

PREDICTING COMPETENCY IN GRADUATE CLINICAL TRAINING

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ABSTRACT

Graduate programs in communication sciences and disorders (CSD) are charged with the responsibility of providing quality clinical training experiences that promote each student's growth and development toward achieving the knowledge, skills and professionalism critical to achieving clinical competence. Further, graduate programs must engage in evaluative and predictive monitoring of each student's growth toward achieving the prescribed competencies. The purpose of this study was to determine whether specific clinical skillsets used to evaluate graduate students can predict success toward achieving clinical competency. This pilot quantitative correlational study examined pre-existing final (end of the semester) data of 103 first-year graduate clinicians. The *Student Clinical Evaluation* was the instrument of choice, utilizing data spanning 10 years. This study examined the correlational relationships between sections and/or questions on the *Student Clinical Evaluation* instrument. Professionalism (e.g., self-evaluative, reflective, critical thinking, etc.) was found to be strongly predictive of clinical competence. Yet, it was evident that many students do not enter graduate training equipped with these skills. These findings suggest that *intentional* training of self-evaluative, reflective, and critical thinking skills is critical to growing highly competent professionals who practice effective habits of the mind.

KEY WORDS: clinical competency, clinical supervision, professionalism, critical thinking, habits of the mind

INTRODUCTION

A successful graduate student clinical rotation is objectively measured by assessing knowledge, skills, and professionalism across the competency areas of diagnostics, therapy planning, therapy, documentation, administrative skills, professionalism, and other related areas. The development of competent and ethical practice begins with the academic and clinical training that establishes the knowledge, skills and professionalism identified as clinical competency (e.g., evidence-based practice) implemented across diverse clinical settings with diverse populations across the lifespan (ASHA, 2013).

Research has shown that emphasis in clinical teaching has been acknowledged as important in professional preparation (McCrea, 2003). Strohschein, Hagler & May (2002) stated that contextually-based clinical education is the best way in which to teach the skills and professionalism critical to becoming a competent speech-language pathologist. If the intention of clinical supervision is to assist graduate students to become self-reliant clinicians capable of independent problem-solving, self-supervision, and reflective analytical practice (Saras, 2004, Ho & Whitehall, 2009), then how does one support the achievement of this goal, the establishing of these characteristics as “habits of the mind” (Bandura, 2001)? Hart and associates (2007) presented the concept that supervisors need predictive tools to identify student clinicians who may need extra support to reach their clinical education goals (Hart, Turner, Duesing, Galley, et al., 2007). How does one decide where emphasis in clinical teaching should lie when targeting intended success for graduate clinicians in communication disorders practicum experiences?

The ASHA Committee on Supervision developed a position paper that was adopted by its Legislative Council in November 1984. This paper indicated that the essence of effective clinical supervision is centered around teaching “self-analysis, self-evaluation, and problem-solving skills on the part of the individual being supervised” (ASHA, 1985, p. 3).

Clinical competence, as discussed by Epstein and Hundert, is considered to be “the habitual and judicious use of communication, knowledge, technical skills, clinical reasoning, emotions, values, and reflection in daily practice for the benefit of the individual and community being served” (Bogo, 2014, p. 12). Competence depends on habits of mind, including attentiveness, critical curiosity, self-awareness, and presence. Professional competence is developmental, impermanent, and context-dependent (Epstein and Hundert, 2002).

In its September 2014 certification standards, ASHA mandated specific guidelines for clinical training (ASHA, 2014). These are rigorous standards concerning the graduate students’ abilities to demonstrate communication skills sufficient to achieve effective clinical and professional interaction with clients/patients and relevant others (ASHA, 2014). Previous studies also acknowledge the importance of facilitating students’ integration of theoretical and clinical knowledge through reflective, experiential and problem-based clinical reasoning (Goldberg, Richberg-McCormick, & Wood, 2006, Ho & Whitehall, 2009).

A systematic literature review of articles published since 2005 found few articles that reviewed predictors of graduate school success in general; moreover, these articles did not discuss predictors of clinical training or practicum success. In related fields such as occupational therapy, medicine and psychology, predictors such as entrance exams, race, gender, and socioeconomic factors have been examined. Therefore, it was noted that research, which specifically focused on predicting clinical practicum success in communication disorders, is needed to support data-driven decisions that facilitate the development of skills and professionalism for successful practicum experiences (Ho & Whitehall, 2009). Research questions posed in this research article include the following:

1. Do elements of a clinical evaluation predict graduate student success in a first-year in-house clinical practicum experience? What factors influence a

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clinical supervisor's perceptions of effective clinical practice among graduate communication disorders students?

2. What skill sets serve as predictors of clinical competency?

Professionalism involves adding a humanistic quality (compassion, integrity, respect) to the use of knowledge/skills. Professionalism involves personal values or behaviors and characteristics which are sometimes difficult to explain and quantify, but often easy to recognize when they are deficient or negative in nature. These qualities are included in teaching, medicine and business, and they involve duty, commitment to excellence, accountability, integrity, appearance, demeanor, knowledge, judgment, honor, respect, compassion, communication, altruism, and responsibility. The American Speech-Language-Hearing Association (ASHA) refers to "workplace" success skills that students need to possess in the 21st century as 1. planning and priority setting, 2. organizing and time management, 3. managing diversity, 4. team building, 5. interpersonal savvy and peer relationships, 6. organizational agility, 7. conflict management, 8. problem solving, perspective and creativity, and 9. dealing with paradox and learning on the fly (ASHA, 2000). The ASHA Code of Ethics directs individuals to honor their responsibility to achieve and maintain the highest level of professional competence and performance (ASHA, 2016).

Becoming a speech-language pathologist is a complex process that is largely dictated by ASHA (Haynes, Moran, Pindzola, 2012). In order to become a speech-language pathologist, one needs the knowledge, skills and professionalism set forth by The Council for Clinical Certification in Audiology and Speech-Language Pathology (CFCC). Graduate programs are charged with the responsibility of providing a quality training experience that promotes each student's growth and development toward achieving the knowledge, skills and professionalism critical to perform competent clinical practice. Further, graduate

programs must monitor each student's progress/growth in a way that is evaluative and predictive of the student's achievement of the expected outcome, defined as competency.

Students' knowledge and skills are assessed by judging whether they show a lack of demonstration (0), academic knowledge with emerging clinical skills (1), knowledge and skills at an adequate level of clinical competency (2), and both knowledge and skills at an independent level (3), as indicated on the Student Clinical Evaluation utilized in this study. The scores from each of the seven sections are averaged to achieve an overall measure of clinical skills.

The Charge of Accredited Programs in Speech-Language Pathology

Competency must be demonstrated in the application of current knowledge pertaining to methods of prevention, assessment and intervention of communication and swallowing disorders and differences. Application of knowledge should be evident in the identification of etiologies; characteristics; related acoustical, psychological, developmental, linguistic and cultural correlates that have implications for speech production (articulation, voice, resonance, fluency); language understanding and use (phonology, syntax, semantics, pragmatics, etc.); and aspects of literacy (cognition, hearing, and alternative/augmentative means of communication) (ASHA, 2013).

The accreditation of graduate training programs assures the public that professional services rendered are of the highest quality. It is the intent of ASHA's Council on Academic Accreditation (CAA) to ensure that high professional quality standards are consistently met by programs in their preparation of students (CAA, 2015). Accredited programs are those programs identified as meeting, if not exceeding, standards reflecting quality teaching, learning, research, and professional practice (CAA, 2015). While standards are clearly defined, institutions are given the flexibility to exercise institutional freedom and constructive innovation in the achievement of institutional goals and

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accreditation standards (CAA, 2015). Thus, program activities and their implementation are neither explicitly prescribed nor narrowly defined. CAA-accredited programs must ensure that their graduating students have been provided the academic and clinical education necessary to prepare them for entry as competent professionals meeting the requirements for state licensure and ASHA certification.

Multiple evidences are critical to every accredited program's self-evaluation in determining program effectiveness and success rate. A program's measurement of employment rate, graduation rate, and Praxis pass rate provide critical summative measures; the Praxis examination in speech-language pathology is a national exam required for certification. Documentation of students' academic and clinical performance as formative assessment is essential in assisting students, as well as the faculty's monitoring of student progress (CAA, 2015). Qualitative and quantitative measures provide information for decision-making in establishing continuous student and program improvements.

Standards for Certification in Speech-Language Pathology

Professional/clinical competency requires graduate training that has provided the breadth and depth of experiences needed to achieve required skills and competencies identified in ASHA's standards for clinical competence in speech-language pathology. Graduate training programs are charged with the responsibility of providing graduate students a rigorous academic curriculum (e.g., coursework, labs, case studies, simulations, projects, and exams) along with clinical training experiences across a variety of clinical settings with diverse populations in order to produce highly qualified speech-language pathologists (SLPs) as defined by the above ASHA standards. These training experiences must be under the supervision of certified SLPs.

Speech-language pathology faculty are qualified and required to evaluate student clinicians' professional behavior and skill development. ASHA's 1985 position paper on clinical

supervision identified 13 tasks considered basic to effective clinical teaching in communication disorders (ASHA, 1985; Shapiro et al., 2002). For example, these tasks include assisting the supervisee in developing clinical goals and objectives; developing and refining assessment skills; developing and refining clinical management skills; observing and analyzing assessment and treatment sessions; developing and maintaining clinical and supervisory records; maintaining an effective working relationship with the supervisor; evaluating clinical performance; developing skills of verbal reporting, writing, and editing; modeling and facilitating professional conduct, and demonstrating research skills in the clinical or supervisory process (p. 3).

Effective clinical supervision involves teaching the development of self-analysis, self-evaluation, and problem-solving skills to the student clinician. The achievement of this goal defines the success of one's clinical teaching. It is evident that self-analysis, self-evaluation and problem-solving skills, often equated with professionalism, play a critical role in the effective training of a clinically competent graduate clinician (ASHA, 1985). In describing these professional characteristics, Frank Pajares (2002) cites the theories of Albert Bandura, who proposed that personal behavior "without introspection cannot aspire to explain the complexities of human functioning. It is by looking into their own conscious mind that people make sense of their own psychological processes" (1986, p. 25).

Drazinski & McKerlie (2009) examined the continuum of professional behaviors in developing an evaluative tool which measures graduate clinicians' professionalism, which is defined as that qualitative entity which involves the use of knowledge and skills. Drazinski and McKerlie (2009) proposed that the explicit training and evaluation of professionalism in graduate clinicians is a needed response to students' rights, as well as an ethical and professional responsibility. Knowledge and skills equated with professionalism include interpersonal communication skills (being tactful, cooperative and collaborative), clinical reasoning and problem-solving (evaluating

problems and solutions, identifying problems and consulting with others), and response to feedback (positive affect, active listening, implementing solutions). ASHA refers to Knowledge and Skills Acquisition (KASA) as the above abilities across all targeted areas (hearing, articulation, fluency, swallowing, voice, expressive and receptive language, cognitive, augmentative/alternative modalities and social modalities) (ASHA, 2013). The outcome of their study indicated the need for an evaluative clinical tool for periodic (midterm, final) evaluation and self-evaluation, as well as a tool to be embedded in didactic and clinical courses. These findings prove significant in highlighting the need for establishing clinical evaluative tools and identifying skillsets that are effective measures and serve as predictors of clinical competency.

Resnick, Whiteside and Kong (2014) noted the need to develop an objective measurement 1) to make data-driven clinical decisions and 2) to define student outcome measures corresponding to practicum experiences across the continuum (e.g., entry level to externship practicum experiences). The end result of their study was the development of the CSAR – Clinical Skills Acquisition Rubric – a formative and summative assessment tool designed to assess graduate clinician competency (e.g., knowledge and skills) across 35 key objectives as defined by ASHA Standards (2014). The CSAR measures clinical competency across seven levels of clinical learning. These skills evolved from a level of dependence to a level of independence. The points of assessment were midterm and final. The correlation of treatment and diagnosis between the Knowledge and Skills Acquisition (KASA) items and the CSAR was found to be low, as a reflection of content. The low correlations were attributed, by the authors, to the greater objectivity as well as the greater specificity of the CSAR when compared to the KASA.

Theoretical Foundations

Albert Bandura, a world-renowned researcher in the field of psychology, studied theoretical problems regarding self-regulation. In the mid-1980s, Bandura, through his social cognitive

theory of human functioning, stated “cognitive, vicarious, self-regulatory and self-reflective processes” are paramount to the modification of human behaviors (Bandura, 2001, p. 2). Therefore, people can be self-organizing, proactive, self-reflecting and self-regulating versus the reactive beings who respond to peripheral environmental changes (Bandura, 2001). “Human action, being socially situated, is the product of a dynamic interplay of personal and situational influences” (Bandura, 1999, p. 3). This theory reflects the graduate clinicians who exercise cognitive self-reflective processes that serve to measure and determine the reasons for success or lack of success in clinical planning and implementation. This theory explains why some graduate clinicians have the ability to contemplate options for future planning, both independently and cooperatively, with supervisors recognizing the opportunity to increase clinical skills through mentoring and training. If this, in fact, is an acceptable theory, graduate clinicians should be proactive in their use of critical thinking skills and reflective practices. Use of effective “habits of mind, including attentiveness, critical curiosity, self-awareness, and presence” (Epstein & Hundert, 2002, p. 227), leads to good decisions in ethical and professional performance which would be reflected in areas of therapy planning, therapy, and documentation as indicated by the data. Increases in the ability to be attentive, curious, self-aware, and present with the people we serve lead to effective planning, assessment, and treatment.

Examination of the Relevant Current Literature

A systematic review of literature revealed that since 2005, there are few articles that address predictors of graduate students’ clinical success in communication disorders. Victor and associates presented a survey of supervisory research at the 2008 ASHA Convention. In their examination of clinical research spanning 1977-1994, they identified only one article, published by Anderson in 1978, which addressed the supervisory evaluation process. Studies acknowledge the importance of facilitating students’ integration of theoretical and clinical knowledge through reflective, experiential and

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problem-based clinical reasoning (Goldberg, Richberg-McCormick, & Wood, 2006; Ho & Whitehall, 2009). There is little published in the international literature about allied health professionals experiencing the transition from student to practitioner, according to the research of Smith and Pilling, who, in 2007, reviewed two articles that examined the transitional phase from graduate student to professional clinician (Lee & Mackenzie, 2003; Tryssenaar & Perkins, 2001). Effective managerial competencies of novice clinicians were reviewed by Adamson and associates (2001).

Literature in the field of nursing offers more in the area of transition from student to novice practitioner, but the transference of this phenomenon to other allied health fields has not been proven to be accurate (Goh & Watt, 2003). In 1984, Benner outlined the five stages of clinical competence acquisition in nursing – starting with the novice nurse and moving to the advanced beginner, the competent nurse, the proficient nurse, and the expert nurse. The Stage 1 Novice has no experience and is taught rules to support performance opportunities. The rules are not individual to any client and are without context. Therefore, there is little flexibility. The Stage 2 Advanced Beginner has “marginally acceptable performance.” Principles begin to be formulated in the context of individual situations and mentoring. Leith calls this the creation of a “database” of information, which is used to support decisions in clinical situations (Leith, 2002). The Stage 3 Competent Nurse has been working in the contexts of treating the same disorders for two or three years; this nurse is conscientious, deliberate in planning, efficient and organized, with the wherewithal to be flexible in the contextual differences of the job. However, this nurse may not be able to “recognize a situation in terms of an overall picture or in terms of which aspects are most important.” The Stage 4 Proficient Nurse can see the situation as whole, with performance directed by the larger picture with an idea of how one reaches these goals. This would be the difference between knowing the long-term and then determining the short-terms. This holistic approach guides the ability to make good decisions; maxims reflect the fine and subtle differences of a clinical case. The Stage 5 Expert

has enough knowledge and experience, with an instinctive command of the clinical situation. This nurse is able to understand the situation so well as to not waste time on incidental activities that result in little progress. This nurse has acute analytical skills, recognizing when procedures do not work and an accurate alternative plan must be found.

Brenner’s five stages may be applied to the desired growth of speech-language graduate clinicians and could serve as a model for future studies, as researchers seek to measure growth and predict skillsets needed to make the transition to acquiring higher competencies. Further, “preparedness for the workplace requires an understanding of external political influences and environment, time management, critical thinking and self-reflection, as well as effective interdisciplinary team skills. These are critical competencies required to enable students to become effective professionals” (Smith and Piling, 2007, p. 266). As one can see, very little has been written in regards to predicting graduate student success within the training program in communication disorders.

This study was designed to investigate factors related to competent clinical practice among communication disorder graduate students at a historically black college and university (HBCU) in the southeast United States. The study also sought to investigate associations between graduate students’ knowledge, skills, and professionalism across the competency areas of diagnostics, therapy planning, therapy, documentation, administrative skills, professionalism, and other related areas of competent clinical practice.

METHOD

Research Design

This study used a cross-sectional and correlational research design. Surveys were used to investigate what factors influence clinical supervisor perceptions of effective clinical practice among communication disorders students.

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Participants

Final clinical evaluations were administered by the supervisor for 4-6 graduate clinicians per semester. Of the 103 participants, 95.1% were female and 4.9% were males. The majority of the participants, 90.3%, were between the ages of 22-30. The majority of the students, 87.9%,

were residents of North Carolina. Caucasian American students represented 54.4% of the sample; African-American represented 41.7% students, and over 3% were of Asian, Latino or other ancestry. (See Table 1.) Supervision at this site was completed by one university-affiliated, state-licensed and certified clinical supervisor during the fall and spring semesters.

Table 1. Demographics for Communication Disorders Students (N = 103).

Variable	N	%
Age		
22-30	93	90.3%
31-above	6	5.8%
No response	4	3.9%
Gender		
Female	97	95.1%
Male	6	4.9%
Race		
African-American/Black	43	41.7%
Asian	1	.9%
Caucasian	56	54.4%
Latino	1	.9%
International/Other	2	1.9%
Residency		
NC resident		87.9%
Other		12.1%

Procedures

This study entailed the collection of pre-existing data from the end-of-the-semester, final graduate Student Clinical Evaluations completed at an in-house school practicum site placement, a K-8 charter school. A total of 103 graduate student clinical evaluations, dated spring and fall from years 2005 to spring 2014, were collected by the first author investigator. These clinical evaluations documented the assessment of clinical skills gained during the semester of service. Hard copies of the final evaluations were collected from cumulative folders for years 2005-2009. From 2009 forward, the evaluations were collected from the electronic portfolios of each graduate student who matriculated through

the target school. Each evaluation instrument took approximately 35 minutes to complete.

Measures

The items for the current measure were adopted from the standards for competent clinical practice established by ASHA (1984). The ASHA Committee on Supervision suggested that there are seven key areas of demonstrated competency in communication disorder clinical practice. The seven key areas included the students' knowledge and skill development in areas such as the ability to communicate effectively with client/patient, family, and caregivers, (considering cultural and linguistic background) and the ability to interact

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appropriately with supervisor and peers. Graduate clinicians were expected to demonstrate the ability to interpret, integrate and synthesize all information to develop diagnoses; make appropriate recommendations given test results; develop appropriate intervention plans with measurable and achievable goals; and demonstrate the ability to formulate a succession of graduated intermediate steps leading to achievement of a goal. By employing the standards established by The ASHA Committee on Supervision in 1984, a 46-item questionnaire was created. (See Appendix A.) Seven questions assessed students' professionalism; nine questions dealt with diagnostic work; six questions assessed therapy planning; eight questions involved therapy; six questions reviewed documentation; four questions looked at administrative skills; and six questions focused on other related skills. Scores were as follows: 0 = The student did not demonstrate any academic knowledge or clinical skills in this area; 1 = The student demonstrated academic knowledge in this area, with emerging clinical skills in this area; 2 = The student demonstrated knowledge and skills in this area at an adequate level of clinical competency; 3 = The student demonstrated knowledge and skills in this area and an independent level of clinical competency. To obtain a total score for each subscale, the items were summed and averaged.

The scores were aggregated and statistically analyzed using SPSS in an effort to identify relationships between sections and/or questions found on the Student Clinical Evaluation (Howell, 2004). The correlation coefficient was used to determine the strength and direction of the relationships when looking at success in the overall clinical experience with a range of -1 (strong negative relationship), to +1 (strong positive relationship) with 0 representing no relationship. High coefficients represent strong relationships (Irwin, Pannbacker, & Lass, 2008). Measures of regression were used to determine predictability of one section (or question) of the evaluation from the information about another section or question (Howell, 2004).

The alpha for the professionalism subscale was .81. The alphas for the diagnostic work and therapy planning subscales were .88 and .86, respectively. The alphas for the therapy and documentation subscale were .89 and .79, respectively. The alpha for administrative skills was .78.

RESULTS

To assess skill sets associated with clinical competency in communication disorders among graduate school students, Pearson correlations were run to investigate relationships between a clinical supervisor's perception of students and their diagnostic work (DW), related professional skills (RPS), therapy planning (TPT), therapy (T), ability to document (DOC), administrative skills (AS), and other related areas (ORA). Preliminary analysis (see Table 2) revealed that the students' understanding of diagnostic work was significantly related to professional skills ($r=.26$; $p\leq.05$) and therapy planning ($r=.52$; $p\leq.001$). One's ability to understand diagnostic work was also related to the ability to effectuate therapy ($r=.41$; $p\leq.001$) and one's ability to professionally document ($r=.49$; $p\leq.001$). Diagnostic work was also significantly related to students' administrative skills ($r=.39$; $p\leq.001$). A number of significant correlations related to professional skills were found (such as the ability to communicate with client and family, adherence to ASHA's ethical standards, and the ability to carry oneself in a professional manner), which were significantly related to therapy planning ($r=.74$; $p\leq.001$) and the ability to deliver therapy ($r=.76$; $p\leq.001$). Related professional skills were also significantly related to adequate documentation in the therapeutic setting ($r=.60$; $p\leq.001$) and administrative skills ($r=.46$; $p\leq.001$). Related professional skills among students were also significantly related to the clinical supervisor's perceptions of other related competencies necessary to be successful as a communication disorders clinician (i.e., a practicum and class attendance and response to feedback) ($r=.76$; $p\leq.001$).

Table 2. Correlation for ASHA Standards Among Communication Disorders Graduate Students.

Variable	1	2	3	4	5	6	7
DW							
RPS	.26*						
TP	.51**	.74**					
T	.41**	.76**	.88**				
DOC	.49**	.60**	.63**	.56**			
AS	.39**	.46**	.60**	.55**	.55**		
ORA	.26	.76**	.79**	.87**	.52**	.61**	
Mean	22.25	18.83	16.07	21.78	15.47	8.95	15.76
SD	4.04	2.45	2.31	3.19	2.24	2.21	2.67

* $p < .05$, ** $p < .01$

Predicting Clinical Competency among Graduate Students

To identify factors that best predict clinical competence among graduate students (i.e., practicum-related professional skills, the ability to respond appropriately to constructive criticism), a hierarchical regression was run. The following variables were entered as predictors: related professional skills (i.e., communication with family and client, adherence to the code of ethics, and professionalism), diagnostic work (i.e., administrative and accurate scoring of tests,

utilization of test results to make accurate diagnostics, and recommendation), therapy planning, therapy, documentation, and administrative skills. The overall model (See Table 3,) including all variables, explained 27% of the variance in professional skills: $F(6, 97) = 6.93$; $p \leq .001$. Further review of the regression model summary indicates that the strongest predictor of clinical competency (ORA5) among communication disorders students was the related professional skills that students had obtained ($b = .35$; $p \leq .05$).

Table 3. Predicting Clinical Competence.

	<i>b</i> (<i>se</i>)
Constant	.044
Diagnostic Work	-.10(.02)
Related Professional Skills	.35(.03)*
Therapy Planning	.33(.05)
Therapy	-.09(.03)
Documentation	.13(.03)
Administrative Skills	-.14(.03)
<i>F</i> (6,92)	6.94**
<i>R</i> ²	.27

p*<.05; *p*<.01

The scores were aggregated and statistically analyzed using SPSS in an effort to demonstrate correlations (relationships) between sections and/or questions found on the Student Clinical Evaluation (Howell, 2004). The correlation coefficient was used to determine the strength and direction of the relationships when looking at success in the overall clinical experience with a range of -1 (strong negative relationship) to +1 (strong positive relationship), with 0 representing no relationship. High coefficients represent strong relationships (Irwin, Pannbacker, & Lass, 2008). Alpha levels would need to be at minimum 5% (.05) to demonstrate a significant relationship (Howell, 2004). Measures of regression were used to determine predictability of one section (or question) of the evaluation from the information about another section or question (Howell, 2004).

Correlations between Clinical Skill Sets

Pearson correlations were used to investigate relationships between a clinical supervisor's ratings in the areas of Related Professional Skills, Diagnostic Work, Therapy Planning, Therapy, Documentation, and Administrative Skills. A number of correlations related to professional skills were found – such as the ability to communicate with client and family, adherence to ASHA's ethical standards, and the ability to demonstrate both practical and clinically-based problem-solving skills – to be significantly related to therapy planning (*r*=.74;

p≤.001) and the ability to deliver therapy (*r*=.76; *p*≤.001). Related Professional Skills were also significantly related to adequate documentation in the therapeutic setting (*r*=.60; *p*≤.001) and Administrative Skills (*r*=.46; *p*≤.001). Related Professional Skills among students were also significantly related to the clinical supervisor's judgment of related competencies necessary to be successful as a communication disorders clinician (e.g., practicum and class attendance, as well as response to feedback) (*r*=.76; *p*≤.001). See Table 2.

DISCUSSION AND IMPLICATIONS

Measures of correlation (relationship) and regression (prediction) were implemented in an effort to discover whether elements of a clinical evaluation predict graduate student success. Correlation measures demonstrated significant relationships between the professional skills. For instance, a correlation was found between the ability to receive and follow instructions and the ability to think critically regarding both practical and clinically-based problems, therapy planning, and therapy implementation. There was also a strong correlation between professional skills and the degree of a supervisor's input needed to achieve competency and the ability of the graduate clinician to respond positively to constructive criticism. The aforementioned data revealed that the strongest predictor of clinical competency is related to the amount of supervision needed. Supervision decreases as

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students demonstrate professional skills, such as the use of practical and clinically-based problem-solving skills. The amount of supervision needed is decreased when students adhere to recommendations/suggestions with consistent follow-through. Further, students should be able to communicate effectively considering their cultural and linguistic backgrounds. Students should interact appropriately with the supervisor and peers, understanding and adhering to the ASHA Code of Ethics.

Functionally, the assumption could be made that a graduate clinician may be judged to need less supervision because s/he exercised effective habits of the mind. This is the graduate clinician who has the cognitive self-reflection, self-regulation, and self-organizational skills to make accurate decisions while communicating with the supervisor and then following through on mutually accepted plans of actions (Bandura, 2001). This is the graduate student who observes and questions various evidence-based processes critically for each individual client, while being aware of the strengths and limitations of his/her plans (McCrea, 2003).

Effective habits of the mind can be defined as professionalism (Dewey, 1922, 1933; McCrea, 2003). Katz (1993) defines professionalism as patterns of behaviors that are exhibited frequently and intentionally in the absence of coercion, representing habits of the mind. Building on Dewey's (1922, 1933) work, which addresses the cultivation of habits of the mind necessary for effective teaching, Ritchhart (2001) views professionalism as a collection of cognitive tendencies that capture one's patterns of thinking. "Ritchhart's definition is grounded in a dispositional view of intelligence and is premised on the concept that 'intelligent performance is more than an exercise of ability'" (Thornton, 2006, p. 54). Professionalism, according to Ritchhart, speaks not only to what a person can do, his/her abilities, but also to what someone is inclined to do. "Thus, [professionalism] address[es] the gap between our abilities and our actions" (Ritchhart, 2001, p. 3).

These metacognitive ways of thinking, habits of the mind (McCrea, 2003), lend themselves to the improvement of clinical skills directly, as indicated by the scoring of adequate or independent on the Student Clinical Evaluation. However, the ultimate benefit belongs to clients who are affected by this exercise of effective habits of the mind. Ultimately, good patient/client intervention leads to a high level of care and the improvement of clients' quality of life. It is the sign of a caring, compassionate, and competent graduate clinician well prepared for a progression of clinical training activities (Villegas and Lucas, 2002).

Limitations

A limitation of this study was the absence of a second clinical supervisor serving as a second observer, thus reducing the potential of observer bias. The Rosenthal Effect, described as the potential "hidden" bias of human judgment, can account for the phenomenon of observer/interpreter effect (Shiavetti & Metz, 2002, p. 114). However, potential bias and consequent observer effect were reduced by repeated measures and multiple evidences (e.g., student SOAP notes, clinical reports, lesson plans, intervention methods) that were collected across time. Weekly evaluations provided formative assessments of student competency, while cumulative measures over the course of the semester provided final summative data.

The application of inter-observer rating would have served to establish agreement that a second rater was observing and rating the same behavior as reported by the first rater, thus verifying that the two raters were in fact seeing/observing the same thing (Shiavetti & Metz, 2002, p. 119). Other considerations, such as increasing the number of participants, would serve to establish a larger sample size, while examining the implication of longitudinal data.

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Future Implications

We, as clinical supervisors, should be proactive in supporting the skills that lead our students to independence and competence in assessment and treatment. In order to facilitate these skills, clinical supervisors and professors must recognize that many students have not come to graduate communication disorders programs with the professionalism needed to be competent clinicians. We cannot assume they have come to their first-year of clinic with a disposition to use effective habits of the mind (Thornton, 2006). Future research should explore the ability of supervisors and students to affect professionalism at the same level and intensity in which knowledge and skills have been addressed. In his seminal work, Dewey (1922) emphasized the importance of the acquisition and development of professionalism, differentiating them from innate characteristics, traits or temperament. His work suggests that professionalism can be taught and cultivated (Thornton, 2006, p. 67). Behaviors that demonstrate self-evaluative thought processes can be seen in graduate clinicians who proactively research their clinical sites, perform file reviews, seek the clinical direction of their supervisors, search the knowledge gained in coursework, and incorporate the appropriate evidence-based practices into their clinical cases.

“Inasmuch as intentionality is a mental process, we see professionalism as habits of mind not as mindless habits ... habits of mind that give rise to the employment of skills and are manifested

(ideally) by skillful behavior” (Katz & Raths, 1985, p. 303). Reflecting on the findings of this research suggests that effective habits of mind are dynamic, reflective, contemplative, collaborative, and evaluative. Therefore, habits of mind can be described as conscious discernment that evolves, depending upon various individual clinical cases and contexts.

This has implications for increasing success in clinic at the foundational level of critical thinking and intentional reflective practice. Habits of the mind (Thornton, 2006) insure self-awareness, humility, and advocacy components needed to successfully participate in differential assessment and treatment at the initial training level. Indeed cultural competence requires a level of self-reflection that transcends the lifelong beliefs instilled by familial experiences. The ability to intentionally promote effective professional skills has the potential to increase graduate student clinical success through the strengthening of effective habits of the mind in preparation for more challenging experiences.

Further, it has been suggested that attention should focus on intentional instruction in areas of critical thinking and professionalism. Finn (2011) suggests that the most direct way to learn skills of professionalism and to understand the importance is to add these skills to the instructional curriculum in graduate training programs. Given further quantitative investigations in predicting clinical success, data-driven decisions in clinical speech-language pathology could lead to increased success in practicum experiences.

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APPENDIX A

STUDENT CLINICAL EVALUATION

CLINICIAN'S NAME _____

SUPERVISOR _____

SEMESTER/YEAR:

FALL _____ SPRING _____ SUMMER _____

MIDTERM _____ FINAL _____

DATE _____

RATING SCALE: Please rate the student's knowledge and skills using the following rating scale:

- (3) The student demonstrated **knowledge and skills** in this area and an independent level of clinical competency.
- (2) The student demonstrated **knowledge and skills** in this area at an adequate level of clinical competency.
- (1) The student demonstrated academic **knowledge** in this area, with emerging clinical skills in this area.
- (0) The student **did not demonstrate** any academic knowledge or clinical skill in this area.

SECTION I: RELATED PROFESSIONAL SKILLS

_____ Communicates effectively with client/patient, family, and caregivers considering their cultural and linguistic background.

_____ Interacts appropriately with supervisor and peers.

_____ Receptive of supervisor's recommendations/suggestions and follows through.

_____ Adheres to the ASHA Code of Ethics and manages one's self professionally.

_____ Demonstrates ability to communicate clinical information about clients effectively.

_____ Dress and appearance are professional and appropriate for the clinical demands.

_____ Demonstrates both practical and clinically based problem-solving skills.

Section I Average: ----- = _____

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SECTION II: DIAGNOSTIC WORK

- _____ Selects appropriate tests for the case supported by a rationale.
- _____ Obtains background information adequately.
- _____ Administers tests according to standardized procedures.
- _____ Conducts informal assessments appropriately for their purpose.
- _____ Adapts evaluation procedures to meet the client/patient's needs.
- _____ Scores and records tests accurately.
- _____ Interprets, integrates and synthesizes all information to develop diagnoses.
- _____ Makes appropriate recommendations given test results.
- _____ Relays test results and recommendation to the client/parent appropriately.

Section II Average: ----- = _____

SECTION III: THERAPY PLANNING

- _____ Develops appropriate intervention plans with measurable and achievable goals.
- _____ Demonstrates ability to formulate a succession of graduated intermediate steps leading to achievement of a goal.
- _____ Selects or develops and uses appropriate materials, instruments, and treatment strategies for intervention.
- _____ Takes previous treatment results into consideration.
- _____ Involves clients, patients, family, caregivers in treatment planning.
- _____ Demonstrates knowledge the nature of disorders being treated.

Section III Average: ----- = _____

SECTION IV: THERAPY

- _____ Procedures and activities are appropriate to address treatment objectives.
- _____ Various modalities are utilized.
- _____ Integrates appropriate activities into therapy.
- _____ Utilizes evidence-based intervention strategies.
- _____ Provides meaningful reinforcement.
- _____ Implements appropriate methods of measuring clinical progress in each goal area.
- _____ Demonstrates ability to adjust activities or procedures to client's needs.
- _____ Uses treatment time efficiently.

Section IV Average: ----- = _____

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SECTION V: DOCUMENTATION

- ___ Written reports exhibit logical and organized expression of ideas.
 - ___ Written reports are complete, concise and contain accurate information.
 - ___ Writing has appropriate form, spelling, grammar, punctuation and neatness.
 - ___ Soap notes accurately reflect client performance and skilled intervention provided in the therapy session.
 - ___ Goals and objectives contain all necessary components.
 - ___ Reports are turned in on time.
- Section V Average: ----- = _____**

SECTION VI: ADMINISTRATIVE SKILLS

- ___ Completes all administrative and reporting functions necessary to support evaluation and intervention.
 - ___ Collaborates with other professionals in case management as needed.
 - ___ Provides counseling regarding communication and swallowing disorders to clients patients, family, and caregivers.
 - ___ Makes referrals to other professionals as necessary.
- Section VI Average: ----- = _____**

SECTION VII: OTHER RELATED AREAS

- ___ Practicum class attendance
 - ___ Clinic Attendance (in-house, off-site)
 - ___ Activities/Assignments
 - ___ Project (i.e. case study, portfolio, oral presentation, etc.)
 - ___ Degree of supervisory input required to achieve competence
 - ___ Responds appropriately to constructive criticism/feedback provided by supervisor
- Section VII Average: ----- = _____**

Overall Composite Rating: ----- = _____

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GENERAL COMMENTS:

This evaluation was discussed with the student and the student was provided the opportunity to provide feedback. Written feedback is attached and noted.

(Graduate Clinician)

(Supervisor)

(Date)

(Date)