	91.17	(7.49)	83.35	(10.76)	85.35	(7.49)
Occupational Therapy Student	26	72.50	(14.65)	65.11	(19.74)	59.23	(10.45)
Difference		18.67	(\pm 7.16)	18.24	(\pm 8.98)	26.12	(\pm 2.96)

Occupational Therapy Students

Mean scores of the OTS in the three content areas (school-based, pediatric, and legislative) are displayed in Table 2. *The Friedman Test* was computed to determine if there was a statistically significant difference in OTS scores. It showed there was a statistically significant difference between scores ($p = .002$). Post hoc analysis using *Wilcoxon Signed Ranks* test revealed a significant difference ($p = .000$) between the school-based questions and the legislative questions. Compared to the OTS knowledge of

school-based practice, students scored lower on the questions pertaining to legal issues.

Results of the *Mann-Whitney Test* can be found in Table 2.

Table 2

Comparisons between School-Based Practitioners and Occupational Therapy Students KNOTS Scores

	School-based Practitioners			Mann-Whitney p	OT Student	Mann-Whitney		
	N	Mean %	(SD)		N	Mean %	(SD)	p
School-Based Questions	17	91.17	(7.49)	.000*	26	72.50	(14.65)	.892
General Pediatrics Questions		83.35	(10.76)	.002*		65.11	(19.74)	.956
Legal Questions		85.35	(7.49)	.000*		59.23	(10.45)	.184

*p < .05

Thirty-four percent of the students had a level I fieldwork in a school-based setting and 19.23% planned to work in the schools upon graduation. A *Mann-Whitney U* test was computed for the total of OTS with a level 1 fieldwork in the school setting compared to the total OTS without a level 1 fieldwork in the school setting. There were no significant differences (p=.627).

CHAPTER V

DISCUSSION

Occupational therapy in the schools has been required since 1975 when public-law 94-142 was passed. Since then the number of qualified school-based practitioners has increased. The literature suggests (Brandenburg-Shasby, 2000; Harris & Alley, 2005) that universities may not have kept up with educating students in order to prepare them for practicing occupational therapy in the school setting. This study of one university's occupational therapy students, who were ready to begin their level II fieldwork, provides information in seeking answers to the question of whether occupational therapy students and practicing therapists differ in their knowledge concerning school-based practice.

An important issue regarding occupational therapy in the schools is training. Most SBP, practicing in the schools for two years or more, learn these skills while on the job and through continuing education according to this study. This exposure to working within the school setting provides understanding of how to practice within the scope of IDEA, the legal document that guides school-based practice. This supports what Brandenburger-Shasby (2005) and Harris & Alley (2000) believed that occupational therapy practiced in the school setting requires a specialized set of knowledge and skills.

The category of mentors had a low outcome with only five participants responding they used mentors. A supposition might be that during the early years after

IDEA was adopted therapists were learning how to carry out IDEA together so there was not any one person who had any overwhelming ideas about school-based practice.

The category that the occupational therapy students were weakest in was the legal questions. This implies that the students do not fully understand IDEA and how it applies to practicing occupational therapy in the school setting. An interesting point for the OTS is a level 1 fieldwork in a school setting did not provide an advantage. Representing a level 1 fieldwork is not enough exposure to the school-based environment to gain sufficient knowledge to practice in a school setting.

Practical Applications

The SBP performed better on the KNOTS than the OTS as they have applied their knowledge and skills to the school setting for a minimum of two years. This gives the SBP experience that the OTS did not have. This exposure to working within the school setting provides understanding of how to practice within the scope of IDEA, the legal document that guides school-based practice. This seems to support what Brandenburger-Shasby (2005) and Harris & Alley (2000) believed that occupational therapy practiced in the school setting requires a specialized set of knowledge and skills.

When a school district interviews for a school-based practitioner position they prefer to have a therapist with experience in the school setting. The employer recognizes that the individual is informed about IDEA and how to practice under this law. One practical application for the KNOTS scale as indentified by the original developers would be to use it as a pre-employment screening, or as a means to determine continuing education needs. An interview including the use of the KNOTS would inform the

employer on the knowledge and skills that a potential employee possesses as well as his or her knowledge of IDEA, the legislative part of the KNOTS.

Realizing that a level 1 fieldwork is not enough experience to understand the law one practical application for universities would be to increase occupational therapy student's exposure to IDEA through academics. The scale could serve as a guide for university programs in developing their curriculum.

The researchers for the original KNOTS and the modified KNOTS remind readers that revisions will be necessary to keep up with current laws, such as revisions to IDEA and trends of practice. Universities and school districts may also choose to update the KNOTS to keep current with state and local laws and regulations.

Limitations

A limiting factor of this study is that it was conducted with one university's entry level master's degree occupational therapy students and Region 10 of the Texas Education Agency's occupational therapists. While the SBP were low in numbers, the location of the agency is within a metroplitian area offering a wide diversity of education, ethnicity and ages. Replication of this study might use more than one university with comparable sample sizes or to compare SBP to OTS who have completed their level II fieldwork.

CHAPTER VI

CONCLUSION

In an effort to measure the knowledge of occupational therapy in the school-setting comparing SBP and OTS the modified KNOTS scale for Pediatric Therapists was used. This was revised from the original version that was developed for occupational therapy students. The 40 question modified KNOTS scale was grouped into three categories (a) school-based, (b) general pediatric, and (c) legislative. The revised KNOTS scale for Pediatric Therapists was administered to 43 school-based practitioners and occupational therapy students. Scores for each group in each of the categories and the total scale were analyzed and compared. A statistically significant difference was found between the SBP and the OTS in all categories. There was no significant difference for those OTS who completed a level 1 fieldwork in a school-setting compared to those who did not complete an level 1 fieldwork in a school-setting. The OTS performed better on the school-based questions than on the legal questions.

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APPENDICES

APPENDIX

KNOTS Scale for Pediatric Occupational Therapists

Knowledge of Occupational Therapy in the Schools scale for Pediatric Occupational Therapists

1. Which one of the following statements is NOT true with respect to the practice of school-based occupational therapy?

- a. A school-based practice performance area includes play and leisure.
- b. Data from standardized tests are the best source of information for a school-based assessment.
- c. Based on surveys of occupational therapists, standardized tests appear to be the most common assessment tools used by school-based occupational therapists.
- d. Classroom observation and teacher interviews are vital sources of school-based assessment information.

2. A school-based therapist using an educational approach to service delivery would

- a. direct intervention at the underlying physical cause of dysfunction.
- b. focus on the next skill in the developmental sequence.
- c. focus on “fixing” a deficit.
- d. focus on promoting the skills necessary to be successful in the student’s particular environment.

3. It is most appropriate for a therapist to discuss discharge from school-based occupational therapy intervention at an individualized educational program (IEP) meeting when

- a. the student is performing well in the classroom.
- b. standardized test scores show reasonable improvement.
- c. criterion referenced tests demonstrate adequate skill development.
- d. the parent reports the student is doing well at home.

4. An occupational therapist using an educational model perspective

- a. bases evaluation of progress on a student’s underlying neuromuscular skill.
- b. focuses treatment on specific skills needed for adaptation and performance.
- c. focuses treatment on the child’s lack of physical function.
- d. establishes goals and objectives with respect to specific motor function such as range of motion or muscle power.

5. A child in high school with significant dysgraphia would probably benefit MOST from

- a. direct intervention for handwriting practice.
- b. multi-sensory teaching practices.
- c. by-pass methodologies such as computer access.
- d. visual perceptual intervention strategies.

6. A school-based occupational therapist’s assessment need not necessarily include
a. standardized test data.
b. teacher concerns.
c. pertinent history and medical precautions.
d. observational data.

7. Using a sensory integrative frame of reference for interpretation, a student who frequently hooks his legs around a classroom chair may be having difficulty with which system(s)?
a. Vestibular
b. Auditory
c. Proprioception
d. both a. and c.

8. Using a sensory integrative frame of reference, a student who mouths objects frequently and chews on pencils is most likely experiencing difficulty with an
a. underreactive vestibular system.
b. underreactive tactile or proprioceptive system.
c. overreactive vestibular system.
d. overreactive tactile or proprioceptive system.

9. Which of the following has been shown to be a significant predictor of handwriting skill at a variety of ages?
a. Test of Visual Perceptual Skills
b. Bruininks-Oseretsky Fine Motor Composite
c. Peabody Developmental Motor Scale
d. Developmental Test of Visual-Motor Integration

10. Which of the following is NOT true with respect to handwriting?
a. After writing is learned, a student may rely less on visual input and more on kinesthetic input.
b. In-hand manipulation and legible handwriting may share common factors.
c. Environmental adaptations should be considered for students with severe dysgraphia.
d. The outcome literature suggests that intervention focusing on visual-perceptual activities may be the most successful strategy for improving handwriting.

11. Which of the following statements concerning the nature of consultation is TRUE?
a. Consulting therapists train teachers to do occupational therapy.
b. Consultation can always substitute for direct service.
c. Direct service should always be accompanied by consultation.
d. Caseloads can increase dramatically with a consultation model.

12. When a therapist focuses on treating underlying causes of deficits, the therapist is using a(n)

- a. medical approach to service delivery.
- b. functional approach to service delivery.
- c. educational approach to service delivery.
- d. ecological approach to service delivery.

13. In order for a therapist to change the service time provided to a student receiving occupational therapy, the therapist needs to

- a. schedule an IEP meeting to discuss the changes with parents and other team members.
- b. call the parents and notify them of the change.
- c. complete standardized testing to show objective progress.
- d. get permission from the school principal.

14. A school district must contract an initial occupational therapy assessment with a private agency due to a personnel shortage. The student has a diagnosis of cerebral palsy, uses a wheelchair for mobility, and is enrolled in a self-contained classroom setting. The therapist, who has talked with the student's teachers, completes the assessment at the private clinic. It is likely that this therapist neglects important assessment information including

- a. observation of the student in the cafeteria and on the playground.
- b. the special education teachers' interviews.
- c. standardized testing.
- d. all of the above.

15. A therapist did not receive an invitation to the individualized educational program (IEP) meeting and therefore did not attend. At the meeting the team decided to have the therapist write goals and objectives as soon as possible. The teacher directed the therapist to insert them into the appropriate files once completed. However, the therapist had intended to discuss a possible change in service schedule time at the annual IEP meeting. Given this situation, the therapist should

- a. write up goals/objectives and insert into files.
- b. request an IEP meeting to discuss intervention time and goals/objectives with the team.
- c. call the parents and notify them of the service schedule time change.
- d. both a. and c.

16. A parent of a student who is not in special education comes to you with a physician's prescription for occupational therapy at school (the student fractured his non-dominant humerus). As a school therapist you should

- a. examine the student and write a home and classroom program.
- b. try to get the student qualified for special education as other health impaired.

- c. clarify the role of school therapists with the doctor and parent.
- d. work directly with the student to prevent loss of function.

17. Federal regulations require IEP paperwork to include all of the following EXCEPT

- a. student’s present levels of performance.
- b. separate student IEP goals developed by each professional.
- c. projected dates of services.
- d. annual goals and short term objectives.

18. An elementary school student who receives occupational therapy services was bussed to another school for therapy last year. At this year’s IEP meeting the team agreed that the bussing practice may not be meeting the student’s needs in the area of

- a. least restrictive environment.
- b. informed consent.
- c. parental due process.
- d. school staff due process.

19. The Individuals With Disabilities Education Act (IDEA) sets federal guidelines concerning how children receive occupational therapy in a school setting. Under the guidelines of IDEA, occupational therapy is generally mandated to

- a. provide a related service to help a student develop his or her potential to the maximum extent possible.
- b. provide a related service directed toward helping a student benefit from special education.
- c. provide “hands-on” service to all students.
- d. both a. and b.

20. Individualized educational program goals should be developed based on information gathered PRIMARILY from

- a. a wide domain of standardized test items.
- b. clinical observations.
- c. parental and student interview.
- d. the IEP meeting team discussion.

21. A special education student may begin to receive regularly scheduled occupational therapy intervention

- a. when the student’s standardized test scores show significant areas of weakness that could impact educational skills.
- b. when the IEP committee requests the therapy assessment.

- c. on the day that a report is completed indicating an educational relevance.
- d. once an IEP meeting convenes to discuss and add occupational therapy to the service schedule.

22. The two most recently recognized disability groups of the Individuals with Disabilities Education Act are

- a. Asthma and Turner's syndrome.
- b. Autism and traumatic brain injury.
- c. Autism and childhood depression.
- d. Schizophrenia and Tourette's syndrome.

23. When writing a measurable objective on an IEP, the following components should be present:

- a. behavior, criterion for mastery, and student age/grade.
- b. behavior, present age level performance, criterion for mastery, and the method of evaluation.
- c. conditions or environment under which the behavior is observed, criterion for mastery, and the method of evaluation.
- d. behavior, conditions or environment under which the behavior is observed, criterion for mastery, and the method of evaluation.

24. Benbow suggests that an atypical pencil grip

- a. is in and of itself a predictor of poor handwriting.
- b. is difficult to change after the 2nd grade, but may be remediated even through adulthood.
- c. shows a strong and consistent relationship in the literature to speed and legibility of handwriting.
- d. is the primary cause of dysfunctional handwriting.

25. Clinical observations reveal that a student exhibits difficulty focusing on a blackboard 15 feet away and then refocusing on his paper in order to copy. The therapist might conclude that the primary visual interference is occurring in the area of

- a. accommodation.
- b. postrotary nystagmus.
- c. binocular vision.
- d. ocular tracking.

26. A student is observed to press too hard with his pencil, to use a tight grip, and to frequently break pencils. He most likely is receiving inadequate sensory information from the

- a. vestibular system.
- b. proprioceptive/kinesthetic system.

- c. visual system.
- d. auditory system.

27. For a school team committee to consider a student eligible for special education as orthopedically impaired, the student must satisfy the following criteria:

- a. Significant congenital or acquired orthopedic impairment.
- b. Educational performance adversely affected.
- c. Has a need for specially designed instruction.
- d. All of the above.

28. The student's IEP

- a. serves as a means to document a student's progress.
- b. is a compliance document.
- c. serves as a communication vehicle between parents and school personnel.
- d. all of the above.

29. What is the primary goal of occupational therapists working in the public schools?

- a. Treat motor deficits.
- b. Treat sensorimotor deficits.
- c. Promote function in an educational environment.
- d. Promote age appropriate functioning.

30. What is a functional outcome in an educational setting?

- a. self-care.
- b. mobility.
- c. handwriting.
- d. all of the above.

31. Inclusion is

- a. a federal mandate.
- b. defined as including related services in the special education IEP.
- c. serving special needs children in the regular classroom with appropriate supports and services.
- d. synonymous with least restrictive environment (LRE).

32. The "hold and do" function refers to the

- a. relationship between dominant/helper hands.
- b. power versus precision grip.
- c. radial/ulnar deviation.
- d. hook versus dynamic tripod grips.

33. Problems of binocularity, accommodation, and eye movements can affect

- a. speed of reading.
- b. decoding of words.
- c. reading comprehension.
- d. all of the above.

34. When intervention recommended by the occupational therapist is implemented by others, what should be documented?

- a. Written instructions of the activity to be implemented.
- b. Observations of the individual implementing the activity.
- c. Periodic review.
- d. All of the above.

35. Children with serious emotional disturbances

- a. comprise the fastest growing exceptionality in special education.
- b. are rarely seen by an occupational therapist.
- c. rarely have communication disorders.
- d. are not covered by many state special education laws.

36. Meaningful objectives should be obtained from

- a. standardized tests.
- b. formal evaluations.
- c. working with the team.
- d. asking the parents.

37. IEPs must be written as needed or

- a. biannually.
- b. quarterly.
- c. annually.
- d. at the beginning of the school year.

38. Studies of school personnel have revealed that the preferred method of consultation in the school setting is

- a. expert.
- b. medical.
- c. collaborative.
- d. mental health.
- e. all of the above.

39. Federal regulations require all of the following, except

- a. separate IEP sections for occupational therapy, physical therapy, and speech-language pathology goals and objectives.
- b. parental permission for evaluation.

- c. an individualized educational program for a student in special education.
- d. positive editorial intent in the statement of current level of educational functioning.

40. Specification of direct service, consultation, or monitoring on the IEP is required by

- a. federal law.
- b. state law.
- c. custom.
- d. none of the above.

Demographics:

1. Gender: _____ male _____ female
2. Age: _____ 20-25 _____ 26-29
 _____ 30-35 _____ 36-40
 _____ 41-45 _____ 46-50
 _____ 51-55 _____ 56-60
 _____ 61-65 _____ Over 65
3. Highest level of occupational therapy education: _____ Undergraduate
 _____ Master's _____ Clinical Doctorate _____ EdD _____ ScD _____ PhD
4. What year are you in your occupational therapy career?
 _____ Just completed academics and ready to start your level II fieldwork.
 _____ Practicing therapist (more than 2 years practicing experience)

5. Occupational Therapy Students:

Did you complete level 1 fieldwork in a school setting?

_____ yes _____ no

Do you intend to work in the schools?

_____ yes _____ no

6. School Based Occupational Therapists:

Years of experience working in a school setting:

_____ 2-5	_____ 6-10
_____ 11-15	_____ 16-20
_____ Over 20	

Where do you believe you acquired your understanding of occupational therapy in the schools?

_____ university teachings	_____ on the job training
_____ continuing education	_____ mentor