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INFLUENCE OF DISABILITY AND GENDER ON
TRANSITION ASSESSMENT AND GOAL GENERATOR (TAGG) SCORES

A DISSERTATION APPROVED FOR THE
DEPARTMENT OF EDUCATIONAL PSYCHOLOGY

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DEDICATION

Dedicated to my mother, Majeda al-Tirhi, my father Ata el-Kazimi, my wife Sherein al-Sharif, and all who supported me in this journey. You have always enlightened me to pursue education to make the world a better place.

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This work is dedicated first to the Creator of my life, the One who gives me purpose, and the One who will sustain me as a vessel to do good work. I would like to acknowledge all those who helped me along this journey. Dr. Martin, thank you so much for having me in the Zarrow Center. The support you have provided me throughout this process has allowed me to reach heights I could not have gotten to alone. Linda, you have taken care of me since day one, and for that I am so grateful. You have always wanted the best for me and did everything you could to make sure I received good things. Donna, thank you for everything! You are more amazing than you care to admit, I could not have made it without you!

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ABSTRACT

Legislators mandated transition education for students with disabilities to improve their post-school outcomes. Each student with an IEP should have an annual transition plan at or before his or her 16th birthday. IDEA mandated the utilization of age appropriate transition assessment to develop students' post-secondary transition goals based on students' strengths and preferences, mediated by needs, and developed in part by attainment of annual transition goals. The Transition Assessment and Goal Generator (TAGG) is currently under development to assess students' non-academic behaviors associated with post-school success and to provide prioritized annual transition goals.

The purpose of this study was to explore the influence of students' gender and students' disability on the TAGG's full scores and TAGG's domain scores across the Professional, Family and Student TAGG versions. By utilizing multivariate statistical analysis tests, the study examined the variations in the TAGG scores across the three versions and domains that are accounted for by student's gender and student's disability.

The participants were 349 high school students with disabilities, 271 family members, and 39 professionals who completed the TAGG assessments for 349 students with disabilities from seven states. Findings from multivariate analysis of variance revealed substantial influence of disability categories on TAGG full scores and TAGG domain scores across the three TAGG versions. Disability category statistically accounted for variation on seven out of the eight domains on the

Professional TAGG version, seven out of the eight domains on the Family TAGG version, and four out of the seven domains on the Student TAGG version. Generally, disability categories such as emotional disturbance, autism, and intellectual disabilities scored lower than students with specific learning disabilities and other health impairments.

Regarding gender, results revealed no significant differences on the overall TAGG full scores across the three versions, and on the Professional TAGG Full scores. On the other hand, gender significantly accounted for variation on the Family TAGG version, the Student TAGG version, one out of the eight domains on the Professional TAGG version, three out of the eight domains on the Family TAGG version, and one out of the seven domains on the Student TAGG version.

Findings from this study provided a piece in the process of accumulating validity-related evidence for the TAGG, and emphasized the need to develop a set of modified secondary transition education interventions that are sensitive to the unique characteristics and needs of each gender and disability category.

CHAPTER ONE

Introduction

When Congress passed the landmark legislation, the Education for All Handicapped Children Act (EHA) in 1975 (P.L. 94-142), the spirit of this law was to improve postschool outcomes for students with disabilities by improving the what, where, and how education and related services should be provided for special education students. Several years after the authorization of this law, policymakers, educators, researchers, parents, and others were interested to know, and questioning the effectiveness of the EHA and the millions of dollars that had been spent on improving the different aspects of life for the targeted population, the special education students.

Findings from postschool outcome studies lead to multiple federal special education legislation that became later on the source to fund more research on secondary transition education for students with disabilities (Blackorby & Wagner, 1996; Gozali, 1972; Hasazi, Gordon, & Roe,1985; Mithaug, Horiuchi, & Fanning, 1985; Newman, Wagner, Cameto, & Knokey, 2009; Peterson & Smith, 1960; Wehman, Kregel, & Seyfarth, 1985). Findings also revealed different postschool outcomes for students with disabilities based on their gender or disability.

In the area of secondary education transition, transition assessment turned out to be the key for successful transition planning where the Individuals with Disabilities Education Improvement Act (P.L. 108-446) required the use of "appropriate measurable postsecondary goals based upon age appropriate transition assessments related to training, education, employment, and, where appropriate, independent living skills."

A team from the University of Oklahoma is currently developing and validating a transition assessment called the Transition Assessment and Goal Generator (TAGG). This assessment will help professionals, family members, and students in identifying student's annual transition goals based on student's strengths, needs, and interests. The purpose of this study was to explore the influence of student's gender and student's disability on the Professional, Family, and Student Transition Assessment and Goal Generator (TAGG) scores. Findings from this study added a piece to the process of accumulating validity-related evidence for the TAGG, and emphasized the need to develop a set of modified secondary transition education interventions that are sensitive to the unique characteristics and needs of each gender and disability category.

Statement of the Problem

Kohler and Field (2003) expressed the new perspective of transition-focused education views as

> a fundamental basis of education that guides the development of all educational programs and not as an add-on activity for students with disabilities once they reach age 14 or 16. The concept of transition-focused education represents a shift from disability-focused, deficit-driven programs to an education and service delivery approach based on abilities, options, and self-determination. (p. 176)

In 1997, Wehmeyer and Schwartz published their findings from a follow-up study of 80 students with "mental retardation" and learning disabilities to explore the relationship between a student's self-determination level as measured by the ARC self-determination scale and positive postschool outcomes, such as employment and

independent living. The authors found that students with higher levels of self-determination during the last year of school are more likely to be employed and paid more after a year from graduation. Wehmeyer and Palmer (2003) reached the same results for the same group after three years from graduation.

Findings from postschool outcome studies lead to multiple federal special education legislation that became later on the source to fund more research on secondary transition education for students with disabilities (Blackorby & Wagner, 1996; Gozali, 1972; Hasazi, Gordon, & Roe,1985; Mithaug, Horiuchi, & Fanning, 1985; Newman, Wagner, Cameto, & Knokey, 2009; Peterson & Smith, 1960; Wehman, Kregel, & Seyfarth, 1985). Findings also revealed different postschool outcomes for students with disabilities based on their gender or disability (e.g., Newman, Wagner, Cameto, and Knokey, 2009; Shogren, Wehmeyer, Palmer, Soukup et al., 2007; Wehmeyer, Palmer, Soukup, Garner, and Lawrence, 2007).

Transition assessment is critical for successful transition planning and the Individuals with Disabilities Education Improvement Act (P.L. 108-446) stated the use of "appropriate measurable postsecondary goals based upon age appropriate transition assessments related to training, education, employment, and, where appropriate, independent living skills." is required.

Martin, Hennessey, McConnell, Terry, El-Kazimi et al. (2012a) developed a transition assessment to measure a set of non-academic behaviors that are associated with positive postschool outcomes for students with mild to moderate disabilities.

The purpose of this study was to explore the influence of disability and gender on professional, family, and student TAGG's full and domain scores. Results from this

study extended the knowledge about differences and similarities between males and females, and differences and similarity of different disability categories based on TAGG scores across the Professional, Family, and Student TAGG versions. This study also provided validity-related evidence to support the validity of the TAGG based on the examination of the influence of gender and disability variables on the TAGG scores.

Review of Related Literature

Development of Secondary Transition Education

One may consider the Halpern (1992) article "Old Wine in New Bottles" as a major resource to describe the development of the secondary transition education concept over time. The educational field used different terminology to describe the same services and issues related to the process of preparing secondary students to be successful citizens after they exit their schools. Also, the field of education redefined and developed the definition of the same term over time—in our case the term is "transition" or, later on, "transition-focused education". Halpern summarized this development in three transition movements: (a) the cooperative work-study movement of the 1960s; (b) the career education movement of the 1970s; and (c) the transition movement of the 1980s and 1990s.

Cooperative work-study programs (1960s). One of the first documented services provided to students with mild disabilities was the cooperative work-study programs. In these programs, schools and local offices of state rehabilitation agencies cooperate to create and provide an integrated academic, social, and vocational curriculum, combined with an appropriate unpaid work experience for secondary school students with mild disabilities (Halpern, 1973). Teachers would designate a portion of their daily work time to play the role of work coordinator through a formal cooperative agreement between the school and the rehabilitation agency. These programs were unable to survive in the 1970s due to administrative difficulties and problems in funding mechanisms--who will cover the work of the teacher, the school or the rehabilitation agency? And who is the responsible party to provide the funding

of this service? Halpern (1992) stated that the two main legislative pieces responsible for killing the work-study programs were the 1973 amendments to the Vocational Rehabilitation Act—the similar benefits requirements; and in 1975, the free appropriate public education requirements of Public Law 94-142.

Career education (1970s). In 1970, the Commissioner of Education declared career education to be the priority of the United States Office of Education and federal award grants of about 90 million dollars followed this declaration through the existing 1968 Vocational Education Act (Hoyt, 1982). The career education movement was directed to all students in elementary through high school years. The Office of Career Development was established in 1974 within the United States Office of Education to promote the career education movement. Another benchmark in the 1970s was the formation of the Council for Exceptional Children/Division of Career Development in 1976. In 1977, the Congress passed the Career Education Implementation Incentive Act, P.L. 95-207, to mandate the movement and a mention of people with disabilities as an appropriate target population for services added another point for the benefit of students with special needs (Halpern,1992; Test, Aspel & Everson, 2006).

Transition (1980s-1990s). One may consider this period as the golden transition period due to the quantity and quality of transition studies and related legislation. Test, Aspel, and Everson (2006) reported multiple distinctive events, starting with Will's (1984) position paper on transition, Halpern's (1985) description of the three foundations of transition, results from the first National Longitudinal Transition Study and other outcome follow-up studies, and signing of the historical transition landmark, P.L.101-476 on October 30, 1990. P.L. 101-147, the amendment

to P.L. 94-142, which later became known as the Individuals with Disabilities Education Act (IDEA), is often called the "transition law."

Will, the director of the Office of Special Education and Rehabilitation Services (OSERS), published a position paper to describe a transition model, which later became known as the Bridges Model (Will, 1984). In this model, Will described three types of services, or bridges, to facilitate the transition of youth from high school to employment. The first is the No Special Services bridge; this includes all regular community services for which any individual in the community could benefit, such as community colleges. The second bridge is Time-Limited Services where only qualified individuals with disabilities are eligible for services for a limited time, such as vocational rehabilitation services. The third bridge is Ongoing Services where qualified individuals with disabilities are eligible to have services across their life span, such as supported employment. One of the benefits of this model is that it helped in shifting the focus toward community employment and away from shelter employment.

Halpern (1985) expanded the OSERS Bridges Model by changing the destination of the model from employment to community adjustment and based this community adjustment on three pillars: a) residential environment, b) employment, and c) social and interpersonal networks (Halpern, 1985). The OSERS revised model by Halpern reflected the need to expand postschool outcomes beyond the common employment outcome by including other quality of life outcomes.

Research on transition outcomes and best practices continued in the 1990s to broaden the definition of transition and add more dimensions to postschool outcomes (e.g., Johnson & Rusch, 1993; Kohler et al., 1994; Kohler, 1996). The model published

by Kohler (1996), the Taxonomy for Transition Programming model was the only model based on both empirical and validation studies as well as outcomes from the Office of Special Education and Rehabilitation Services (OSERS).

Kohler and Field (2003) identified three specific initiatives that characterized the development of transition education during the mid 1980s and 1990s. First, federal special education and disability legislation targeted transition services and research. The 1983 amendment of P.L. 92-142 authorized funding for transition-focused research and model demonstration grants and contracts. This continued in the 1990 amendment to P.L. 92-142, the Individuals with Disabilities Education Act (IDEA), when the law defined transition services and required student's interests, preferences, and needs be considered in the process of developing these services. IDEA also required including a transition component—such as needed transition services—within each student's Individual Education Program (IEP) no later than the student's 16th birthday. In 1997, another IDEA amendment required including the transition component within the student's IEP earlier, when the student reaches age 14, and to focus on the student's postschool outcomes.

The second initiative is the federal, state, and local investment in transition services development where the Office of Special Education Programs (OSEP) funded more than 500 projects focused on transition education and services for students with disabilities since 1983. Also, federally funded national technical assistance and research centers have provided technical assistance to support transition initiatives and efforts in different states. The third initiative is the effective transition practices research where postschool outcomes follow-up studies and the NLTS helped in

identifying best transition practices correlated to positive postschool outcomes for students with disabilities, such as vocational education, paid work experiences, parent involvement, and interagency collaboration.

These three initiatives play the dominant role in developing the perspective of transition services from Will's bridges conceptualization of transition services with employment as an outcome and a service planning process to a broader conceptualization of transition services as a result of research findings regarding the complexity of effective transition practices. According to Kohler and Field (2003), the new perspective of transition-focused education views transition planning as

> a fundamental basis of education that guides the development of all educational programs and not as an add-on activity for students with disabilities once they reach age 14 or 16. The concept of transition-focused education represents a shift from disability-focused, deficit-driven programs to an education and service delivery approach based on abilities, options, and self-determination. (p. 176)

Kohler's transition taxonomy. In 1996, Kohler introduced the Taxonomy for Transition Programming as a conceptual framework consisting of five main areas: (a) student development, (b) family involvement, (c) program structure, (d) interagency collaboration, and (e) student-focused planning. This model includes transition practices associated with improving postschool outcomes for students with disabilities. According to Kohler and Field (2003), this model represents "concrete strategies that operationalize the transition perspective and represent a consumer-oriented paradigm built on student and family involvement and student's self-determination" (p.176).

Research Findings in Secondary Transition Education

Bullis, Yovanoff, Mueller, and Havel (2002) studied the population of incarcerated youth after their release to the community. Data from a five-year longitudinal study showed low rate of involvement in work or school and frequent moving. Regarding the variables associated with transition success, findings revealed three themes: (a) immediate involvement in the community activities (work or school) increases chances of success, (b) participants with learning disabilities are less likely to succeed, and (c) males are most likely to return to the juvenile correction system. These findings suggest the need for more effective programs that focus on immediate engagement of participants in community activities. This article highlights the importance of interagency collaboration and high quality preparation of transition personnel.

Carter and Wehby (2003) examined the job performance of adolescents with emotional/behavioral disorder E/BD by addressing three questions. The first question seeks to know if adolescents' job performance meets the expectations of their supervisors. The second question explores any differences between adolescents and their supervisors regarding the evaluations of adolescences' performance of certain work behavior, and the third question addresses any differences between adolescents and their supervisors regarding evaluating the level of importance of certain work behaviors. Findings showed that adolescents underestimated the importance of certain work behaviors and were unable to know these behaviors without directed training on that. Also, adolescents showed that they overestimated their job performance. These findings highlight the importance of training this population on how to be more

accurate in self-evaluating their performance and the need for training on the employers' most valued job skills.

Collet-Klingenberg (1998) conducted a qualitative descriptive case study. The author collected his data through three methods of data collection: (a) documents, (b) interviews, and (c) observations. The case study location was a high school, and the aim was to describe the reality of transition planning and implementation in one classroom. What I liked in this study is its reflection of the actual situation. It reported what is going on through different sources and from the participants' perspectives rather than documented reports. This could serve as another probe or sensor to get more data to use in formative evaluation. Students expressed the importance of training on real-life skills and self-determination skills. Students also appreciated the work experience program. Although this study added to our understanding of transition planning implementation in a real classroom, the inability to generalize results due to the qualitative nature of the design remains the major limitation in this study.

Devlieger and Trach (1999) described their ethnographic qualitative study on six participants with mild mental retardation. The purpose of the study was to evaluate the impact of mediation on the transition. Interesting findings revealed that transition from school to employment could not be predicted by the severity of disability. Another finding showed the importance of a social network surrounding the person with mild mental retardation to reach successful transition planning. This study also showed the positive effect of parents and that the absence of friends may have a crucial effect. Devlieger and Trach asked for a balanced mediation, which means taking into account the social network for the individual with disability before setting transition

elements. This article showed the importance of the subject-centered process and involving the social network when planning, implementing, and following-up the transition planning process.

Furney, Hasazi, and Destefano (1997) conducted a two-year qualitative cross-case study gathering and comparing three exemplary states' programs regarding transition policies and provided services. The study revealed seven major themes, which highly contributed to the evolution of transition policies and services. The first theme is about the role of positive values and attitudes towards the importance of transition. The second is about using direct policy approaches to create transition's changes. The third is about the importance of collecting supported advocates and the unity of leadership. The fourth is building collaborative structures and the fifth is the use of research and evaluation results to modify and direct changing efforts. The sixth is about ensuring long-term maintenance for the change process and the last is about integrating transition changes with other restructuring efforts. In my opinion, these themes could serve as the basic guidelines for any successful transition change process.

Lindstrom and Benz (2002) collected data by interviewing, observing, and exploring documents from six women with disabilities. The study revealed a number of important findings. The first was about the three suggested stages of career development (a) the unsettled unclear employment goals, (b) the exploratory cleared employment goals, and (c) the focused clear employment goals. These three stages seem to be the same for the majority of people with differences in time needed to transfer to the next phase, where successful people reach the final stage faster. For women with disabilities, transferring to the final stage is more difficult than for a

woman without a disability and our responsibility is to facilitate faster transfers towards the final stage. The study also revealed other elements that seemed to influence the stages of career development, such as individual motivation, personal determination, opportunity for career exploration, on-job vocational training, and supportive work environment. Family support and advocacy emerged again to highlight the importance of involving families in the transition planning process.

Smart (2004) published results from a small-scale survey completed by 17 parents who have children with severe and/or complex learning difficulties. The students were those who had transitioned from a residential special school to adult placement. One of the major findings was the lack of information offered for parents to help them successfully involve and advocate for their children. The participation of children was low and the unclear coordination between different service agencies raised the issue of the need for a specific organization to handle the coordination between different agencies.

Conclusion. Overall, these different articles show the need for more family involvement, a student-centered transition planning process, more training in self-determination skills, more vocational training, and a need for a leadership agency to monitor the progress in policy improvements and implementation of transition evidence-based practices. What we have through NSTTAC and adoption of the Kohler (1996) taxonomy with the national transition longitudinal studies represents positive signs that the field of special education is moving in the right direction toward improving secondary transition education. Professional development and bridging the

gap between research findings and implementation of best practices remain the real challenges for the coming years.

Research in Self-determination

Schloss, Alper, and Jayne (1993) presented the importance of including self-determination in special educational curricula due to three major points—first, the growing philosophical and legal support of the importance of providing opportunities for choices for everyone; second, the empirical findings that individuals with disabilities can learn self-determination skills; and third, the follow-up studies that show lower postschool outcomes for individuals with disabilities compared to individuals without disabilities.

In 1997, Wehmeyer and Schwartz published their findings from a follow-up study of 80 students with "mental retardation" and learning disabilities to explore the relationship between a student's self-determination level as measured by the ARC self-determination scale and positive postschool outcomes, such as employment and independent living. The authors found that students with higher levels of self-determination during the last year of school are more likely to be employed and paid more a year after graduation. Wehmeyer and Palmer (2003) reached the same results for the same group three years after graduation.

In the 1980s and 1990s, researchers proposed multiple models on how to improve self-determination practices among students with disabilities. The following paragraphs will summarize a number of these models with a discussion for each of them.

Mithaug, Martin, and Agran (1987) introduced the Adaptability Instructional Model, which was designed to teach students generic employment adaptability skills through four major components (a) decision making, (b) independent performance, (c) self-evaluation, and (d) adjustment. The authors argued that preparing students with disabilities on how to use these generic adaptability skills across different situations can help them become better problem solvers and increase their likelihood of maintaining success in changing work environments.

Mithaug et al. described how this model can help in preparing students to respond appropriately on five major problems associated with most jobs: (a) working on tasks employees may or may not enjoy, (b) earning money, (c) working on tasks that match employees' skills and abilities, (d) completing tasks quickly and accurately, and (e) completing tasks that must be done. One of the points that count for this model is the operationalization of the concepts, which helps in moving from theory to practice. Students, through different questions, can learn how to make better decisions by defining, setting alternatives, and judging consequences. The model works on reducing teacher authority on learning activities and transfers this authority to students to help them perform independently. Students will have more opportunities to control learning activities and process. The model teaches students how to control their progress by monitoring and deciding what to do next to solve the problems and improve their performance. The authors highlight the need for more self-directed programs based on students' preferences and interests, across multiple situational conditions, to improve students' problem-solving skills and increase their likelihood of adapting to new situations.

Martin, Oliphant, and Weisenstein (1994) described the Self-Directed Employment Model (SDEM). The SDEM is based on choose, manage, evaluate, and adjust, where individual needs, preferences, and strengths work as the main factors beside opportunities of available jobs to decide what is the best job for each individual.

There are three main characteristics that make this model solid. The first characteristic is the adopting of a self-directed methodology in every single procedure of the model in all three phases—assessment, placement, and follow-up. For better quality of life, and for better outcomes and higher motivation levels, we need to design our practices to be self-directed rather than teacher-directed practices. The second characteristic is the adopting of a repeated measure, multi-sources assessment process. The self-directed assessment used in this model, which relies on ecological assessment methodology, seems to be the best assessment to reflect interests and preferences within environmental context and job availability. Matching students' preferences, interests, and abilities with the most appropriate job opportunities is very complicated and multiple sources of data with repeated measures across time will increase the likelihood of a successful matching process.

The third characteristic of this model is the placement phase, which depends on teaching problem-solving strategies in the actual real environment. This characteristic seems to me to be the most creative part in the model; that is, to teach thinking skills—like problem solving and decision making—in an appropriate realistic content. The best content includes the preferences of the individual and the SDEM is sensitive to all these issues. I could think of no better way to teach problem solving strategies than this way!

This strategy of teaching thinking skills may be generalized and adopted in other situations for different groups of people. It also helps improve communication between the individual and other workers and building strong professional relationships—assuming the adoption of teaching thinking skills within safe and friendly environments. This also helps individuals to better recognize their abilities and limits and to learn how to overcome their limits and adjust to new situations.

One may question the feasibility of SDEM and it seems clear that implementation of this model requires effort from different parties over a period of time. Although SDEM may cost more in time and resources, expected benefits can last a longer period of time due to matching jobs with students' preferences and interests. Experiencing failure due to lack of matching a job with a student's preferences and interests could negatively affect a student's motivation and reduce the likelihood of success at other job experiences.

Finally, I believe that the SDEM succeeds in providing sound procedures to help individuals with disabilities find the best job match and reach stability in their career. This model helps individuals with disabilities to learn how to choose, decide, evaluate, adjust, and succeed in their postschool jobs.

In 1994, Field and Hoffman described their model of self-determination and the procedures they adopted to develop this model. This self-determination model consists of five solid, sequenced steps. I liked the addition of the fifth step, the national panel, which includes experts and researchers. If I may suggest a sixth step, I would add an online dissemination of the model with a feedback procedure to ensure the engagement of more experts and other personnel from the field. I believe Field and Hoffman did a

good job in simplifying the complex concept of self-determination through operational definitions of five internal components of self-determination. The model describes the knowledge and values as "know yourself" and "value yourself;" the skills as "plan" and "act;" and the importance of practicing self-determination as "Experience Outcome and Learn."

Two points I would add on this model, the first point is the need to include a philosophical framework that could help the individual to know and value himself. This philosophical framework—certain ideological system—could also help in defining success, which I believe is an extremely important concept to be defined in any self-determination model—does the model define success as goal achievements, planning and acting towards goal achievements, or both?

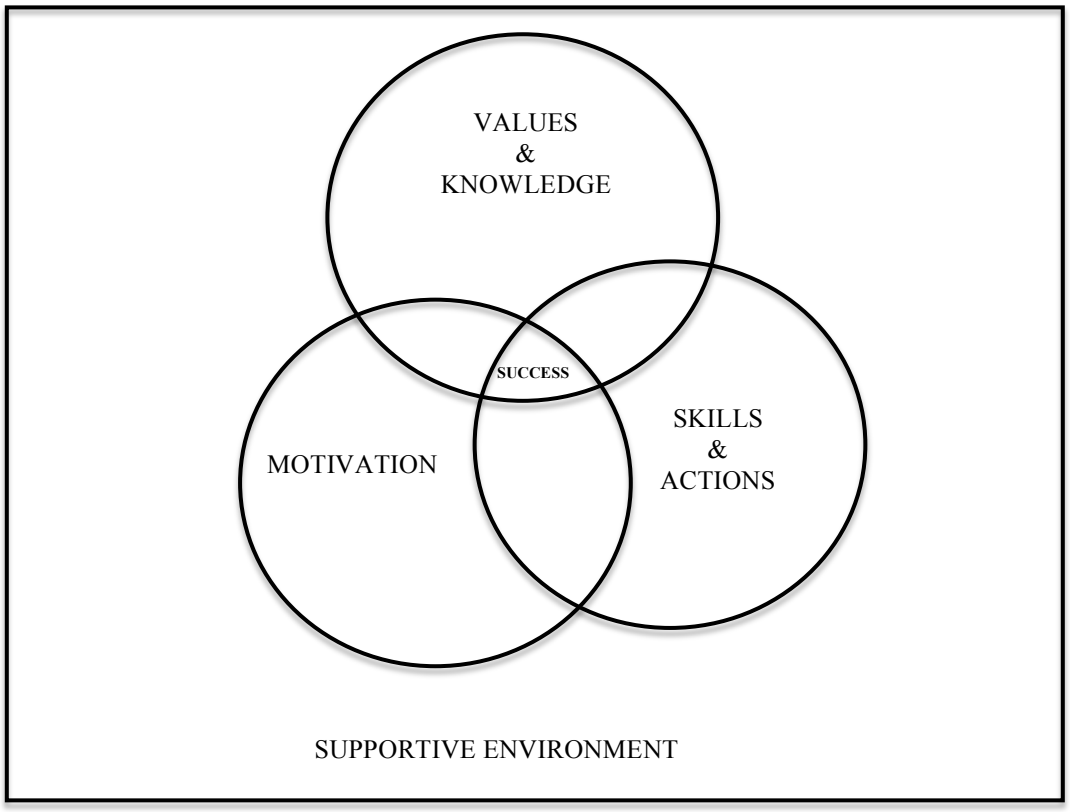
The second point to add is motivation. Motivation is an essential component to be included in a self-determination model. I believe that the addition of "motivate yourself" as one of the components of self-determination would enrich this model. Individuals need to know and practice strategies on how to motivate themselves and how to maintain high levels of motivation to be successful.

I included a four-component model (Figure 1) and call it the Model of Self-determination and Success. This model consist of (a) values and knowledge, (b) skills and actions, (c) motivation, and (d) supportive environment, and represents my conclusion on what could help students to be more successful in their life experiences.

Field and Hoffman reported the existence of external factors and made it clear that their model is directed only towards the internal factors. From this, one can notice the need for a more comprehensive self-determination model targeting the

environmental external factors (e.g., others' expectations and practices). It is very important to simplify and operationalize self-determination environmental components and make use of these components in developing appropriate educational policies and teacher preparation materials designated to foster self-determination best practices in schools.

Figure 1. *Model of Self-determination and Success*



Model of Self-determination and Success

Schloss, Alper, and Jayne (1993) described a framework for providing choices based on an analysis of risk and benefits. They assumed that "the desire for physical and emotional safety, coupled with lowered expectations, has restricted choices available to people with disabilities" (p. 217).

The Schloss et al. model consists of three dimensions. Dimension one is about the "source of input," which means how much input a person with disabilities has in making a particular decision. The second dimension is about the "degree of risk" due to that particular decision. And the third dimension is about the "degree to which input is binding". The authors included the effect of each dimension's different levels to help in reaching the best decision. They stated that

> the extent to which an individual is granted responsibility in making choices (Dimension-1), the degree of harm that could result from making a bad choice (Dimension-2), and the degree to which outside input is binding (Dimension-3) must all be considered on a choice-by-choice basis when encouraging or limiting personal freedom. (p. 219)

Schloss et al. discussed how different measures and assessments (e.g., intelligent tests and adaptive behavior scales) are not enough to give an accurate picture for the individual abilities of decision-making. They described an ecological approach called "situation-specific assessment," consisting of three evaluations to identify the current "choice status." These three evaluations started with assessing the "learners' potential for making an adverse choice" through three assessments: (a) unstructured interviews with parents and professionals, (b) unstructured interviews with the individual, and (c) direct observation of the student in similar situations. The second evaluation is "risks associated with adverse choices." This complex risk evaluation could be conducted by considering several factors such as the nature of the possible harm, short or long-term; the type, psychological or physical; and whether the harm is direct and predictable or not. The third evaluation is the "input required for

optimum choice", where an evaluator may use the unstructured interviews with parents, professionals, and students as well as observations. The purpose of this evaluation is to balance input with risk.

The authors also stated that the principal method for enhancing choice-status is through prompt management. They listed six possible examples of prompt management, which I may summarize as giving the individual the choice, the time, and the opportunity to initiate the response before our input.

Schloss et al. presented an interesting perspective of choice through risk and benefit and how authorized people could limit individual right to choose because of unsystematic evaluation and possible risk. They also stated that choice-status is dynamic and could improve through maturity and learning.

Wehmeyer, Palmer, Agran, Mithaug, and Martin (2000) introduced the Self-Determined Learning Model of Instruction (SDLMI) as a model of teaching based on self-determination concepts. The SDLMI derived from the Adaptability Instruction Model (AIM) (Mithaug, Martin, & Agran, 1987) and is considered as a result for more understanding of the complicity of self-determination and students' postschool outcomes. Wehmeyer et al. (2000) realized that adjusting to environmental changes as indicated by the AIM is not enough to insure student's success and changing the surrounding circumstances by advocating is a need in many cases.

The authors considered SDLMI an expansion of AIM, which included teaching students with disabilities how to employ self-regulated problem-solving strategies in order to achieve self-selected goals by using student-directed instructional strategies.

The SDLMI consists of three phases--what is my goal, what is my plan, and what have I learned; each phase represents a problem that the student should solve by answering four questions. Each question is linked to teacher objectives where a list of educational supports is identified to help the teacher promote a student's actions and role as the primary casual agent in solving the problem.

The structure of SDLMI based on theory in the problem-solving and self-regulation literature suggests the sequential structure of thoughts and actions where each phase of SDLMI leads to the next one. The field test of SDLMI showed good validity and effectiveness. An important point related to the SDLMI is its applicability across a wide range of educational content areas, which provides the ability to include self-determination instruction within regular academic content areas.

In 1998, Field, Martin, Miller, Ward, and Wehmeyer wrote in a position statement for the Council for Exceptional Children (CEC), the Division on Career Development and Transition (DCDT), about multiple issues related to self-determination. They started by summarizing the major self-determination historical developmental milestones and reported how self-determination

> is consistent with CEC's history of moving special education from a charitable activity to a civil right and with DCDT's role in moving employment training from helping youth get jobs to providing the support necessary for them to explore and choose their own career path. (p. 114)

The authors wrote about the slight differences between different definitions of self-determination (SD) and quoted the following definition as a summary of the common themes across all definitions

> Self-determination is a combination of skills, knowledge, and beliefs that enable a person to engage in goal directed, self-regulated, autonomous behavior. An understanding of one's strengths and limitations together with a belief in oneself as capable and effective are essential to self-determination. When acting on the basis of these skills and attitudes, individuals have greater ability to take control of their lives and assume the role of successful adults. (p. 2)

This definition first came in "a practical guide for teaching self-determination", that was published the same year by the same authors (Field, Martin, Miller, Ward, & Wehmeyer, 1998a). Defining self-determination is very important and crucial to facilitate self-determination research and intervention development.

Field et al. wrote about different factors that help in highlighting the importance of self-determination to be taught in schools for students with and without disabilities. They reported findings from studies that show the need to improve postschool outcomes for all students, especially for students with disabilities. They also reported studies relating positive outcomes to higher self-determination levels. Also mentioned is the civil rights movement and legislation toward improving practices of self-determination for individuals with special needs.

The authors highlighted the importance of implementing self-determination practices through different level—students, educators, family, …etc. They also suggested educational activities to support self-determination in different settings. An important point mentioned in the article is the need for flexibility in our educational system to be able to meet different students' needs and preferences. This point

represents the core of the Lean Process in manufacturing management development. A lean production line is supposed to be flexible to meet customers' needs. As education specialists, we need to rethink how to develop flexible educational policies that meet students' and community's changeable needs.

Self-determination best practices. Researchers developed multiple instructional materials to promote different components and areas of self–determination and used different intervention research designs—single case and quasi-experimental group design—to measure the effectiveness of these interventions (Cross, Cooke, Wood, & Test, 1999). The field also set certain criteria to decide when to consider an intervention as an evidence-based practice and how to design high quality intervention research (Horner et al., 2005).

Wehmeyer and Lawrence (1995) reported results regarding the applicability and effectiveness of the program *Whose Future is it Anyway?* After describing the importance of student involvement according to research, they mentioned the significant gap between the preferred outcomes and actual practices that occurs in our schools and, therefore, the need for programs to fill this gap and implement research findings. The researchers introduced a brief description of the program, including funding, developing, and testing of the program in the field. In this program, students direct their learning by having the opportunity to control their learning process in designing the instructional material and recognizing different levels of needed support. Each student in this program has the opportunity to choose his coach. The scope and sequence looks good through the different sections and sessions of the program and content seems to cover all the aspects related to self-determination from knowing the

terms used for self-awareness, exploring community support resources, setting school and postschool goals, and knowing how to communicate and manage the IEP meeting.

In their effort to test this program, Wehmeyer and Lawrence conducted a mixed method design. They administered pre-post measures to measure "students' self-determination and perceptions about their ability to participate in the planning process" (p. 73). Results from a repeated measure ANOVA analysis indicated significant improvement evidence on some of the tests and failure on others. It also indicated gender differences for in favor of girls regarding the beneficiaries of the program. One of the missing points in this study is the lack of fidelity instruction. The researchers did not mention any procedure to ensure the accurate implementation of the program. Another point is the rate of sessions at one lesson per week. I believe this could be one of the reasons for some of the negative results. The researchers did well in describing the sample, but mentioned little about the instructional procedure. Information gathered through interviews offered a valuable resource as feedback to improve the program. What students mentioned about the writing as a negative issue in the program highlighted the importance of simplifying any written part of any program directed to students with disabilities. This one-year study partially supported the effectiveness of *Whose Future is it Anyway?* and showed unexpected differences between males and females in response to the this intervention.

Cross, Cooke, Wood, and Test (1999) compared the effectiveness of *McGill Action Planning System (MAPS)* and *Choosing Employment Goals from ChoiceMaker curriculum (ChoiceMaker)* as two different approaches to improve self-determination skills and student involvement in their transition planning process. The sample was 10

high school students from a self-contained special education classroom with mental retardation. Cross et al. observed IEP meetings for five of the students to get a sense of how well students apply what they learn and participate in their IEP meetings. During the *MAPS* intervention, a facilitator asks questions to students and team members to encourage thinking about students' preferences, strengths, and limitations. This leads to students' goals presented in different ways, such as drawings. The researchers used six modified questions (p. 504) about past experience, dreams, nightmares, strengths, needs, and ideal day. The *ChoiceMaker* intervention describes and introduces a lesson plan format in the manual. Students are taught how to choose goals through videotape and worksheets. The work sheet questions help the students write goals according to individual needs, preferences, and strengths. The authors used different dependent measures to measure the improvement on self-determination. Results showed better outcomes for the *ChoiceMaker* intervention on both student and teacher ratings, and regarding efficiency of instruction.

German, Martin, Huber Marshall, and Sale (2000) examined the effectiveness of *Take Action* instructional material in improving daily goal attainment for students with mild to moderate mental retardation. They taught six students with mental retardation the *Take Action* goal attainment skills and used a multiple base-line design across participants to find any functional relationship between intervention and students' performances on a number of attained daily goals. Results showed a positive functional relationship between the intervention and students' performances as demonstrated by a graph. German et al. described the setting, participants, intervention, and procedures very well, which makes it easy for another researcher to replicate the

study. The comments from the teacher-subjective observation were promising regarding the feasibility of implementation of the *Take Action* instructional material in class.

Zhang (2001) examined the effectiveness of *Next S.T.E.P.* instructional material to improve self-determination skills for students with learning disabilities as measured by the *Arc's Self-Determination Scale*. The quasi-experimental study involved 71 ninth-grade students with learning disabilities. About half of the students served as the control group and the other half as the treatment group. The second author of the instructional material trained teachers in the treatment group to ensure quality of instructional implementation. However, Zhang didn't include instructional fidelity in the study, which means a lack of information on how well the teachers implemented the intervention in the class. Zhang mentioned the use of a demographic information sheet, but did not include enough information on students characteristics. He also didn't include a calculation of the effect size of the intervention. Using an ANCOVA to analyze differences between different groups and tests indicated a statistically significant effect in favor of the *Next S.T.E.P.* instructional material as measured by the *Arc's Self-Determination Scale*.

Allen, Smith, Test, Flowers, and Wood (2001) conducted a single-case multiple baseline design across instructional units with replication across participants to examine the effectiveness of modified student *Self- Directed IEP* instruction on students' participation in their IEP meetings for students with moderate mental retardation. Allen et al. used mock IEP meetings to generate repeated measures for each instructional unit. They also chose a good time for this study to ensure that each

student had a real IEP meeting before the intervention, and another real one after the completion of the intervention. This highlights the importance of collaboration between researchers and schools. The authors mentioned the use of a statistical technique called Wilcoxon matched-pairs signed-ranks tests for small sample size, but they didn't include enough information on this technique. Allen et al. reported the influence of modifying some Self-Directed lessons on the performance of students on other lessons due to sequence in the design of instruction as interpreted by the researchers.

Snyder (2002) used a single-case multiple baseline design across behavior with replication across participants to examine the effectiveness of *Self-Directed IEP* lessons in enhancing students' participation in their IEP meetings for students with combined behavioral disorders and mental retardation. The single-case design used for this study fit the nature of small sample size for populations like the targeted one. Snyder used a simulated IEP meeting to collect the data. Snyder didn't put great effort on describing the dependent measures and scores collected during the intervention period. The graph didn't include a key to simplify reading of the points. Snyder used a modified rating profile to measure the treatment acceptability from the students' perceptions.

Woods and Martin (2004) used a single-case AB design with replication across participants to examine the effectiveness of using self-determination contracts to enhance the performance of workers in a supported employment environment as measured by the employees' direct supervisor evaluation. Results showed direct social benefits to employees who were performing too low and threatened termination from

their jobs. The design used, as mentioned by the researcher, was similar to a multiple baseline, but not exactly a multiple baseline because of the time issues. Results from graphs presented solid evidence on the effectiveness of Self Determination Contracts in enhancing employee performance in supported employment environments. The study missed instruction fidelity, but mentioned the inter-observer agreement. The method section was clear and well designed for any researcher to replicate the study in the future. The amazing effect for the intervention makes it worthy for the worker in the field to use it for better employee performance.

Intervention research on self-determination appeared to improve quantitatively and qualitatively. First, the number of intervention studies increased to provide enough studies needed to conduct multiple meta-analysis studies and research reviews on self-determination by different groups of researchers (e.g., Algozzine, Browder, Karvonen, Test, & Wood, 2001; Fowler, Konrad, Walker, Test, & Wood, 2007; Konrad, Fowler, Walker, Test, & Wood, 2007; and Malian & Nevin, 2002). Second, the quality of research designs improved to meet quality indicators suggested by a number of recognized researchers in the field of methodology (Horner et al., 2005).

Using multi-component interventions for a longer period appears to increase the effectiveness of self-determination intervention (Chambers et al., 2007). The complexity of the self-determination concept—as apparent from the self-determination definition—means that improving self-determination means improving students' performance on different skills, and improving students' knowledge and beliefs in self-determination. Chambers et al. recommended a self-determination instruction design to include multiple components when designing self-determination material.

Infusing self-determination instruction in academic subjects is also recommended to improve students' academic performance and overcome the shortage of time during the school day. Limited research showed divergent results regarding the effectiveness of self-determination instruction on student's academic performance and more research in this area could reveal a better understanding of the relation between academic performance and self-determination (Fowler et al., 2007).

Self-determination is spread over the life span and improving self-determination needs to start earlier, during elementary grades and before (Malian & Nevin, 2002). Teachers may use age-appropriate self-determination instructional materials to teach younger students how to choose, set, and attain goals. Teachers may introduce advance examples on problem solving, decision making, and planning in higher grades or depending on students' cognitive abilities to introduce the appropriate skills' level.

Comprehensive programs of self-determination are supposed to include practices to improve family involvement. Increasing opportunities to practice self-determination should focus on the environment surrounding the student in school and at home. Advantages of self-determination interventions will become diminished if students do not find support and opportunities to practice self-determination in school and at home.

Although intervention studies involved some group designs, larger numbers of single-case designs used to measure the effectiveness of different self-determination interventions across multiple settings, disabilities, and components are needed to enable the conduction of meta-analysis studies and support generalization of effective

interventions. The characteristics of different populations of disabilities make using single-case designs more appropriate than group designs. Suggested quality indicators by Horner et al. (2005) will help researchers to produce high quality single-case studies and this will help in establishing more evidences on self-determination best practices.

Self-evaluation. Transition and self-determination assessments depend generally on self-rating scales (e.g., AIR, ChoiceMaker, TPI). Understanding the concept of self-rating process is important to achieve accurate assessing process, and to help in interpreting results generated from these assessments. Clark and Patton (2006) discussed activities to prepare students to be more familiar with self-rating concept as opinions, in contrast to common academic test questions that have only right or wrong answers. They also talked about agreements across different raters as a critical condition to support certain opinions and consider them valuable to use in further decisions. Clark and Patton also discussed how honesty of the self-raters, and how self-raters trust individuals who will look at the scores could leads to inaccurate scores.

Other factors such as lack of understanding the language or terminology of items, limited exposure to expected performance needed to succeed, not having predetermined criteria to rate each item, or failure to understand the rating scale may reduce the accuracy of self-rating process (Clark & Patton, 2006).

Educational Assessments

In the area of secondary transition education, transition assessment turned to be the key for successful transition planning where Individuals with Disabilities Education Improvement Act (P.L. 108-446) required the use of "appropriate measurable postsecondary goals based upon age appropriate transition assessments

related to training, education, employment, and, where appropriate, independent living skills."

When talking about educational assessment instruments, the two terms "validity" and "reliability" are commonly used as the main characteristics to describe the appropriateness and consistency of assessment instrument usage and scores. Experts in the field of education continue to develop definitions and techniques for the two concepts and are coming closer to having consensus about the two terms. Following are descriptions of concepts related to assessment validity and reliability.

Validity. Brennan (2006) summarized the development of validity over time. He reported four major validity developments. The first is when the theory of prediction was very nearly the whole of validity (beginning of 1950). The second is when the four types of validity—content, predictive, concurrent, and construct—were published in 1954. The third is when validity categories collapsed in 1966 from four to three validity aspects or concepts: content, criterion, and construct validity. The fourth is when the new American Educational Research Association (AERA), American Psychological Association (APA), and National Council on Measurement in Education (NCME) *Standards for Educational and Psychological Testing* was released in 1999 and includes a revised conceptualization of validity.

The 1999 *Standards* operationalized the validity as five types of validity evidence instead of the trinity view—content, criterion, and construct validity (Goodwin, 2002; Goodwin & Leech, 2003). These types are (a) evidence based on test content, (b) evidence based on response processes, (c) evidence based on internal structure, (d) evidence based on relations to other variables, and (e) evidence based on

the consequences of testing. The *Standards* also emphasized the unitary concept of validity as follows

> These sources of evidence may illuminate different aspects of validity, but they do not represent distinct types of validity. Validity is a unitary concept. It is the degree to which all of the accumulated evidence supports the intended interpretation of test scores for the intended purpose (AERA, APA, & NCME, 1999, p. 11).

Goodwin (2002) listed different validation activities that could be used in studies to establish each of the five types of validity evidence as presented in the 1999 standards. Different authors presented validity from different views and mentioned multiple notions related to validity (Crocker & Algina, 1986; Gay & Airasian, 2003; Messick,1995; Salvia & Ysseldyke, 1995, 2004). Messick's (1995) work was the dominant view and I can assume that his definition of assessment instrument validity is the most common definition adopted by many researchers today. He focused on the "value implication" and "score meaning" as a basis for social consequences of scores and defined the assessment instrument validity by interpretations and meaning of scores. Messick suggested six validity related evidences: (a) content, (b) substantive, (c) structural, (d) generalizability, (e) external, and (f) consequential. The influence of Messick's work was very clear on the *Standards* when comparing his six types of validity-related evidences with the *Standards* types of validity related evidences.

Gay and Airasian (2003) wrote that validity is "concerned with the appropriateness of the interpretations made from test scores" (p.135). Validity does not refer to the assessment itself. Validity is "specific to the interpretation being made and

to the group being tested" (Gay & Airasian, 2003, p.136). This is illustrated by an assessment that could be used for different purposes—such as measuring student achievement, predicting future success, or making an admission decision—and could be administered to groups which differ in age, readiness, or any other characteristic that could affect the assessment results.

Validation begins with an understanding of the purpose of the assessment. Salvia and Ysseldyke (1995) wrote that validity is "the extent to which an assessment procedure measures what its authors or users claim it measures. Validity refers to the appropriateness, meaningfulness, and usefulness of the specific inferences" (p.162).

Types of validity-related evidence. Although the new view of validity focuses on types of validity evidence, some textbooks continue to use the previous terminology. As an example, Gay and Airasian (2003) listed four types of validity: content validity, criterion-related validity, construct validity, and consequential validity. They explain each type as follows:

Content validity related evidence. It is the degree to which a test measures an intended content area. Content validity requires both item validity and sampling validity. Item validity is concerned with whether the test items are relevant to measurement of the intended content area, while sampling validity is concerned with how well the test samples the total content area. There is no statistical approach for content validity where experts in the field judge content validity of a certain assessment. Face validity is sometimes used to refer to the validity of the appearance of the assessment. Content validity is essential for achievement tests (Gay & Airasian, 2003).

Criterion validity-related evidence. When an assessment is used to replace another assessment or predict results of another assessment in the future, the new assessment scores are correlated to criterion scores of another test. *Concurrent* validity refers to how well a new assessment produces the same results as an existing assessment—criterion assessment—when administered within the same period of time. The correlation between the two tests will be considered the concurrent validity coefficient. *Predictive* validity refers to how well a new assessment predicts students' scores on another existing assessment—the criterion assessment—when the student takes this criterion assessment in the future. The correlation between student scores on the two assessments represents the predictive validity coefficient. The correlation coefficient varies from -1 to +1 and the closer to 1, the higher the correlation and validity (Gay & Airasian, 2003).

Construct validity-related evidence. The construct validity is considered to be the most important type of validity that can be reached by implementing multiple *content* and *criterion-related* validity techniques. Construct validity is concerned with the accurate representation of a group of measurable variables to a specific construct—such as anxiety, intelligence, or motivation. Construct validity is established by utilizing multiple studies that support the assessment constructs. As an example, for an intelligence test, construct validation studies can include correlating students' scores on the new assessment with the students' scores on an existing well-established similar assessment or achievement assessment. Beside confirmatory validation, construct validation studies can include disconfirmatory validation by correlating students' scores on the new assessment to students' scores on an assessment measuring a

different concept that we expect to be uncorrelated to the concept measured by the new assessment (Gay & Airasian, 2003).

Consequential validity-related evidence. The consequential validity is concerned mainly with unintended negative or harmful consequences that could result from the assessment on students, teachers or other test users (Gay & Airasian, 2003). Despite the position of some experts—which I agree with—who are against the inclusion of the consequential validity-related evidence in the definition of validity I will describe all types of validity-related evidence and explain my position later when I construct my personal definition of validity.

Although no statistical approach can be used to establish the consequential validity-related evidence, questioning expected effects from implementation of the assessment instrument on different groups and settings could avoid us undesired harmful consequences on certain groups. An example of that could be the negative, undesired consequences of multiple choices items on a math instrument for students with math difficulties.

To conclude, assessment instrument validity is much more than expert evaluation of the assessment instrument. Validation studies should include as many of the validity-related evidence such as factor analytical studies, correlational studies, and intervention studies. Another point of interest is the type of activities needed to establish the validity. Some of these activities are of quantitative nature while others are of qualitative nature. This highlights the need for both quantitative and qualitative methods when conducting validation studies.

Reliability. Assessment instrument reliability refers to the degree to which an assessment consistently measures whatever it is designed for. This means that reliable assessments should give approximately the same result or scores—within an acceptable factor of error—when we repeat the assessment over time or use equivalent versions of the assessment. While validity is concerned with the appropriateness of an assessment, reliability is concerned the consistency of the assessment. A good instrument is supposed to be highly valid and reliable. Also, a valid assessment is always reliable, but a reliable assessment is not always valid. Assessment reliability is expressed numerically (Gay & Airasian, 2003). Most reliability coefficients are obtained by using correlation where high reliability is closer to 1.

Stability (test-retest reliability). Stability is the degree to which scores of the same assessment instrument are consistent over time—generally two to six weeks. The correlation coefficient is used to express the reliability coefficient (Gay & Airasian, 2003). Period of time between the two administrations and type of assessment instrument content represent some of the factors that may influence this type of reliability coefficient.

Equivalence (equivalent forms) reliability. The equivalent-forms reliability is the degree to which scores from two identical equivalent versions of an assessment instruments are consistent when given to the same group within the same period of time. Type of content and degree of equivalency of forms and groups of examinees can affect the value of a reliability coefficient calculated from this method (Gay & Airasian, 2003).

Internal consistency reliability. Internal consistency reliability deals with one test at one time to provide information about the consistency among the items in a single test. Three different approaches can be used to obtain the internal consistency reliability coefficient: split-half reliability method, Kuder-Richardson reliability method, and Chronbach's alpha reliability method (Gay & Airasian, 2003).

Split-half reliability. The split-half approach can be obtained by splitting the assessment into two equivalent halves (evens and odds) and then apply the Sperman-Brown correction formula $r_{total} = 2r_{split\ half} / (1 + r_{split\ half})$, where $r_{split\ half}$ is the correlation between the two halves. This correction formula is to overcome the reduction in the overall number of items when splitting the assessment, which will affect the reliability since reliability depends on number of items (Gay & Airasian, 2003, p. 144).

Kuder-Richardson's (KR) reliability. This approach is used to obtain the internal consistency of a test with dichotomously scored items and is considered to be a special case of Cronbach's alpha approach. KR-20 and KR-21 formulas can be used to calculate the KR reliability coefficient (Gay & Airasian, 2003, p. 144).

Cronbach's alpha reliability. This approach is used when items in the assessment instrument have more than two choices—such as a Likert scale. Cronbach's alpha is the equivalent to the average of all possible split-halves reliabilities of the same test (Gay & Airasian, 2003). Cronbach's alpha (Cronabch, 1951) can be calculated by the following equation

$$\alpha = \frac{k}{k-1}\left(1 - \frac{\sum_{i=1}^{k}\sigma_i^2}{\sigma_{scale}^2}\right)$$

Where *k* is the number of items, σ_i^2 is an item variance, and σ_{scale}^2 is the variance of the scale scores. Some assumptions are assumed to be met when calculating the Cronbach's alpha coefficient; violation of any of these assumptions my lead to either overestimation—such as in speed item tests, or underestimation—such as in violation of item equivalent assumption—on coefficient of internal consistency reliability of scores (Graham, 2006; Green & Hershberger, 2000; Maxwell, 1968; Miller, 1995; Zimmerman, Zumbo, & Lalonde, 1993).

Scorer/rater reliability. This reliability is concerned with the extent to which independent scorers, or a single scorer over time, agree on the scoring of an open-ended test. The most common method to calculate the scorer reliability is by dividing number of agreements over total number of agreements and disagreements, and then multiply the result by 100 (Gay & Airasian, 2003).

Standard error of measurement. Camara and Lane (2006) reported that the number of standards in the reliability chapter increased from 12 in the 1985 *Standards* to 20 standards in the 1999 *Standards*. The new American Educational Research Association, American Psychological Association, and National Council on Measurement in Education *Standards for Educational and Psychological Testing,* released in 1999, mentioned in the reliability chapter that "the standard error of measurement, both overall and conditional (if relevant), should be reported both in raw score or original scale units for each derived score recommended for use in test interpretation" (p. 31). The standard error of measurement can be estimated by multiplying the standard deviation of test scores with the square root of (1-r). From

that, we notice that the smaller the standard error of measurement, the higher the reliability of the assessment (Gay & Airasian, 2003).

Reliability coefficients. Researchers usually consider a reliability coefficient of more than .7 acceptable and the value .8 or more as adequate for newly established assessment instruments (Berdine & Meyer, 1987; Carmines & Zeller, 1979; Pierangelo & Giuliani, 2002). On the other hand, "when important decisions must be made about humans on the basis of test scores, even a reliability of .9 is not enough" (Nunnally, 1975, p. 4).

In conclusion, the higher the reliability coefficient, the better and the acceptable reliability coefficient values depend on the type of assessment, the reliability of similar assessments in literature, and the purpose of using the assessment. As an example, standardized assessments usually have higher acceptable reliability coefficients than personality measures. Also, reliability is a function of test length, which means longer tests are expected to have higher reliability coefficients. Finally, the more heterogeneous test scores of a group are, the higher the reliability coefficient.

Effect of Gender on Employment and Future Education Outcomes

When looking for postschool outcomes for students with disabilities, results from the National Longitudinal Transition Study-2 (NLTS2) could be considered the most generalizable resource that describes postschool outcomes for students with disabilities. This 10-year study started in 2001 and included 11,276 randomly selected students from all disability categories and across the United States. The design of the study provided a representative sample to allow for an acceptable level of generalization. Following are some of the findings from the third wave of the NLTS2

five waves related to employment and future post high school education for male and female students with disabilities up to four years after high school (Newman, Wagner, Cameto, & Knokey, 2009). Results from this study were for youth who were age 17 to 21 and were out of high school for less than one month to four years.

Employment. In general, results from year 2005 showed that youth with disabilities were 9 percent less likely to be employed than youth in the general population (57% compared to 66%; Newman et al., 2009). For youth with disabilities, results showed no significant differences between males and females in employment status at time of interview (62% males vs. 46% females) or since leaving high school (75% males vs. 65% females; Newman et al., 2009).

Related to job characteristics, data showed no significant differences between males and females with disabilities in the number of jobs held (3.0 for males and 2.6 for females) or average duration of jobs (9 months for males and 10 months for females; Newman et al., 2009).

Regarding to types of jobs, males with disabilities were more likely than females to hold skilled labor and gardening jobs (16% males vs. 0% females, $p < .001$). Males were also more likely than females to work in grounds maintenance jobs (9% males vs. 0% females, $p < .01$; Newman et al., 2009).

Results showed significant differences between the two genders in hours worked. 68% of males with disabilities worked full time compared to 35% females ($p < .001$). The average hours per week worked by males were 36 hours compared to 27 hours for females ($p < .01$). Results showed no significant differences between males and females with disabilities related to wages and benefits, job accommodations, job

satisfaction and perceptions of working conditions, or reasons for leaving previous jobs (Newman et al., 2009).

Future Education. Results showed that approximately 45% of youth with disabilities compared to 53% of youth from the general population responded they had taken any classes in postsecondary school within four years of leaving high school ($p <$ .001). Youth with disabilities showed no significant differences in secondary school enrollment related to gender (43% males vs. 49% females).

Newman et al. (2009) reported no significant differences related to gender in the period of time between leaving high school and enrollment (4.7 months for males vs. 5.4 months for females). They also reported no significant differences related to gender in the intensity of enrollment in post school education as measured by percentage of steady enrollment during the school year (84% for males vs. 90% for females) or percentage of fulltime enrollment (73% for males vs. 68% for females).

Results showed no significant differences related to gender in disclosure of disability (36% males vs. 39% females) and in accommodations received in postsecondary school because of disability (25% males vs. 21% females). Results also showed no significant differences between males and females with disabilities in completion of postsecondary school with an overall low rate of completion of 29% out of the 89% who expressed an intention to complete their study (Newman et al., 2009).

Effect of Major Disability Groups on Employment and Future Education Outcomes

Based on results from the data collected in 2005 for NLTS2's wave three Newman, Wagner, Cameto, and Knokey (2009) analyzed post high school outcomes

for youth with disabilities up to four years after high school. Results from Newman et al. showed many differences in post high school outcomes related to disability categories. Following are some of the findings in employment and post secondary education outcomes related to disability categories. The importance of the NLTS2 study came from the fact that it included a representative sample of more than 11,000 participants from the population of youth with disabilities in the U.S.

Employment. Results from Newman et al. (2009) showed that approximately 56.8% of youth with disabilities compared to 66.4% of their peers without disabilities were employed at the time of collecting the data. Approximately 71.9% of youth without disabilities reported that they had been employed since high school, which means that 15.1% of youth with disabilities had the opportunity to be employed since leaving high school, but were unsuccessful in maintaining their employment.

Youth from different disability categories showed different employment experiences within the first four years after leaving high school. Some of the differences in percentages were statistically significant. Following are percentages of employment at time of interview and percentage employed since high school for each disability category, respectively: learning disabilities (64, 77), speech/language impairment (58, 73), intellectual disabilities (31, 52), emotional disturbances (42, 63), hearing impairments (54, 66), visual impairments (43, 60), orthopedic impairments (27, 40), other health impairments (68, 80), autism (47, 66), traumatic brain injury (43, 63), multiple disabilities (49, 50), and deaf-blindness (-, 51; Newman et al., 2009).

For being employed at the time of data collection, results showed that youth with orthopedic impairment had the lowest employment percentages (27%), followed

by youth with intellectual disabilities (31%), then youth with emotional disturbance (42%). On the other hand, youth with other health impairments were most likely to be employed at the time of data collection (68%), followed by youth with specific learning disabilities (64%), then youth with speech/language impairments (58%; Newman et al., 2009).

For being employed at some point within the last four years, youth with orthopedic impairment were the lowest to be employed at some point within the last four years (40%), followed by youth with multiple disabilities (50%), then youth who are deaf-blind (51%). On the other hand, youth with other health impairments were the most likely to be employed at one point in the last four years (80%), followed by youth with specific learning disabilities (77%), then youth with speech/language impairments (73%; Newman et al., 2009).

For number of jobs that had been held within the last for years, results for youth from different disability categories showed significant differences due to disability category. Following are the average number of jobs the youth had held for each disability category: learning disabilities (2.9), speech/language impairment (2.7), intellectual disabilities (2.1), emotional disturbances (3.4), hearing impairments (2.0), visual impairments (1.9), orthopedic impairments (1.6), other health impairments (2.8), autism (1.7), traumatic brain injury (2.1), and multiple disabilities (3.4; Newman et al., 2009).

Results of average number of jobs youth with disabilities had held within the last four years showed that youth with emotional disturbance (3.4) or multiple disabilities (3.4) had highest average number of jobs compared to youth with

orthopedic impairments (1.6) or autism (1.7) who had the lowest average number of jobs.

For job duration, differences across disability categories were not statistically significant, and ranged from an average of eight months for youth with emotional disturbance to 16 months for youth with multiple disabilities (Newman et al., 2009).

In general, results for type of jobs that youth from different disability categories were most likely to hold showed no significant differences, except for certain disability categories who showed more likelihood to hold specific type of jobs compared to other disabilities. As examples, youth with multiple disabilities showed more likelihood to be employed in cleaning jobs (42%) than most of the other disability categories, and youth with specific leaning disabilities showed more likelihood to be employed in skilled labor jobs (13%) than most of other disability categories. Youth with orthopedic impairment showed a high percentage (30%) to be employed in clerical, computer support, or financial services (Newman et al., 2009).

Youth from different disability categories showed different average hours worked per week. Youth with specific learning disability showed the highest average of hours worked per week (34.1 hours), and youth with autism showed the lowest average working hours per week (22.9 hours), after excluding youth who are deaf-blind. Youth from different disability categories who worked full time (at least 35 hours per week) showed statistically significant differences in percentages related to disability categories. Results showed that the highest percentages were for youth with specific learning disabilities (61.0%), followed by youth with other health impairments (59.5%), then youth with emotional disturbance (56.3%). Results also showed that the

lowest percentages for youth who held full time jobs excluding youth who are deaf-blind were for youth with autism (21.6%), followed by youth with visual impairment (22.5%), then youth with orthopedic impairment (37.9%). The hourly wage rate across disability categories ranged from $7 to $10 with no statistically significant differences. Also, benefits were similar across disability categories (Newman et al., 2009).

For job accommodations, results showed that youth with visual impairment were most likely to have their employer aware of their disabilities (64.5%), followed by youth with hearing impairment (60.2%), then youth with multiple disabilities (53.9%). On the other hand, youth with speech/language impairments were most likely not to have their employer aware about their disabilities (14.9%), followed by youth with specific learning disabilities (16.0%), then youth with emotional disturbance (18.2%). Youth with multiple disabilities were the highest to receive accommodations (31.0%), followed by youth with autism or visual impairment (15.6%), then youth with traumatic brain injury (12.9%). Conversely, youth with specific learning disabilities were the lowest to receive accommodations from their employers (1.0%), followed by youth with speech language impairment (1.5%), then youth with emotional disturbance (2.0%), after excluding youth who are deaf-blind (Newman et al., 2009).

In response to job satisfaction questions, youth across different disability categories reported in majority that they like their jobs with no significant differences related to disability categories. Results also showed no significant differences related to disability categories in reasons for leaving a previous job or job search activities (Newman et al., 2009).

Future Education. Attendance in post high school education programs varied with statistically significant differences across different disability categories. Percentages of youth with disabilities from different disability categories who attended any postsecondary school within the first four years after leaving high school varied from 27.4% for students with intellectual disabilities to 77.8% for students with visual impairments. Percentages for each disability category were as follows: learning disabilities (47.3%), speech/language impairment (54.6%), intellectual disabilities (27.4%), emotional disturbances (34.0%), hearing impairments (71.8%), visual impairments (77.8%), orthopedic impairments (53.7%), other health impairments (54.7%), autism (57.5%), traumatic brain injury (51.5%), multiple disabilities (35.2%), and deaf-blind (54.6%; Newman et al., 2009).

Results also showed different percentages of enrollment for each disability category in 2-year community college (average 32%), vocational, business, or technical school (average 23%), or 4-year school (average 14%). Percentages showed that enrollment was generally lower for 4-year school.

Rate of completion or work towards completion were the highest for youth who enrolled in vocational, business, or technical school (59%), followed by youth who enrolled in 2-year community college (18%), and were lowest for youth who enrolled in 4-year school (6%; about one tenth the rate of likelihood of completion in vocational, business, or technical school; Newman et al., 2009). Results also showed no statistically significant differences in likelihood of completion of secondary education diploma, certificate, or license related to disability categories for students who were enrolled in postsecondary education at the time of the study with percentages

ranging from 73% for students with multiple disabilities to 99% for students with speech/language impairments.

Youth with disabilities in post high school education varied with many statistically significant differences in (a) not considering self to have a disability, (b) considering self to have a disability and disclosed the disability to the post secondary school, and (c) considering self to have a disability and did not disclose the disability to the post secondary school. Percentages of the three groups by disability category were approximately as follows: learning disabilities (57, 36, and 8), speech/language impairment (73, 18, and 9), intellectual disabilities (40, 56, and 4), emotional disturbances (63, 21, and 16), hearing impairments (29, 65, and 6), visual impairments (17, 79, and 4), orthopedic impairments (31, 63, and 6), other health impairments (57, 38, and 5), autism (31, 55, and 14), traumatic brain injury (43, 52, and 5), and multiple disabilities (19, 79, and 2; Newman et al., 2009). These results showed that students from specific disability categories were more likely to disclose their disability than other disability categories (e.g., the students most likely to disclose disability were students with visual impairments 79% and the least likely were students with emotional disturbances 18%). Results also show no significant differences between students from different disability categories in the rate of the overall help received from the school.

Transition and Self-Determination Assessment Instruments

Researchers in the area of transition and self-determination have developed multiple transition and self-determination assessments to help in better understanding students' strengths, needs, and preferences. Some assessments also include assessing

the level of opportunities the student has to practice self-determination skills in school or home. Following is a description of some of these assessments.

AIR self-determination scale. The main purpose of the AIR self-determination scale (Wolman, Campeau, DuBois, Mithaug, & Stolarski, 1994) is to provide an easy-to-use tool to assess and develop strategies for improving a student's level of self-determination. Results from the AIR scale can be used to a) assess and develop a student self-determination profile, b) identify areas of strength and weakness, c) identify goals to be included in the student's IEP and transition plan, and d) develop strategies to build a student's capacities and opportunities to improve his self-determination level.

This scale is designed to be used with all school age students and the framework of the scale designed on three big self-determination components: a) thinking, where students identify and express their needs, interests, and abilities; b) doing, where students make choices and plans and take actions; and c) adjusting, where students evaluate results and change plans and actions. The scale provides a student's self-determination capacity in knowledge, abilities, and perceptions; and opportunity in school and home. The AIR scale has student, parent, and educator forms. The form consists of five sections with six items in each section. A five-point Likert scale is used and responses can be presented graphically. For the educator version, an alternative-form reliability for the scale ranged from .91 to .98; the split-half reliability was .95 and the test-retest reliability after three months was .71. The first two reliabilities are high and provide confidence to use this scale, and the test-retest reliability is acceptable when considering the three-month time interval between the two tests.

Although this assessment's development steps showed sound expert and professional evaluations, no reliability coefficients are provided for student or parent versions. Also, the confirmatory factor analysis study conducted by Shogren, Wehmeyer, Palmer, Soukup, Little, et al. (2008) shows no data support for the educator version. The data supported only the student version and this makes us question the construct validation of the educator version. It also makes us questioning the construct validation of other assessment instruments that have no confirmatory factor analysis studies conducted to provide construct validity-related evidence through data support of their theoretical model.

ChoiceMaker self-determination assessment. The ChoiceMaker self-determination assessment (Martin & Marshall, 1996) is a curriculum-based assessment that can be used to assess student self-determination and build an instructional self-determination plan to improve students' knowledge and skills in the related areas. This assessment consists of three parts starting with administrating the assessment, then preparing the assessment profile, and finally designing an instructional plan using the curriculum matrix. The assessment is designed to be used with middle to high school students with emotional or behavior disabilities and mild to moderate learning disabilities. Students answer 51 items distributed over three sections—choosing goals, expressing goals, and taking action—on a five-point Likert scale. In the first section, the student rates his interests, skills and limits, and goals on student skills and school opportunity. In the second section, the student rates items related to leading his meeting and reporting. In the third section, the student rates items related to plan, action, evaluation, and adjustment skills and opportunities. When the test was repeated

two weeks later, multi-state test-retest reliability was significant with a value of .8 or more. This value shows consistency of assessment results and is considered to be high for this type of assessment.

Transition Planning Inventory-updated version. The Transition Planning Inventory updated version (TPI-UV) was first published in 1997 and later updated in 2006. It is a formal assessment and planning tool for use with students with disabilities in individualized educational planning. It focuses on the major area of transition services planning that has emerged in literature and from legislation in recent years. It is a general screening instrument used for assessing students' current knowledge and skill performance in a wide range of areas related to adult demands and expectations (Clark & Patton, 2006). The TPI's 46 items cover nine different planning areas: Employment, further education/training, daily living, leisure activities, community participation, health, self-determination, communication, and interpersonal relationships. Also, the user can add additional planning areas. The rating scale includes NA for "not appropriate" and DK for "don't know" besides the six-point Likert scale. School, home, and student versions provide the opportunity to involve the family in their child's transition planning process.

Clark and Patton mentioned several studies conducted to establish validity and reliability confidence for the TPI English and Spanish versions (Clark & Patton, 2006; Smith, 1995). They conducted internal and test-retest analyses to ensure the consistency. They also did a targeted group analysis for criterion validity. Cronbach's alphas were equal or more than .90 for 18% of domains, between .80 and .89 for 52% of domains, and between .70 and .79 for 30% of domains. On the test-retest reliability

with seven to ten days between the two administrations, reliability coefficients ranged from .70 to .98 for different domains and versions. The overall averages of the coefficients ranged from .80 to .89 for all domains. According to the authors, these values represent evidence that the TPI is a consistent assessment. From my point of view, the time between the test and retest should be longer and the sample size should be bigger. On the other hand, number of items per domain is relatively small and this adds to the reliability considering the effect of length of assessment on reliability values where small number of items makes it difficult to have high reliability coefficients. In the validity issue, the authors reported their procedure to ensure content validity. A criterion-related validity shows promising results and a need for more criterion studies.

These values are considered to be acceptable to strong due to the small number of items in each domain. Also, an additional study demonstrated translation integrity and reliability for the Spanish version (Stevens, 2006). The TPI is also available in a computer version where the user can hear the item read for him.

Casey Life Skills. The Ansell-Casey Life Skills Assessment (ACLSA), or Casey Life Skills, contains free comprehensive online assessments, learning plans, and learning resources. They are strengths-based tools consisting of statements about important life skills domains for successful adult life. The additional assessment supplements are designed to help individuals from special groups, such as pregnancy and parenting, homeless, and American Indians. The user can use the Life Skills Learning Guide to create a learning plan.

Youth and caregivers could work together to identify areas that need improvement across nine life skills domains—career planning, communication, daily living, home life, housing and money management, self care, social relationships, work life, and work and study skills. The secure Database holds hundreds of thousands of score reports since 2005. Users can receive progress reports and compare their scores to average scores of other youth belonging to similar demographics. Also, the user can utilize the option of the paired t-test statistical function to compare data from two points. Casey Life Skills allows users to choose from four different levels appropriate for different ages and includes increasing numbers of questions by increasing age (e.g., ages 8-9, 39 questions; ages 10-12, 60 questions; ages 13-15, 87 questions; and ages 16 and up, 121 questions), or they can choose the short version of 20 questions for ages 11-18 years. The Casey Life Skills assessments are available in Spanish and French versions.

Transition Assessment and Goal Generator TAGG. McConnell, Martin, Juan, Hennessey, Terry et al. (2012) developed a ten construct transition assessment to measure a set of non-academic behaviors that are associated with positive postschool outcomes for students with mild to moderate disabilities. The TAGG initial draft (Martin, Hennessey, McConnell, Terry, El-Kazimi et al., 2012a) consisted of 75 items and has Professional, Family, and Student versions. The development team designed the TAGG items to be rated on a five-point scale for Professional and Family TAGG versions and a three-point scale for the Student TAGG version. Nine out of the 75 items were Yes/No response items (see Appendix A). The development team designed the three versions to be parallel and written on age-appropriate reading levels. The

TAGG's initial ten constructs were (a) knowledge of strengths and limitations, (b) actions related to strengths and limitations, (c) disability awareness, (d) persistence, (e) proactive involvement, (f) goal setting and attainment, (g) employment, (h) self-advocacy, (i) supports, and (j) utilization of resources.

The confirmatory factor analysis (CFA) of the 75-item TAGG (Martin, Hennessey, McConnell, Terry, El-Kazimi et al., 2012b) resulted in an updated 34-item TAGG and eight constructs instead of ten for the Professional and Family TAGG versions. The two deleted constructs were (a) actions related to strengths and limitations, and (b) utilization of resources (see Appendix B). For the Student TAGG version, the CFA resulted in seven constructs out of the ten. The same two deleted constructs from the professional and family versions were also deleted from the student TAGG version, and the two constructs (a) Knowledge of Strengths and Limits and (b) Supports collapsed to form a single construct.

The internal consistency of the 34-item Professional, Family and Student TAGG as measured by Cronbach's coefficient alpha on the overall scale scores were highly reliable ($\alpha_{professional} = .95$, $\alpha_{family} = .94$, $\alpha_{student} = .89$). Test-retest measure of stability of total TAGG scores across the three versions and over an elapsed period of approximately 13.7 weeks between the two administrations yielded statistically significant ($p < .01$) correlations of .80, .70, and .70 for 102 professional, 92 family, and 102 student TAGG scores, respectively (Martin et al., 2012b).

The purpose of this study was to explore the influence of disability and gender on professional, family, and student TAGG's full and domain (construct) scores. Results from this study extended the knowledge about differences and similarities

between males and females, and differences and similarities of different disability categories as resulted from TAGG scores across the Professional, Family, and Student TAGG versions. This study also provided validity-related evidence to support the validity of the TAGG based on the examination of the influence of gender and disability variables on the TAGG scores.

Research Questions

The purpose of this study was to explore the influence of disability and gender on the Professional, Family, and Student TAGG full and domain scores. The general research questions for this study were:

1. What is the influence of student's gender on the overall variation on the Professional, Family, and Student TAGG full scores?
2. What is the influence of student's gender on the Professional TAGG full scores?
3. What is the influence of student's gender on the Professional TAGG domain scores?
4. What is the influence of student's gender on the Family TAGG full scores?
5. What is the influence of student's gender on the Family TAGG domain scores?
6. What is the influence of student's gender on the Student TAGG full scores?
7. What is the influence of student's gender on the Student TAGG domain scores?
8. What is the influence of student's disability on the overall variation on the Professional, Family, and Student TAGG full scores?
9. What is the influence of student's disability on the Professional TAGG full scores?

10. What is the influence of student's disability on the Professional TAGG domain scores?
11. What is the influence of student's disability on the Family TAGG full scores?
12. What is the influence of student's disability on the Family TAGG domain scores?
13. What is the influence of student's disability on the Student TAGG full scores?
14. What is the influence of student's disability on the Student TAGG domain scores?

CHAPTER TWO
Methodology

This quantitative study explored the influence of gender and disability on Professional, Family, and Student TAGG scores utilizing multivariate analysis of variance as an appropriate technique to test variation accounted for by independent variable(s) over multiple dependent variables with the ability to ask for a post hoc (Tabachnick & Fidell, 2007). Analyses in this study tested how gender and disability accounted for variation on the TAGG scores at three levels: (a) the overall three versions score, (b) each of the three versions full scores, and (c) each of the three versions domain scores. This study consisted of 14 general research questions that were designed to explore how student's gender and student's disability accounted for variation in the TAGG full scores for the three versions, and TAGG domain scores per version. More specifically, I explored how student's gender and student's disability accounted for variation on the TAGG scores from the perspective of professionals, family members, and students. The research questions are listed below:

1. Does student's gender account for an overall variation in the Professional, Family, and Student TAGG full scores?
2. Does student's gender account for variation in the Professional TAGG full scores?
3. Does student's gender account for variation in the Professional TAGG domain scores?
4. Does student's gender account for variation in the Family TAGG full scores?

5. Does student's gender account for variation in the Family TAGG domain scores?
6. Does student's gender account for variation in the Student TAGG full scores?
7. Does student's gender account for variation in the Student TAGG domain scores?
8. Does student's disability account for an overall variation in the Professional, Family, and Student TAGG full scores?
9. Does student's disability account for variation in the Professional TAGG full scores?
10. Does student's disability account for variation in the Professional TAGG domain scores?
11. Does student's disability account for variation in the Family TAGG full scores?
12. Does student's disability account for variation in the Family TAGG domain scores?
13. Does student's disability account for variation in the Student TAGG full scores?
14. Does student's disability account for variation in the Student TAGG domain scores?

Data Source

This study used extent SPSS electronic data collected by the development team of the Transition Assessment and Goal Generator project at the University of

Oklahoma (Martin et al., 2012a). The author of this study was a member on this team and the team used this electronic data source in other studies such as Martin et al. (2012b). Thus, readers will notice similar descriptions for the sample, procedures, and assessment development across these studies.

Participants

Data included in this study came from a sample of 349 students with disabilities, their 271 family members, and 39 special educators who participated in Phase I of a multi-phase, multi-year project (7/2010 - 6/2014) during the spring and fall of 2011. A team of researchers from the University of Oklahoma is conducting this project, funded by a grant from the U.S. Dept. of Education, Institute of Education Sciences, National Center for Special Education Research, grant award number R324A100246, to develop and validate a transition assessment. This assessment is currently known as the Transition Assessment and Goal Generator (TAGG). This 659-individual sample came from seven states. Table 1 depicts state names and how many students, family members, and professionals participated per state.

Recruitment. The TAGG development team used email to recruited transition education professionals. The team collected the contact information from lists of participants who attended transition education in-service workshops in seven states: Arkansas, Colorado, North Carolina, New Mexico, Oklahoma, Rhode Island, and Wisconsin. The team sent recruitment emails to 689 transition professionals. Only 586 email addresses were working addresses and 104 professionals replied with intention to participate in the study. The team sent a second email to the 104 professionals including an electronic link to online training video. The email requested recipients to

watch the 15-minute training video to learn more about the research project, their roles, responsibilities, administration instructions, and the honorarium for participating in the study. This training video also included instructions on what to do next for those interested in participating. Only 57 out of the 104 professionals followed the instructions and emailed their school mailing address after viewing the training video. This indicated three things: (a) they watched the training video, (b) they are involved in transition planning for students with mild to moderate disabilities 14 to 21 years old, and (c) they wanted to participate in this research project.

The team sent study packets via mail to the 57 professionals and only 39 professionals ended up participating in the study. Different reasons such as cancelation of school days due to bad weather, inability to get school administration permission, or illness kept the rest of the 57 professionals from participating.

Table 1

Number and Percentage of Participants Per State

State	Student		Family		Professional	
	n	%	*n*	%	*n*	%
Arkansas	90	25.8	62	22.9	12	30.8
Colorado	111	31.8	102	37.6	15	38.5
New Mexico	28	8.0	24	8.9	3	7.7
North Carolina	12	3.4	12	4.4	2	5.1
Oklahoma	26	7.4	17	6.3	2	5.1
Rhode Island	17	4.9	14	5.2	2	5.1
Wisconsin	65	18.7	40	14.8	3	7.7
Total	349	100	271	100	39	100

Professional demographics. Most of the 39 participating professionals were females (37, 94.9%), and the average age of the whole group at the time of the study was 47 years with a standard deviation of 10.2 years. About three-fourths of the

participating professionals were Caucasian (76.9%), with 12.8% African American, and 5.0% noted Hispanic. Table 2 provides more details on professional ethnicity. Twenty-seven professionals were special education teachers (69.2%), and nine worked as transition specialists (23.1%). The average years experience teaching students with disabilities was more than 15 years (M = 16.1, SD = 10.9) with certification in special education for most of them (84.6%). Table 2 presents additional professional demographics.

Table 2

Professional Demographics Details

Characteristic (N = 39)	*n*	%
Gender		
Male	2	5.1
Female	37	94.9
Highest Level of Education		
Bachelor's degree	5	12.8
Some Master's courses	8	20.5
Master's degree	19	48.7
Ed.S.	4	10.3
Some Ph.D. or Ed.D. courses	1	2.6
Ph.D. or Ed.D. degree	0	0
Missing	2	3.4
Ethnicity		
Caucasian	30	77
African American	5	13
Hispanic	2	5
Multi-ethnicities[a]	2	5
Position[b]		
Job Coach	2	5.1
Rehabilitation Counselor	1	2.6
School Psychologist	2	5.1
Special Education Director	1	2.6
Special Education Teacher	27	69.2
Transition Specialist	9	23.1
Other[c]	7	17.9

Grade Level Taught[d]		
Below 9th grade	6	15.4
9th grade	25	64.1
10th grade	29	74.4
11th grade	32	82.1
12th grade	38	97.4

[a]Multi-ethnicities includes Caucasian/American Indian or Alaska Native, and African American/Mexican.
[b]Professional can have more than one position at the same time.
[c]Other includes Teacher on Special Assignments, Drop Out Prevention, SPED Coordinator, School to Work Alliance (SWAP) Program Coordinator, Pre-K Coordinator & Alternative Learning Environment (ALE) Supervisor, Special Education Program Manager, and EC Chairperson.
[d]Professional can teach more than one grade at the same time.

Family demographics. The average age of the family members who participated in this study was 44.6 years (*SD* = 8.6) and most (97.8%) of the family members indicated that the students lived with them. Out of the 271 participating family members, 215 were mothers or stepmothers (80%), 30 were fathers or stepfathers (11%), and only 12 were grandparents (4%). Nearly 95% of family members indicated speaking English as the primary language at home. About 86% of the family members had a high school diploma or higher degree. Less than 10% of family members reported getting help from someone to complete the forms. Table 3 presents more demographics details on family members.

Table 3

Family Demographics Details

Characteristic (*N* = 271)	*n*	%
Relationship to the Student		
Mother or Stepmother	215	79.3
Father or Stepfather	30	11.1
Grandmother	10	3.7
Grandfather	2	0.7
Legal female guardian	3	1.1
Legal male guardian	4	1.5
Other	5	1.8

Missing	2	0.7
Marital status		
Married	166	61.3
Living with a partner	9	3.3
Single	28	10.3
Divorced	44	16.2
Separated	15	5.5
Widowed	8	3.0
Missing	1	0.4
Work Status		
Employed full-time	127	46.9
Employed part-time	28	10.3
Self-employed full-time	6	2.2
Self-employed part-time	4	1.5
Employed and self-employed	5	1.8
Not working	81	29.9
Retired	19	7.0
Missing	1	0.4
Ethnicity		
Caucasian	185	68.3
African American	28	10.3
American Indian	8	3.0
Mexican	7	2.6
Hispanic	16	5.9
Other or Multi-ethnicities	19	7.0
Missing	8	3.0
Highest Level of Education		
Less than high school diploma	39	14.4
High school diploma or GED	119	44.0
Vocational or technical certification	21	7.7
Associate's degree	31	11.4
Bachelor's degree	33	12.2
Master's degree	12	4.4
Doctorate or other Professional degree	5	1.8
Missing	11	4.1

Student demographics. The 349 students (about 54% males and 46% females) who participated in this study had an average age of 17.1 years (*SD* = 1.4) at the time

of the study and all were enrolled in special education programs and came from 33 high schools. The majority of the students (213 students, 61%) were students with Specific Learning Disability, followed by 41 students (11.7%) with Intellectual Disability. About 56% received free or reduced lunch and less than 2% were considered English Language Learners at the time of the study. About 70% reported having mild to moderate disability and only 58 students (17%) reported having a secondary disability. Table 4 presents additional student characteristics. The largest number of students had learning disabilities as the primary disability, and most had mild to moderate disabilities.

Table 4

Student Demographics Description

Characteristic ($N = 349$)	*n*	%
Gender		
Male	187	53.6
Female	159	45.6
Missing	3	0.9
Grade		
9th grade	42	12.0
10th grade	90	25.8
11th grade	94	26.9
12th grade	120	34.4
Missing	3	0.9
Primary Disability		
Autism	12	3.4
Emotional Disturbance	17	4.9
Hearing Impairment	1	0.3
Intellectual Disability	41	11.7
Multiple Disabilities	10	2.7
Orthopedic Impairment	5	1.4
Other Health Impairment	35	10.0
Specific Learning Disability	213	61.0
Speech or Language Impairment	3	0.9

Traumatic Brain Injury	3	0.9
Visual Impairment	1	0.3
Other	4	1.1
Missing	4	1.1
Disability Level		
Mild to Moderate	244	69.9
Severe to Profound	20	5.7
Missing	85	24.4
Receive Free or Reduced Lunch		
Yes	194	55.6
No	116	33.2
Missing	39	11.2
Ethnicity		
Caucasian	229	65.6
African American	60	17.2
American Indian	11	3.2
Mexican	11	3.2
Hispanic	21	6.0
Other or Multi-ethnicities	13	3.7
Missing	4	1.1

Honorarium for Participating

To encourage participation in the study, professionals received $30 for each of their students that participated in the study to compensate for the additional time spent collecting demographic and academic information, facilitating family consent and student assent, and answering family questions. Family members and students each received a $10 gift card for participation.

School Settings

Students who participated in this study came from 30 schools and three specialized service programs across Arkansas, Colorado, North Carolina, New Mexico, Oklahoma, Rhode Island, and Wisconsin. The smallest school enrollment was 70

students and the largest was 2,437 students, and 54% of the schools in this study had more than half their student population qualify for free and reduced lunch.
About 63% of schools' student population were White, 18% Hispanic, and 15% Black. Of the 28 schools that publically reported scores on End of Year exams, 30% of the schools reported that more than half their student populations scored at the proficient level or above in math and 42% of the schools reported that more than half of their student populations scored at the proficient level or above in literacy. See Martin et al. (2012b) for more details on school settings.

TAGG Development

Martin et al. (2012a) took the constructs and behavior lists delineated by McConnell and colleagues (2012) and through an iterative process developed the items, rating scales, and instructions for the Professional, Student, and Family TAGG versions. Across numerous drafts the items were written, revised, and then re-written. Rating scales and administration instructions were developed, and then revised. The research team, comprised of experienced transition educators, assessment development experts, and parents of students with disabilities reviewed the draft assessments, checked items for understanding, and matched each item to the research that supported its inclusion in the assessment to ensure that the intent expressed in the wording remained true to the research that supported the item's inclusion in the assessment.

Professional TAGG. The Professional TAGG version was developed first and it went through 17 iterations. The first version contained 83 items and after refinement, the tested 17th draft had 75 items. The 75 items were organized in a logical sequence by the intent of the behavior or experience into constructs, with construct definitions

preceding the items assessing that construct. Sixty-six of the 75 items had a 5-point Likert-type scale and the instructions asked the professional to rate students' behaviors over the last year, where a score of one meant the student rarely performed the action or behavior, and five meant the student often performed the action or behavior. The remaining nine items required a simple yes or no answer.

Student TAGG. Across 10 drafts, the Student TAGG version was developed using the same items initially included in the Professional TAGG, and revised in lock-step fashion with the Professional TAGG. The wording of the Professional TAGG was revised to be student friendly, written in first person, and revised to keep the reading level below the 5th grade, and the final 75-item 10th draft had a 4.2 grade Flesch-Kincaid reading level. A three-point scale was used to evaluate 66 items, and instructions requested students to mark a box to indicate if they rarely, sometimes, or often did the behavior or experience noted in each item during the past year. Nine items required a simple yes or no answer. Unlike the Professional TAGG, the Student TAGG version did not include construct names or definitions. Instead, the items were presented in alternating lightly shaded rows, grouped in 15 groups of five items per group, with white space between the groups.

Family TAGG. Concurrent with the development of the Student TAGG, the Family TAGG was developed using the same items included in the Professional TAGG, and it was revised in 10 drafts as the Professional TAGG was improved. Each item began with the stem "My child (followed by a verb) . . ." The Family TAGG used a 5-point Likert-type scale for 66 items, and required a yes or no response for nine items. The instructions asked parents to think about their child's behavior over the past

year and rate how well each statement reflected what their children had done. Each number of the 1 to 5 rating system was also explained in the overall instructions. The final 75-item assessment had a 5.4 grade Flesch-Kincaid reading level. As with the Student TAGG, the items were presented in alternating lightly shaded rows and grouped in 15 groups of five items per group.

Procedures

Educator instruction. Participating educators completed four different tasks to inform them of the research project details and their roles and duties. First, they watched a 15-minute video that explicitly described their roles and duties. Next, educators read a consent form that highlighted their primary duties. Third, they received a cover letter and a step-by-step instruction sheet. Last, they completed a self-evaluation checklist to monitor completion of all tasks.

Educator duties. The educators completed eight primary tasks: (a) obtained principals' signed agreement for educators and students to participate in the study, (b) facilitated parental consent for family members and their student to participate, (c) completed educator demographic form, (d) completed student demographic form for each participating student, (e) completed the Professional TAGG for each participating student, (f) administered the Student TAGG to each participating student, (g) facilitated completion of the Family TAGG, and (h) mailed completed materials back to the research center.

Completion of demographic forms. Participating educators completed an Educator Demographic form that asked basic identifying information, highest education level, position, certifications, and other similar questions. Participating

educators also completed a Student Demographic form for each of their students involved in the study. The educators provided information, including students' gender, age, grade, ethnicity or race, information about the students' schedule, disability, and other similar data. Participating educators facilitated completion of a Family Demographic form that asked the family members to identify their relationship to the student and provide basic identifying information.

Administration of the Student TAGG. Participating educators administered the Student TAGG individually or in groups to the students involved in the study and provided needed accommodations and support. Before students began answering the TAGG questions, educators explained the purpose of the assessment and the directions for completion. They also told the students they could take as much time as needed, and encouraged students to ask questions. During administration educators encouraged students to think before responding to each item and to complete unanswered items if they chose.

Administration of the Family TAGG. Each family was given a cover letter that explained the purpose of the Family TAGG, told them about the $10 gift card, and asked them to return the completed assessment to their student's educator. Family members were instructed to reflect on their child's behavior and experiences over the last year to respond to items. Participating educators facilitated completion of the Family TAGG by answering questions and collecting responses. Most family members completed the Family TAGG at home with only a few completing it at school. Family members were encouraged by their child's teacher to ask for support as needed as they completed the Family TAGG.

Fidelity of Administration and Data Entry

Educator self-evaluations. Along with a set of instructions for administering study materials, educators were asked to complete an administration checklist each time they administered the TAGG. Teachers responded to seven yes or no questions indicating whether they implemented each step in the administration process. Seventy-seven percent of the teacher participants returned a total of 88 useable teacher fidelity self-evaluation checklists. The total number of "yes" responses to each of the steps was compared to the total number of procedures the educators were asked to complete. Overall, teachers reported implementing 98.8% of the administration instructions (range of 86% - 100%).

Educators also reported on the administration procedures for group and individual administrations of the Student TAGG. They returned 38 self-evaluation checklists for group administrations. During group administrations, teachers reported having followed the administration procedures 97.7% of the time (range of 86-100%). Educators returned 50 self-evaluation checklists for individual Student TAGG administrations. During individual administrations, teachers reported having followed the administration procedures with 100% accuracy.

Observation of Student TAGG administration. We used a random number generator to randomly choose 10 participating educators to observe administering the Student TAGG in three states (Random.org, 2012). Project staff observed 39 students completing the TAGG at their schools with the special educator administering the assessment. The observation checklist was similar to the fidelity self-checklist each educator completed during administration of the Student TAGG. Of the 10 observed

administrations of the Student TAGG, educators implemented 98.6% of the TAGG administration instructions. Comparison of the observers' evaluation to five completed educator self-evaluations yielded an agreement of 97%. Only one disagreement occurred between the observer and special educator concerning whether the directions were read. The observer noted that the test administrator explained how to complete the assessment, but did not read the stated directions to the students.

Data-entry. Two researchers independently entered and checked the entire data set using original data sheets. The percent agreement between the two researchers was 99.6% and disagreements were resolved using a consensus decision-making process at weekly research team meetings.

Transition Assessment and Goal Generator (TAGG) Domains

McConnell et al. (2012) reviewed the qualitative and quantitative transition research literature that identified non-academic student behaviors and experiences associated with post high school employment and education success and built 10 behavioral constructs and exemplar lists of behaviors. Martin et al. (2012b) conducted confirmatory factor analyses (CFA) to examine the constructs of the TAGG. The CFA revealed eight domains for the Professional and Family TAGG versions after deleting the "Actions related to strengths and limitations" and the "Utilization of Resources" domains. The CFA revealed seven domains for the Student TAGG version after deleting the same two domains as in the other two versions, and combining the "Knowledge of Strengths and Limitations " and the "Supports" domains together. A description of the original 10 constructs from Martin et al. (2012b) follows.

Knowledge of strengths and limitations. Successful students know their personal areas of mastery and limited ability in academic and non-academic situations. Students may not use correct terminology, but can describe their strengths and limitations. Students know how the strengths and limitations affect them, and students identify situations in which successes and failures may occur.

Actions related to strengths and limitations. Successful students seek situations to use their strengths while minimizing their limitations. Students build upon personal strengths to compensate for limitations, and they look for situations, create new strategies, or change a situation to use personal strengths and minimize weaknesses or limitations. Less successful students tend to make choices without considering weaknesses.

Disability awareness. Successful students know they have a disability and can express their needs to others in a non-stigmatizing manner. Students demonstrate knowledge of the disability and can express positive and negative aspects. They express information such as how their disability affects life and what supports are needed and legally allowed to compensate in various situations. Students needs to be able to place the disability within the context of his or her life and is not defined by the disability.

Persistence. Persistent students have a belief in their own ability to overcome adversity. Indications of persistence may include spending ample time or effort to reach a goal. Students may also modify strategies as needed to stay on a task, and accept failure as an opportunity to learn to succeed.

Proactive involvement. Successful individuals effectively interact with family, friends, classmates, educators, and other adults while participating in school organizations or in community social organizations.

Goal setting and attainment. Goal-oriented students have set and attained goals in the past and can plan to set and attain goals now and in the future. Successful students set realistic goals that match their interests and skills, and break their long-term goals into manageable steps, continuously monitor their progress, problem-solve, use supports, obtain feedback, and adjust goals based upon feedback. Goal-oriented students tend to prioritize and complete smaller goals or steps in a logical order to achieve a larger goal.

Employment. Students who have had a paid job during high school, including in the summer or on weekends, have a greater likelihood of postschool success. Beneficial student behaviors include expressing a desire or need for a job, especially one matching interests and abilities.

Self-advocacy. Successful students look for and use various resources to learn more about their disabilities, legal rights, and supports or accommodations. They actively participate in or lead transition IEP meetings and are able to discuss their level of performance and academic plan in relation to their post-school goals, and students engage in discussions about their IEP goals, especially their transition goals.

Supports. Students with disabilities who have a support group tend to experience more post-school success. Successful students identify individuals who provide positive sources of support and recognize those who are not. Successful students identify when support is necessary, what type of support is needed, and seek

individuals and things both inside and outside their current support system for the needed support.

Utilization of resources. Successful students with disabilities use resources in their local communities for support and may look for individuals or things outside their immediate network for support in specific situations. Students use available resources to learn about possible support services or community agencies, and they actively look for assistance from appropriate community agencies.

Dependent and Independent Variables

In the current study, gender and primary disability category are considered the independent variables, and the TAGG full scores and domain scores are considered the dependent variables. Each research question included the appropriate dependent and independent variables needed to answer the question.

Statistical Analysis Tests

Multivariate analysis of variance (MANOVA) was utilized in this study to answer the research questions as an appropriate statistical analysis technique to explore simultaneously the influence of two or more groups (males and females), or multiple groups (several disability categories), on several dependent variables, such as the three TAGG versions, or the domains within each version (Stevens, 2002; Tabachnick & Fidell, 2007). Stevens (2002) recommended the use of MANOVA for these types of questions for the following reasons (a) avoid the inflation on the overall type I error that could result from using multiple univariate tests, (b) incorporation of correlations within the test statistics, (c) the ability to detect any overall statistical significant differences in some cases where no significant differences on the level of individual

variables occur and, (d) the ability to detect any statistically significant differences on the level of individual variable when the overall effect shows no statistically significant difference due to canceling out effect.

CHAPTER THREE
Results

Multivariate analyses of variance (MANOVA) and post hoc were utilized to explore the influence of gender and disability on TAGG scores for students with disabilities (Tabachnick & Fidell, 2007). The statistical analyses explored influence of gender and disability across the Professional, Family, and Student TAGG versions, and over TAGG full score and TAGG domain score levels. The following paragraphs describe the meaningful findings.

Gender Influence on TAGG Full Score Across the Three Versions

To answer research questions number one, two, four, and six, I ran a MANOVA with gender as the independent variable, and the Professional TAGG full scores, Family TAGG full scores, and Student TAGG full scores as the three dependent variables. The multivariate tests showed no overall significant differences between males and females across the three versions ($p = .172$, $\eta^2 = .019$, observed power = .438). Only Family TAGG full scores showed significant differences related to gender. The tests of between-subjects effects showed statistically significant difference in favor of females on the Family TAGG full scores ($p = .041$, $\eta^2 = 0.16$, observed power = .534). Numbers, means, and standard deviations for males and females on the family TAGG version were as follows: $N_{\text{male}} = 136$, $M_{\text{males}} = 103.0$, $SD_{\text{males}} = 23.6$, $N_{\text{female}} = 131$, $M_{\text{females}} = 108.7$, and $SD_{\text{females}} = 25.7$.

Gender Influence on TAGG Domain Scores Across the Three Versions

I ran a multivariate analysis with gender as the independent variable and domains of different versions as the dependent variables. I conducted the tests on

domains for each of the three TAGG versions separately and results showed an overall statistically significant difference on the Family and Student versions. Results also showed statistically significant differences on three domains from the Family version, one domain from the Student version, and one domain from the Professional version. Following is a description of these results.

Gender and Professional TAGG domain scores. To answer the research question number three, I conducted MANOVA tests with gender as the independent variable and the eight Professional TAGG domain scores as the dependent variables. The multivariate tests on the eight domains of the Professional TAGG version showed no significant differences between males and females on the overall level. On the domain level, the tests showed statistically significant differences in favor of males on the employment domain ($p = .048$, $\eta^2 = .011$, observed power = .506).

Gender and Family TAGG domain scores. To answer the research question number five, I conducted MANOVA tests with gender as the independent variable and the eight Family TAGG domain scores as the dependent variables. The multivariate tests on the eight domains of the Family TAGG version showed an overall significant difference related to gender ($p = .018$, $\eta^2 = .069$, observed power = .886). On the domain level, the tests showed statistically significant differences on three of the eight domains in favor of females. These three domains were (a) Knowledge of Strengths and Limitations ($p = .020$, $\eta^2 = .021$, observed power = .646), (b) Persistence ($p = .041$, $\eta^2 = .016$, observed power = .533), and (c) Self-Advocacy ($p = .046$, $\eta^2 = .015$, observed power = .515).

Gender and Student TAGG domain scores. To answer research question number seven, I conducted MANOVA tests with gender as the independent variable and the seven Student TAGG domain scores as the dependent variables. The multivariate tests on the seven domains of the Student TAGG version showed an overall significant difference related to gender (p = .041, η^2 = .046, observed power = .805). On the domain level, the tests showed statistical significant difference between males and female on the Self-Advocacy domain in favor of females (p = .032, η^2 = .015, observed power = .577). The other six domains showed no significant differences related to gender were p varied from .132 to .869, η^2 varied from <.001 to .007, and observed power varied from .053 to .326.

Findings from Newman, Wagner, Cameto, and Knokey (2009) on wave three data from the National Longitudinal Transition Study-2 (NLTS2) showed no significant differences related to gender on employment status, number of jobs held, average duration of jobs, wages, benefits, job accommodations, job satisfaction, secondary school enrollment, intensity of post secondary school enrollment, disclosure of disability, accommodation received in post secondary school, and completion of postsecondary school. On the other hand, Findings from Newman et al. (2009) showed significant differences related to gender in hours worked per week in favor of males and significant differences in type of jobs.

Disability Influence on Full Score of the Three TAGG Versions

Due to insufficient numbers of participants on each of the disability categories (see Table 4), only five disability categories were included in the current statistical analyses. Categories and number of students were as follows Autism (n = 12),

Emotional Disturbance (ED; n = 17), Intellectual Disability (ID; n = 39), Other Heath Impairment (OHI; n = 35), and Specific Learning Disability (SLD; n = 213).

To answer research questions number eight, nine, 11, and 13, I ran a MANOVA with disability category as the independent variable with five groups, and the Professional TAGG full scores, Family TAGG full scores, and Student TAGG full scores as the three dependent variables. The multivariate tests showed an overall statistically significant difference on the TAGG full scores across the three versions due to disability category ($p < .001$, $\eta^2 = .059$, observed power = .996). The tests of between-subjects effects showed statistically significant differences on each of the three versions, Professional TAGG version ($p < .001$, $\eta^2 = 0.102$, observed power = .993), Family TAGG version ($p < .001$, $\eta^2 = 0.084$, observed power = .974), and Student TAGG version ($p = .006$, $\eta^2 = 0.058$, observed power = .878). Table 5 depicts the means, standard deviations, and group sizes of the TAGG full scores across the three versions and disability categories.

These results from the current study agreed with findings from the NLTS2 wave three data (Newman, Wagner, Cameto, & Knokey, 2009) that showed several significant differences related to disability in post high school outcomes. In general, NLTS2 data showed that students with emotional disturbance performed lower than students with learning disabilities and student with other health impairments.

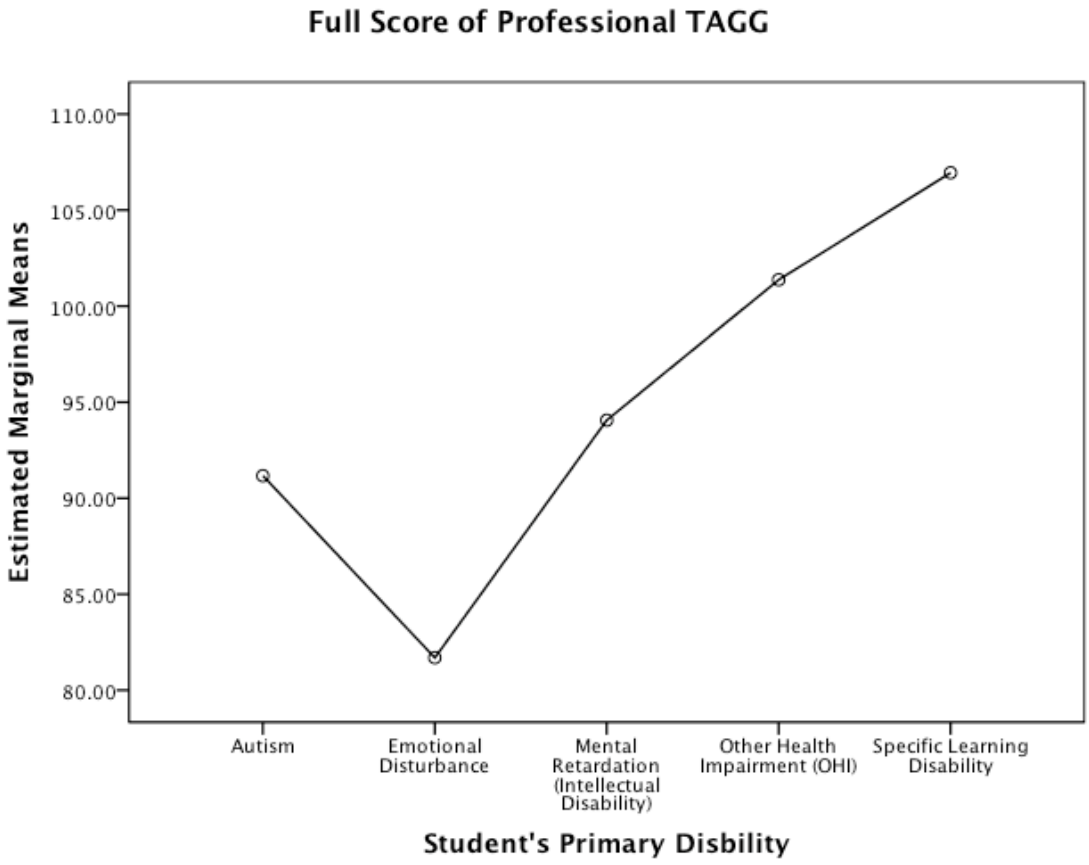
Table 5

Means and Standard Deviations of TAGG Full Scores by Disability Group

TAGG Full Score	Student's Primary Disability	*M*	*SD*	*n*
Professional	Autism	91.2	20.5	12
Version	Emotional Disturbance	81.7	19.6	13
	Intellectual Disability	94.1	23.7	32
	Other Health Impairment	101.4	24.9	27
	Specific Learning Disability	106.9	20.9	159
	Total	102.5	22.7	243
Family	Autism	89.1	18.5	12
Version	Emotional Disturbance	87.7	20.9	13
	Intellectual Disability	106.7	23.5	32
	Other Health Impairment	103.3	24.9	27
	Specific Learning Disability	111.1	23.4	159
	Total	107.3	24.1	243
Student	Autism	67.5	12.1	12
Version	Emotional Disturbance	72.4	11.3	13
	Intellectual Disability	71.6	11.5	32
	Other Health Impairment	77.1	10.5	27
	Specific Learning Disability	76.6	10.2	159
	Total	75.3	10.8	243

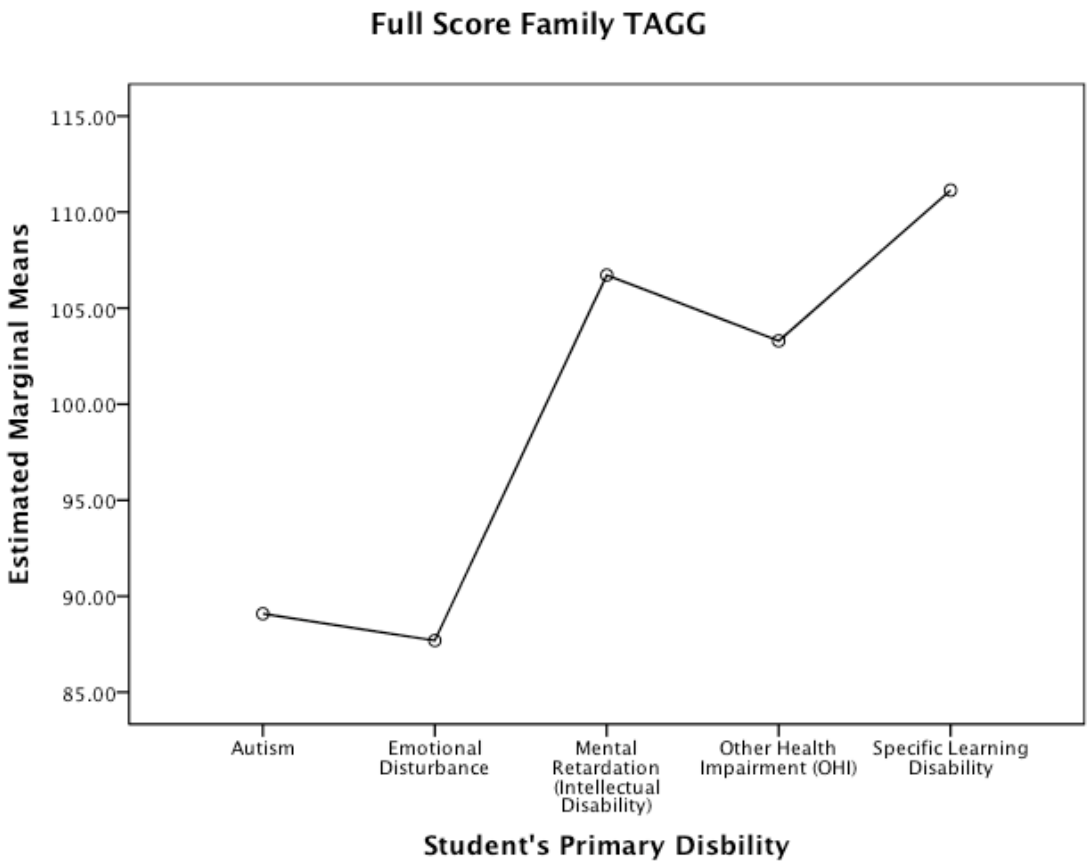
Disability and Professional TAGG full scores. To examine the differences between the pairs of disability categories on the Professional TAGG full scores (Figure 2), the post hoc Tukey test (Table 6) showed a statistically significant difference between the group of students with SLD and the group of students with ED ($p = .001$) in favor of SLD. Another statistically significant difference was between the group of students with SLD and the group of students with ID ($p = .020$) in favor of SLD.

Figure 2. *Means of Professional TAGG Full Score Across Different Disabilities*



Disability and Family TAGG full scores. To examine the differences between the pairs of disability categories on the Family TAGG full scores (Figure 3), the post hoc Tukey test (Table 6) showed a statistically significant difference between the group of students with SLD and the group of students with Autism (p = .015), and between the group of students with SLD and the group of students with ED (p = .005) in favor of SLD.

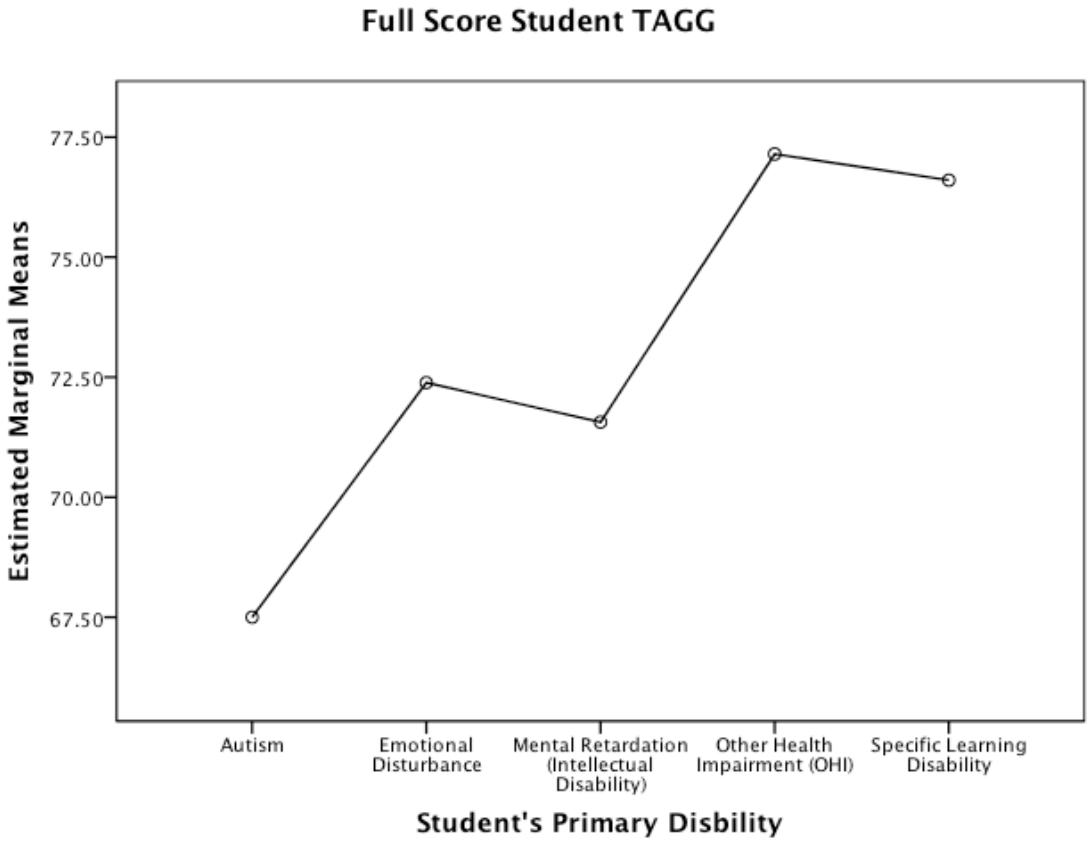
Figure 3. *Means of Family TAGG Full Score Across Different Disabilities*



Scores of students with intellectual disabilities in Figure 3 raises the question about family rating of their children with intellectual disabilities. Are they overestimating their children?

Disability and Student TAGG full scores. To examine the differences between the pairs of disability categories on the Student TAGG full scores (Figure 4), the post hoc Tukey test (Table 6) showed only one statistically significant difference between the group of students with SLD and the group of students with Autism (p =.035) in favor of the SLD group.

Figure 4. *Means of Student TAGG Full Score Across Different Disabilities*



Comparing Student TAGG full scores (Figure 4) with Professional TAGG full scores (Figure 2), and noticing the scores of the emotional disturbance group on both figures raises a question on the reasons behind the difference between professionals' and students' rating. Do students with emotional disturbance overestimate themselves?

Table 6

Mean Difference, Standard Error, and Confidence Interval of Disability Groups' TAGG Full Score for the Professional, Family, and Student Versions

TAGG Version	Disability groups		*Mean Difference*	*SE*	95% Confidence Interval	
					Lower Bound	Upper Bound
Professional	Autism	ED	9.5	8.7	-14.3	33.3
		ID	-2.9	7.3	-23.0	17.3
		OHI	-10.2	7.5	-30.9	10.4
		SLD	-15.8	6.5	-33.6	2.0
	ED	Autism	-9.5	8.7	-33.3	14.4
		ID	-12.4	7.1	-31.9	7.2
		OHI	-19.7	7.3	-39.8	0.4
		SLD	-25.3**	6.2	-42.4	-8.0
	ID	Autism	2.9	7.3	-17.3	23.0
		ED	12.4	7.1	-7.2	31.9
		OHI	-7.3	5.7	-22.9	8.2
		SLD	-12.9*	4.2	-24.4	-1.3
	OHI	Autism	10.2	7.5	-10.4	30.9
		ED	19.7	7.3	-.4	39.8
		ID	7.3	5.7	-8.2	22.9
		SLD	-5.6	4.5	-18.0	6.8
	SLD	Autism	15.8	6.5	-2.0	33.6
		ED	25.3**	6.2	8.1	42.4
		ID	12.9*	4.2	1.3	24.4
		OHI	5.6	4.5	-6.8	18.0
Family	Autism	ED	1.4	9.3	-24.2	27.0
		ID	-17.6	7.9	-39.3	4.0
		OHI	-14.2	8.1	-36.4	8.0
		SLD	-22.1*	7.0	-41.2	-2.9
	ED	Autism	-1.4	9.3	-27.0	24.2
		ID	-19.0	7.6	-40.0	2.0
		OHI	-15.6	7.8	-37.2	6.0

		SLD	-23.4**	6.7	-41.9	-5.0
	ID	Autism	17.6	7.9	-4.0	39.3
		ED	19.0	7.6	-2.0	40.0
		OHI	3.4	6.1	-13.3	20.1
		SLD	-4.4	4.5	-16.8	8.0
	OHI	Autism	14.2	8.1	-8.0	36.4
		ED	15.6	7.8	-6.0	37.2
		ID	-3.4	6.1	-20.1	13.3
		SLD	-7.8	4.8	-21.1	5.5
	SLD	Autism	22.1*	7.0	2.9	41.2
		ED	23.4**	6.7	5.0	41.9
		ID	4.4	4.5	-8.0	16.8
		OHI	7.8	4.8	-5.5	21.1
Student	Autism	ED	-4.9	4.2	-16.5	6.8
		ID	-4.1	3.6	-13.9	5.8
		OHI	-9.6	3.7	-19.7	0.4
		SLD	-9.1*	3.2	-17.8	-0.4
	ED	Autism	4.9	4.2	-6.8	16.5
		ID	0.8	3.5	-8.7	10.4
		OHI	-4.8	3.6	-14.6	5.1
		SLD	-4.2	3.1	-12.6	4.2
	ID	Autism	4.1	3.6	-5.8	13.9
		ED	-0.8	3.5	-10.4	8.7
		OHI	-5.6	2.8	-13.2	2.0
		SLD	-5.0	2.0	-10.7	0.6
	OHI	Autism	9.6	3.7	-0.4	19.7
		ED	4.8	3.6	-5.1	14.6
		ID	5.6	2.8	-2.0	13.2
		SLD	0.5	2.2	-5.5	6.6
	SLD	Autism	9.1*	3.7	0.4	17.8
		ED	4.2	3.1	-4.2	12.6
		ID	5.0	2.0	-0.6	10.7
		OHI	-0.5	2.2	-6.6	5.5

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

Disability Influence on Domain Scores across the Three TAGG Versions

Disability categories and Professional TAGG domain scores. To answer research question number 10, I conducted MANOVA tests with disability category as the independent variable and the eight Professional TAGG domain scores as the dependent variables. The multivariate tests on the eight domains of the Professional TAGG version showed an overall statistically significant difference between the five disability categories ($p = .002$, $\eta^2 = .047$, observed power = .997). On the domain level, the tests showed statistically significant differences on seven of the eight domains (Table 7). The only domain that showed no significant difference was Self-Advocacy.

Table 7

Disability Influence on Domain Scores of the three TAGG Versions

Domain	Profesional p (η^2) Power	Family p (η^2) Power	Student p (η^2) Power
Knowledge of Strengths and Limitations	.043 (.031) .708	.010 (.054) .846	.001 (.059) .942
Disability Awareness	.004 (.048) .901	.118 (.031) .560	.360 (.015) .343
Persistence	.001 (.061) .962	.002 (.069) .929	.343 (.015) .354
Proactive Involvement	<.001 (.112) >.999	.023 (.047) .775	.162 (.022) .505
Goal Setting and Attainment	<.001 (.063) .967	<.001 (.086) .976	.023 (.038) .777
Employment	.014 (.039) .882	.001 (.074) .949	.008 (.046) .858
Self-Advocacy	.223 (.018) .444	.007 (.058) .872	.032 (.036) .742
Support[1]	.033 (.033) .740	.014 (.051) .819	-

Note. [1]For Student TAGG version, the Support domain and Knowledge of Strengths and Limitations domain are presented under Knowledge of Strengths and Limitations domain.

An underline is used for p values less than .05. By convention, η^2 of .01, .06 and .14 are interpreted as small, medium, and large effect size, respectively (Cohen, 1988).

The post hoc Tukey test (Table 9) showed statistically significant differences between different pairs of disability categories across the following five domains (a) on the Disability Awareness domain, multivariate analysis tests showed a statistically significant difference between students with SLD and students with ED ($p = .011$) in favor of SLD; (b) on the Persistence domain, tests showed a statistically significant difference between students with SLD and students with ED ($p = .002$) in favor of SLD; (c) on the Proactive Involvement domain, multivariate analysis tests showed statistically significant difference between students with SLD and students with Autism ($p = .034$) in favor of SLD, students with SLD and students with ED ($p < .001$) in favor of SLD, students with ED and students with ID ($p = .002$) in favor of ID, and students with ED and students with OHI ($p = .007$) in favor of OHI; (d) on Goal Setting and Attainment, multivariate analysis tests showed a statistically significant difference between students with SLD and students with ED ($p = .022$) in favor of SLD, and students with SLD and students with ID ($p = .006$) in favor of SLD; and (e) on Support domain, multivariate analysis tests showed a statistically significant difference between students with SLD and students with ED ($p = .024$) in favor of SLD.

The post hoc Tukey test showed no significant difference between any specific pair of disability categories on the following three domains: Knowledge of Strengths and Limitations, Employment, and Self-Advocacy. Table 8 depicts means and standard deviations of different disability groups across Professional TAGG domain scores, and

Table 9 shows results from post hoc test. Figure 5 to Figure 12 demonstrate means of Professional TAGG domain scores across disability categories.

Table 8

Means and Standard deviations of Disability Groups Across Professional TAGG Domain Scores

Prof-Domain	Student's Disability	*M*	*SD*	*n*
1. Knowledge Of Strengths and Limitations	Autism	13.1	3.3	12
	Emotional Disturbance	11.8	3.7	16
	Intellectual Disability	12.8	4.1	40
	Other Health Impairment	13.9	3.9	35
	Specific Learning Disability	14.1	3.9	212
	Total	13.8	3.7	315
2. Disability Awareness	Autism	10.5	3.6	12
	Emotional Disturbance	9.1	3.5	16
	Intellectual Disability	11.1	4.6	40
	Other Health Impairment	11.6	4.1	35
	Specific Learning Disability	12.5	4.0	212
	Total	12.0	4.1	315
3. Persistence	Autism	15.3	6.0	12
	Emotional Disturbance	12.8	5.2	16
	Intellectual Disability	15.4	5.2	40
	Other Health Impairment	16.5	5.5	35
	Specific Learning Disability	17.6	4.8	212
	Total	16.9	5.1	315
4. Proactive Involvement	Autism	8.9	3.0	12
	Emotional Disturbance	7.3	2.9	16
	Intellectual Disability	10.5	2.5	40
	Other Health Impairment	10.3	2.7	35
	Specific Learning Disability	11.5	3.1	212
	Total	10.9	3.1	315
5. Goal Setting and Attainment	Autism	14.1	4.5	12
	Emotional Disturbance	12.5	4.3	16
	Intellectual Disability	13.5	4.7	40
	Other Health Impairment	15.0	4.6	35
	Specific Learning Disability	16.3	5.0	212

	Total	15.5	5.0	315
6. Employment	Autism	9.6	2.8	12
	Emotional Disturbance	8.9	3.5	16
	Intellectual Disability	10.2	2.8	40
	Other Health Impairment	9.9	3.1	35
	Specific Learning Disability	10.9	2.6	212
	Total	10.5	2.8	315
7. Self-Advocacy	Autism	7.8	4.0	12
	Emotional Disturbance	8.7	3.6	16
	Intellectual Disability	8.4	4.1	40
	Other Health Impairment	9.3	4.1	35
	Specific Learning Disability	9.7	4.0	212
	Total	9.3	4.0	315
8. Support	Autism	11.9	2.6	12
	Emotional Disturbance	10.8	3.2	16
	Intellectual Disability	12.8	3.4	40
	Other Health Impairment	13.1	3.4	35
	Specific Learning Disability	13.3	3.3	212
	Total	13.0	3.3	315

Figure 5. *Means of Professional TAGG Knowledge of Strengths and Limitations Domain Scores Across Different Disabilities*

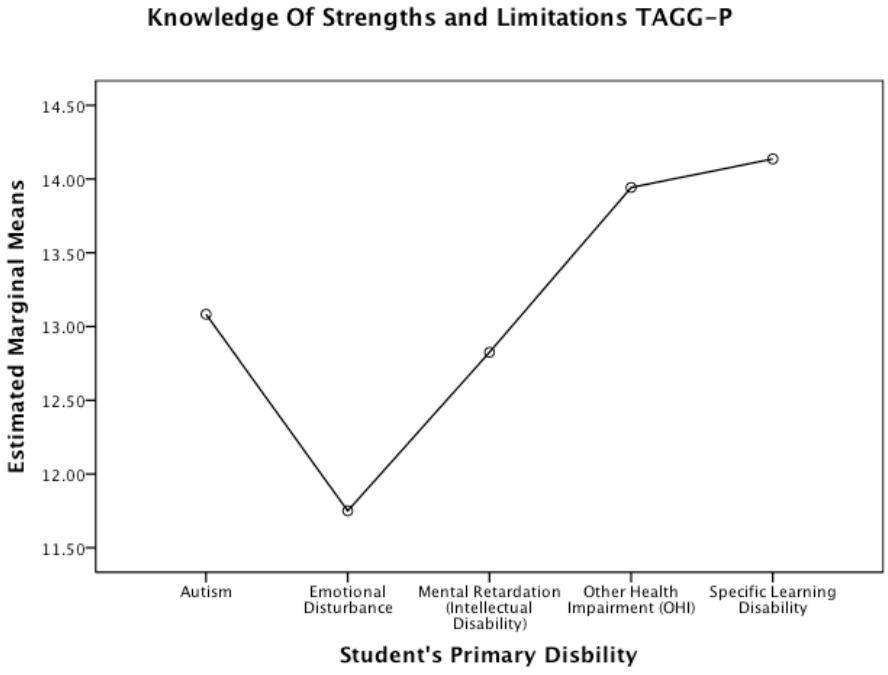
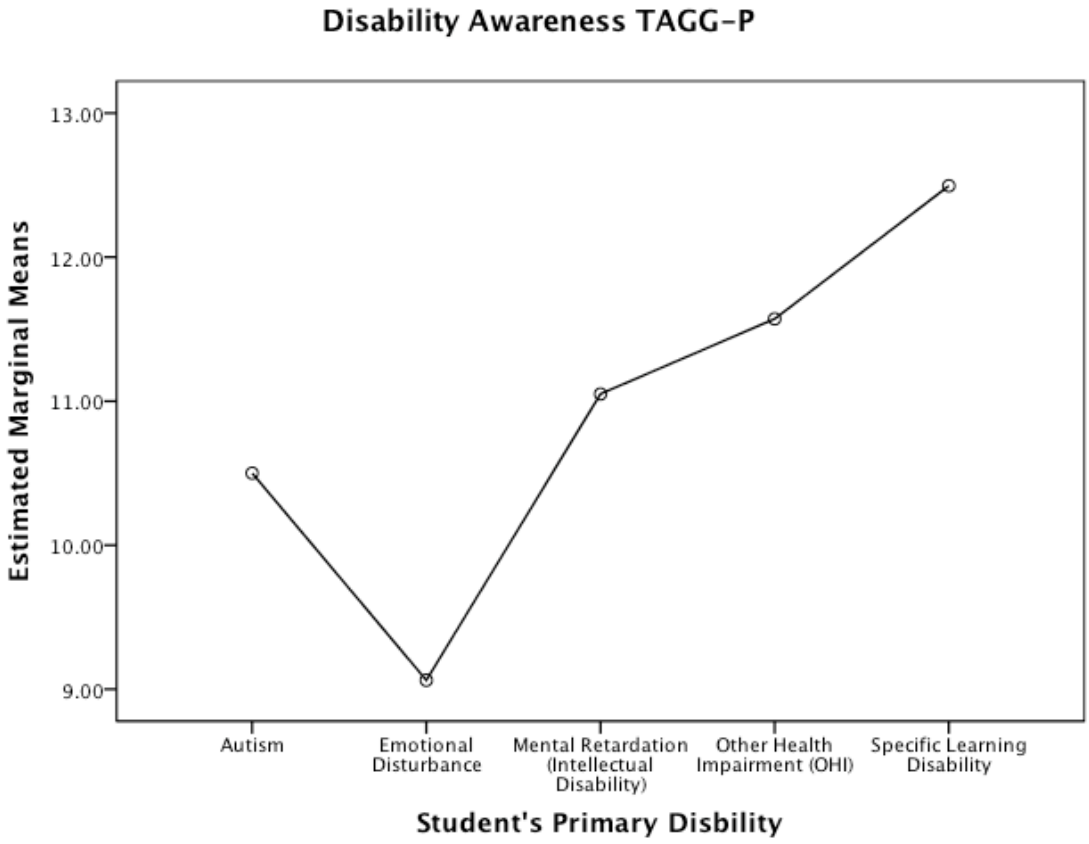
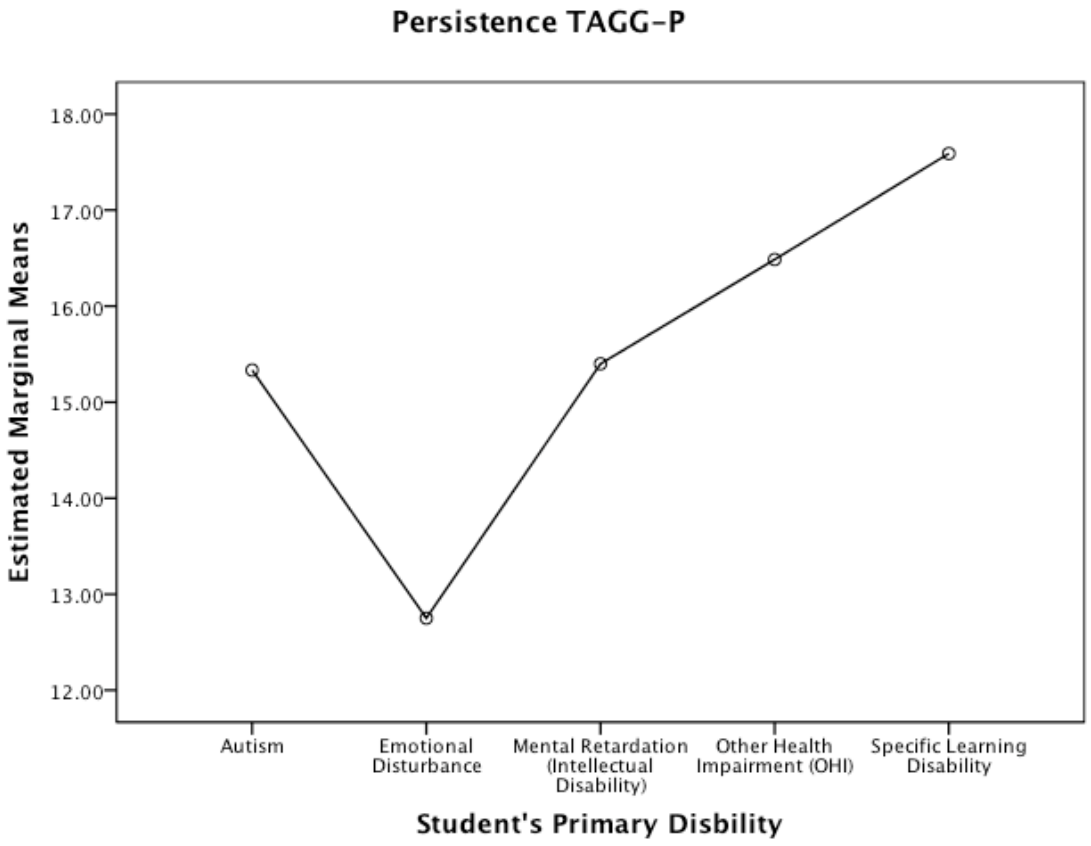


Figure 6. *Means of Professional TAGG Disability Awareness Domain Scores Across Different Disabilities*



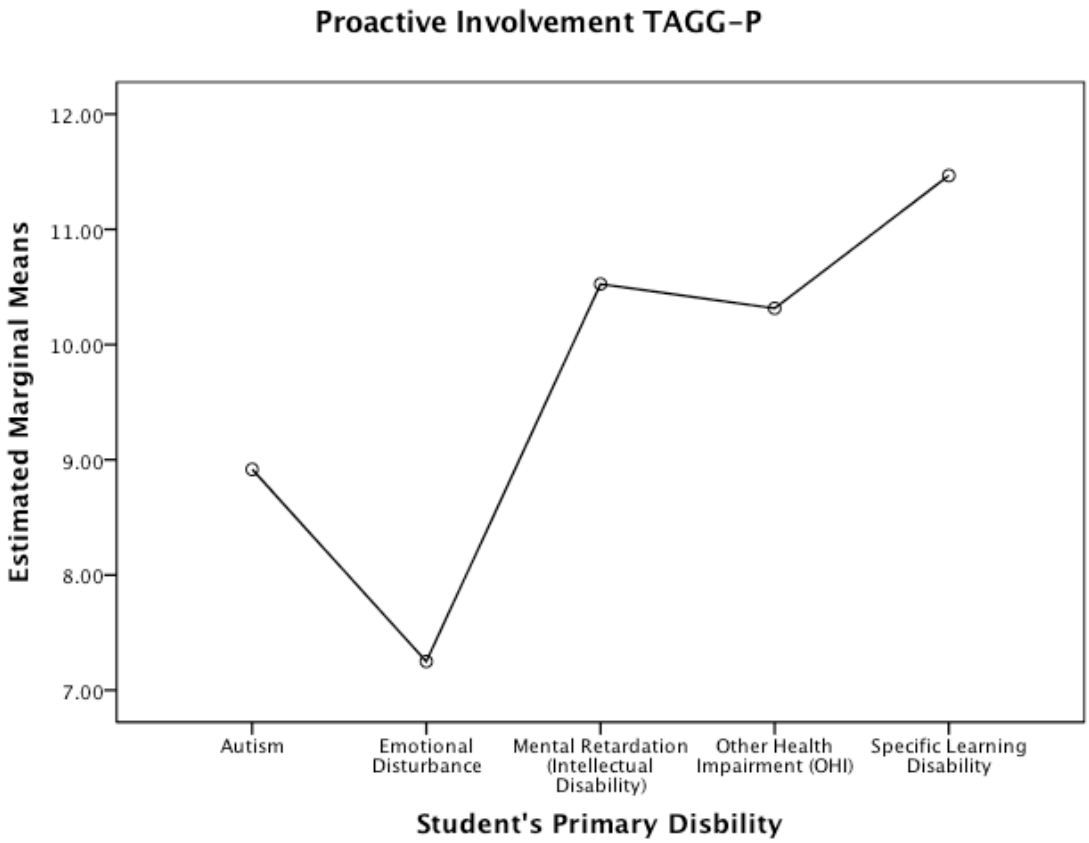
Professionals score students with emotional disturbance the lowest and students with specific learning disabilities the highest on the TAGG Disability Awareness domain.

Figure 7. *Means of Professional TAGG Persistence Domain Scores Across Different Disabilities*



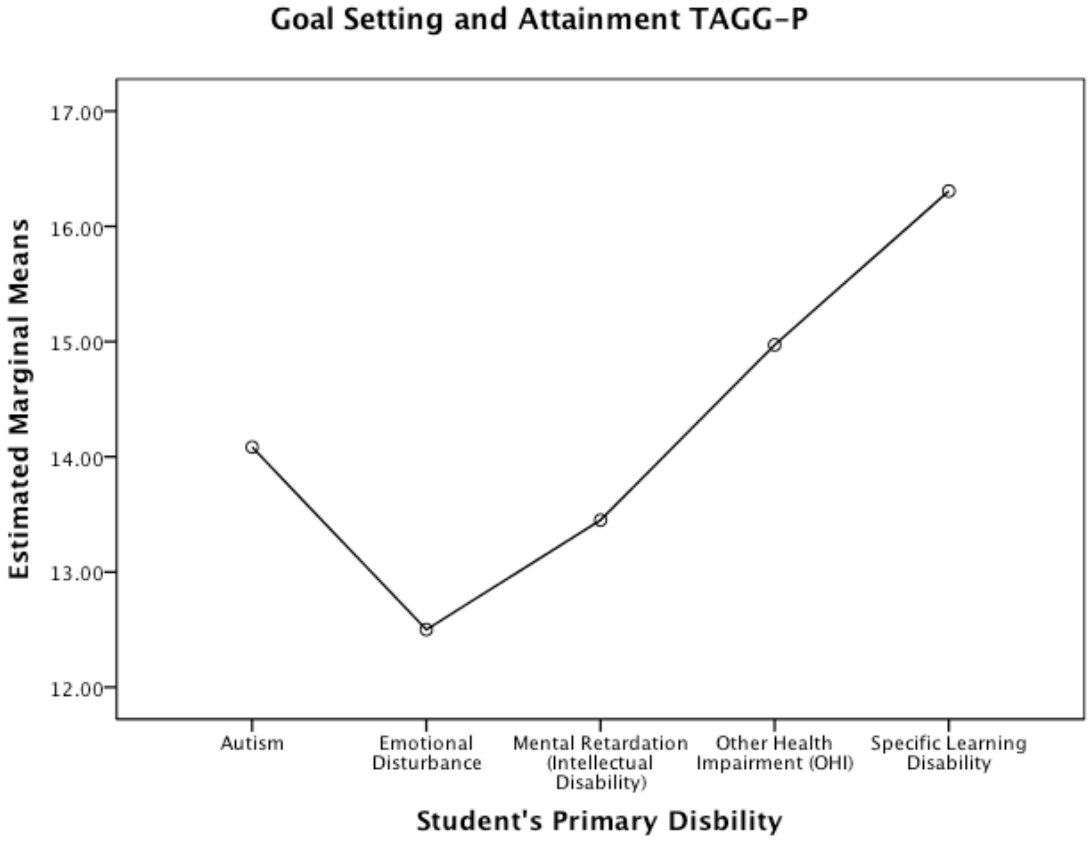
Professionals score students with emotional disturbance the lowest and students with specific learning disabilities the highest on the TAGG Persistence domain.

Figure 8. *Means of Professional TAGG Proactive Involvement Domain Scores Across Different Disabilities*



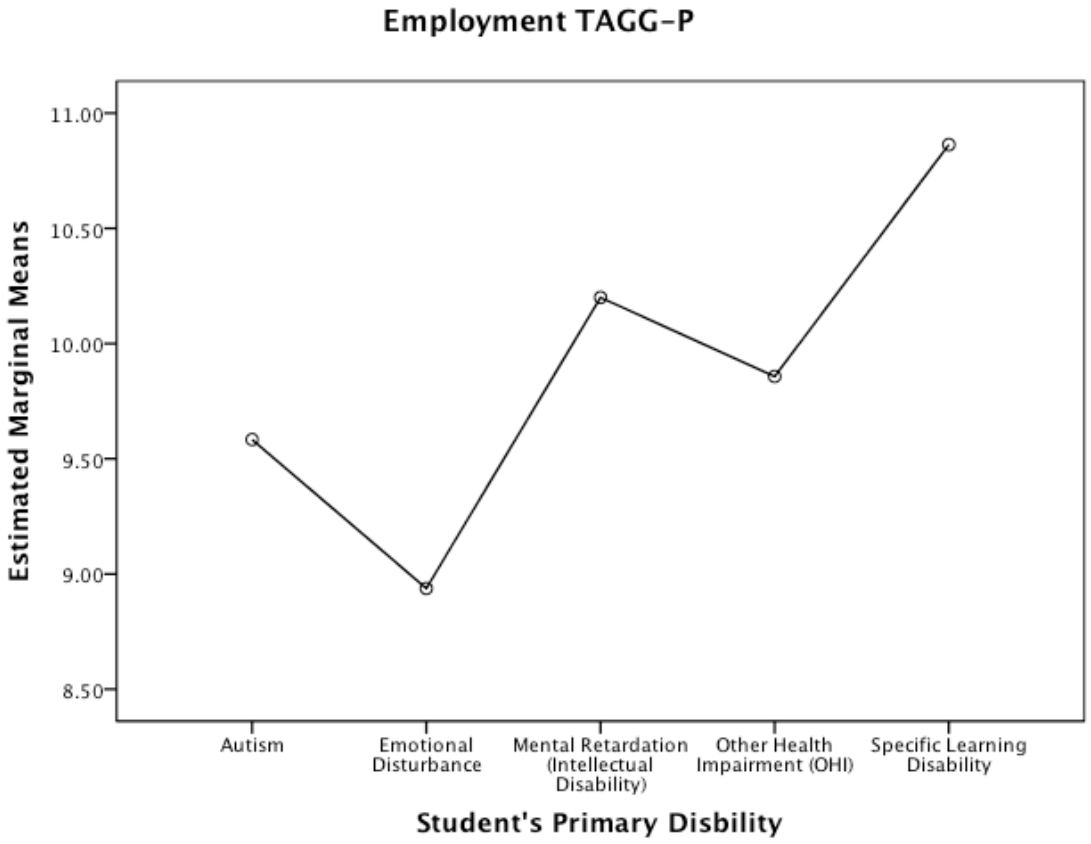
Professionals score students with emotional disturbance the lowest and students with specific learning disabilities the highest on the TAGG Proactive Involvement domain.

Figure 9. *Means of Professional TAGG Goal Setting and Attainment Domain Scores Across Different Disabilities*



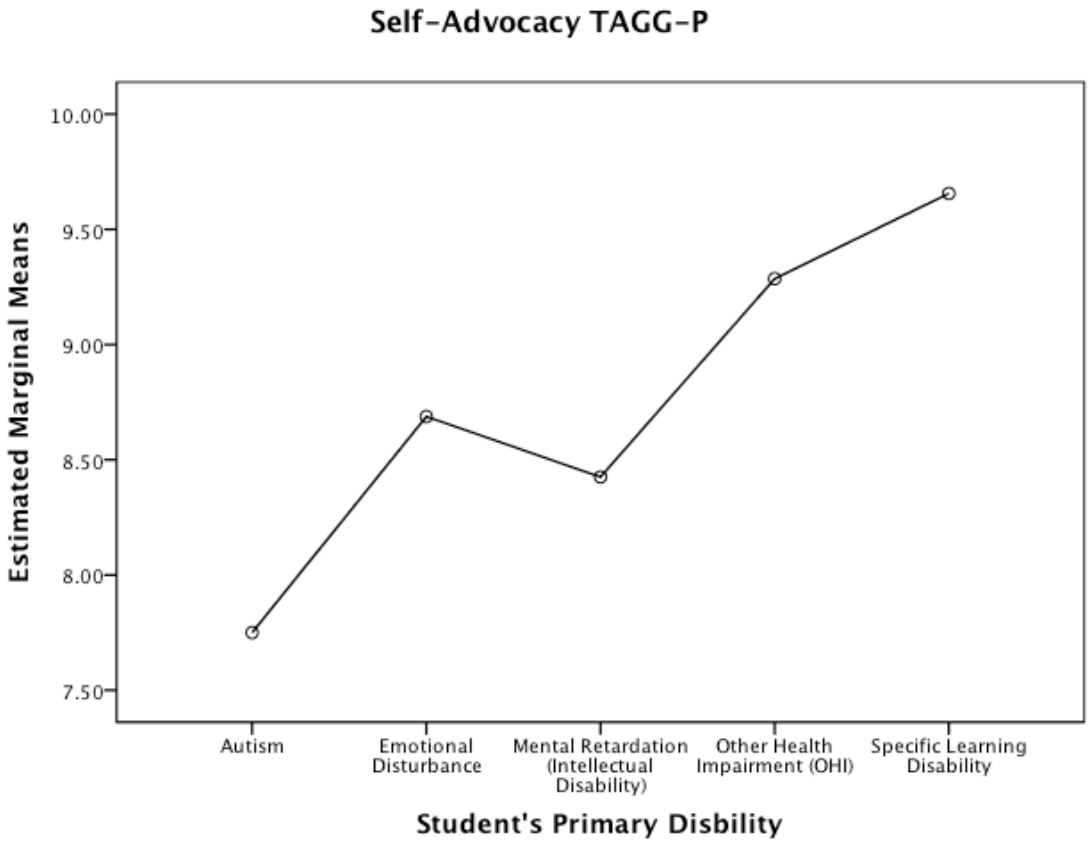
Professionals score students with emotional disturbance the lowest and students with specific learning disabilities the highest on the TAGG Goal Setting and Attainment domain.

Figure 10. *Means of Professional TAGG Employment Domain Scores Across Different Disabilities*



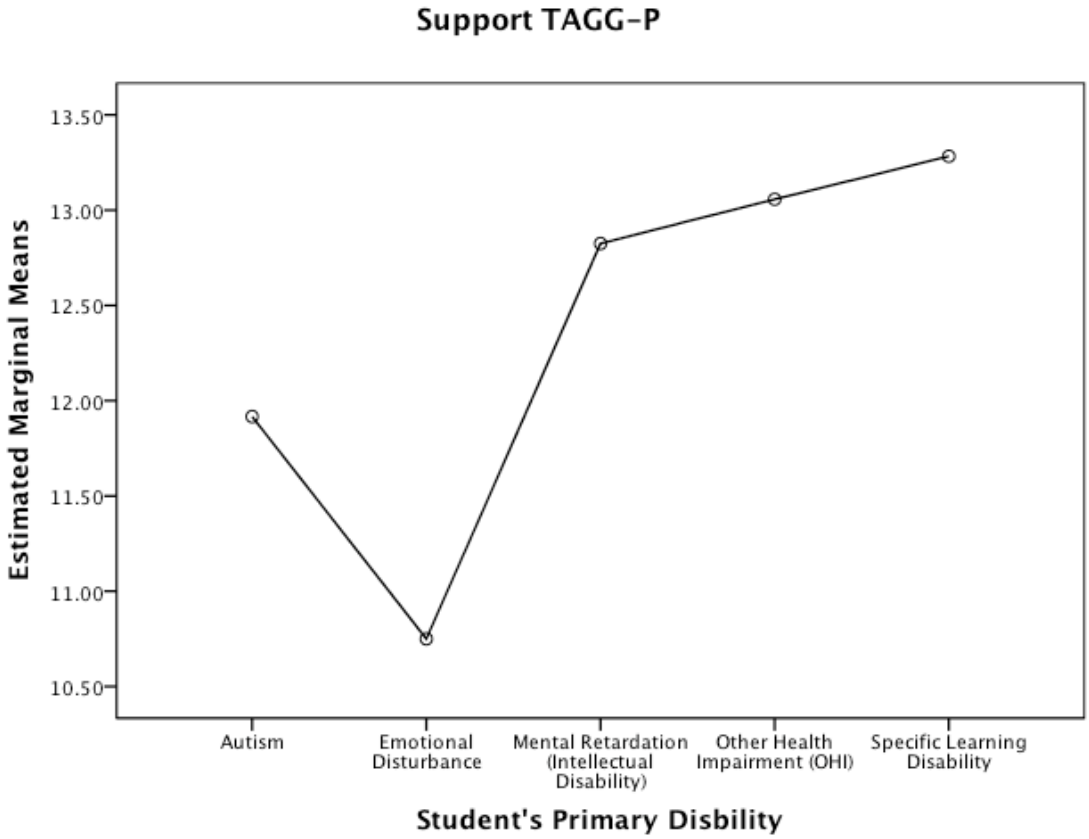
Professionals score students with emotional disturbance the lowest and students with specific learning disabilities the highest on the TAGG Employment domain.

Figure 11. *Means of Professional TAGG Self-Advocacy Domain Scores Across Different Disabilities*



Professionals score students with autism the lowest and students with specific learning disabilities the highest on the TAGG Self-Advocacy domain.

Figure 12. *Means of Professional TAGG Support Domain Scores Across Different Disabilities*



Professionals score students with emotional disturbance the lowest and students with specific learning disabilities the highest on the TAGG Support domain.

Table 9

Results of Post Hoc Test of Disability Groups and Professional TAGG Domain Scores

Disability Groups[2]		Mean Difference TAGG Professional Version Domains[1]							
		1	2	3	4	5	6	7	8
Autism	ED	1.3	1.4	2.6	1.7	1.6	0.6	-0.9	1.2
	ID	0.3	-0.6	-0.7	-1.6	0.6	-0.6	-0.7	-0.9
	OHI	-0.9	-1.1	-1.2	-1.4	-0.9	-0.3	-1.5	-1.1
	SLD	-1.0	-2.0	-2.3	-2.6*	-2.2	-1.3	-1.9	-1.4
ED	Autism	-1.3	-1.4	-2.6	-1.7	-1.6	-.6	0.9	-1.2
	ID	-1.1	-2.0	-2.7	-3.3**	-1.0	-1.3	0.3	-2.1
	OHI	-2.2	-2.5	-3.8	-3.1**	-2.5	-0.9	-0.6	-2.3
	SLD	-2.4	-3.4*	-4.8**	-4.3***	-3.8*	-1.9	-1.0	-2.5*
ID	Autism	-0.3	0.6	0.1	1.6	-0.6	0.6	0.7	0.9
	ED	1.1	2.0	2.7	3.3**	1.0	1.3	-0.3	2.1
	OHI	-1.1	-0.5	-1.1	0.2	-1.5	0.3	-0.9	-0.2
	SLD	-1.3	-1.4	-2.2	-0.9	-2.9**	-0.7	-1.2	-0.5
OHI	Autism	0.9	1.2	1.2	1.4	0.9	0.3	1.5	1.1
	ED	2.2	2.5	3.7	3.1**	2.5	0.9	0.6	2.3
	ID	1.1	0.5	1.1	-0.2	1.5	-0.3	0.9	0.2
	SLD	-0.2	-0.9	-1.1	-1.2	-1.3	-1.0	-0.4	-0.2
SLD	Autism	1.1	2.0	2.3	2.6*	2.2	1.3	1.9	1.4
	ED	2.4	3.4*	4.8**	4.2***	3.8*	1.9	1.0	2.5*
	ID	1.3	1.4	2.2	0.9	2.9**	0.7	1.2	0.5
	OHI	0.2	0.9	1.1	1.2	1.3	1.0	0.4	0.2

Note. [1]The eight domains are: 1-Knowledge of Strengths and Limitations, 2- Disability Awareness, 3-Persistence, 4-Proactive Involvement, 5-Goal Setting and Attainment, 6-Employment, 7-Self-Advocacy, and 8-Support.
[2]Disability groups: Emotional Disturbance (ED), Intellectual Disabilities (ID), Other Heath Impairments (OHI), and Specific Learning disabilities (SLD).
* $p < .05$, ** $p < .01$, *** $p < .001$

Disability categories and Family TAGG domain scores. To answer research question number 12, I conducted MANOVA tests with disability category as the independent variable and the eight Family TAGG domain scores as the dependent

variables. The multivariate analysis tests on the eight domains of the Family TAGG version showed an overall statistically significant difference between different disability categories ($p = .006$, $\eta^2 = .058$, observed power = .994). On the domain level, the tests showed statistically significant differences on seven of the eight domains (see Table 7). The only domain that showed no significant difference was the Disability Awareness domain.

The post hoc Tukey test (Table 11) showed statistically significant differences between different pairs of disability categories across the following seven domains (a) on the Knowledge of Strengths and Limitations domain, the test showed a statistically significant difference between students with SLD and students with ED ($p = .042$) in favor of SLD; (b) on the Persistence domain, the test showed a statistically significant difference between students with SLD and students with ED ($p = .002$) in favor of SLD; (c) on the Proactive Involvement domain, the test showed a statistically significant difference between students with SLD and students with ED ($p = .010$) in favor of SLD; (d) on Goal Setting and Attainment, the test showed a statistically significant difference between students with SLD and students with Autism ($p = .004$) in favor of SLD, and between students with SLD and students with ED ($p = .024$) in favor of SLD; (e) on Employment domain, the test showed a statistically significant difference between students with SLD and students with ED ($p = .039$) in favor of SLD, and between students with SLD and students with ID ($p = .032$) in favor of SLD; (f) on Self-Advocacy domain, the test showed a statistically significant difference between students with SLD and students with Autism ($p = .007$) in favor of SLD; and

(g) on Support domain, the test showed a statistically significant difference between students with SLD and students with Autism (p = .050) in favor of SLD.

The post hoc Tukey test showed no statistically significant difference between any specific pair of disability categories on the Disability Awareness domain. Table 10 depicts means and standard deviations of different disability groups across Family TAGG domain scores and Table 11 shows results from post hoc test. Figure 13 to Figure 20 demonstrate means of Family TAGG domain scores across disability categories.

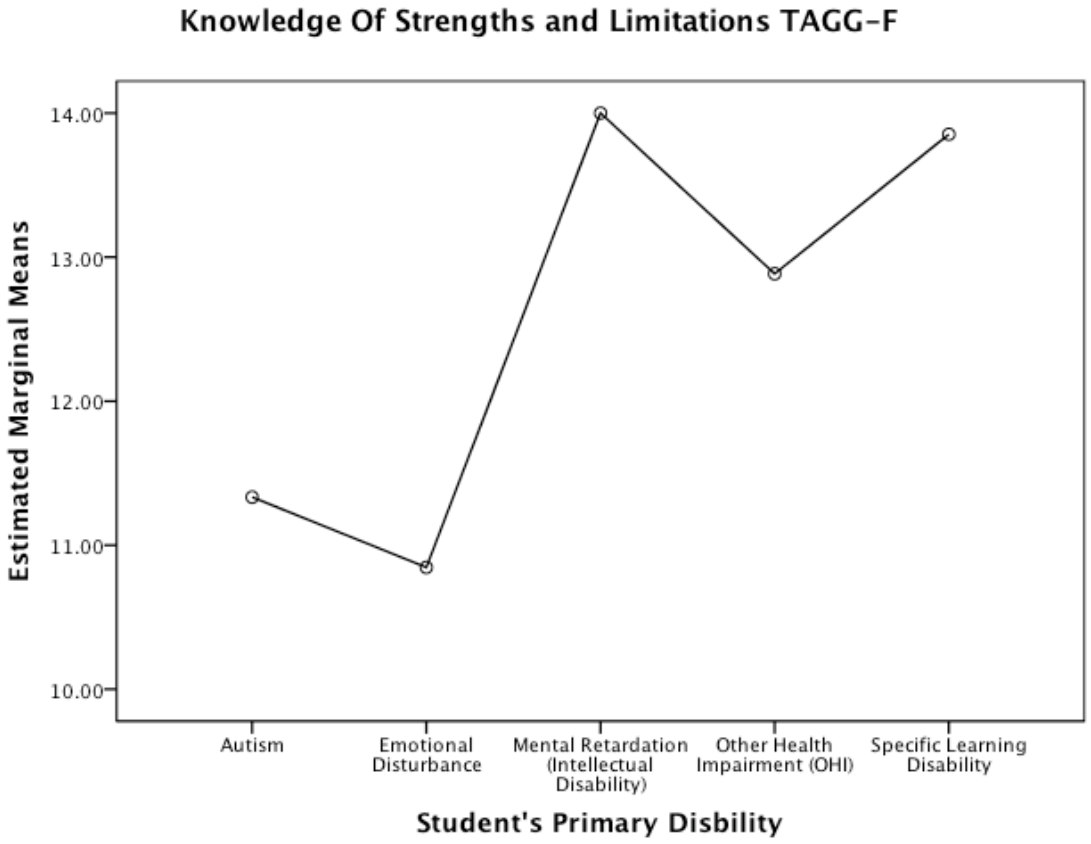
Table 10

Means and Standard deviations of Disability Groups Across Family TAGG Domain Scores

Fam. Domain	Student's Disability	*M*	*SD*	*n*
1. Knowledge Of Strengths and Limitations	Autism	11.3	3.3	12
	Emotional Disturbance	10.8	3.2	13
	Intellectual Disability	14.0	4.2	33
	Other Health Impairment	12.9	3.5	26
	Specific Learning Disability	13.9	3.7	156
	Total	13.5	3.8	240
2. Disability Awareness	Autism	8.3	2.7	12
	Emotional Disturbance	7.8	3.5	13
	Intellectual Disability	10.2	4.6	33
	Other Health Impairment	10.7	4.3	26
	Specific Learning Disability	10.5	4.4	156
	Total	10.2	4.3	240
3. Persistence	Autism	16.0	4.2	12
	Emotional Disturbance	13.1	4.3	13
	Intellectual Disability	17.5	4.4	33
	Other Health Impairment	16.7	4.7	26
	Specific Learning Disability	18.6	5.5	156
	Total	17.8	5.3	240

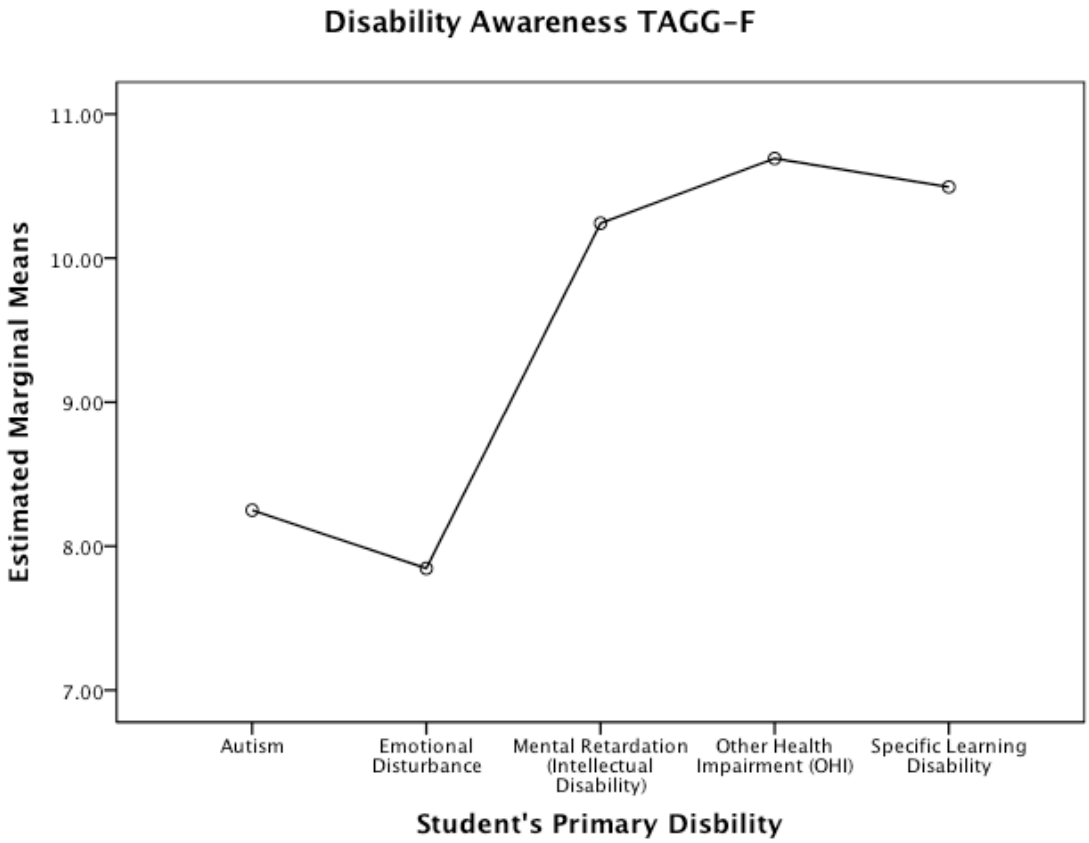
4. Proactive Involvement	Autism	10.7	2.9	12
	Emotional Disturbance	8.9	2.5	13
	Intellectual Disability	11.3	2.4	33
	Other Health Impairment	11.2	3.0	26
	Specific Learning Disability	11.5	2.7	156
	Total	11.2	2.7	240
5. Goal Setting and Attainment	Autism	12.0	4.3	12
	Emotional Disturbance	13.0	5.2	13
	Intellectual Disability	15.8	5.2	33
	Other Health Impairment	16.0	4.9	26
	Specific Learning Disability	17.6	5.4	156
	Total	16.6	5.5	240
6. Employment	Autism	10.3	2.8	12
	Emotional Disturbance	10.2	3.0	13
	Intellectual Disability	10.7	2.4	33
	Other Health Impairment	11.4	2.4	26
	Specific Learning Disability	11.9	2.0	156
	Total	11.5	2.2	240
7. Self-Advocacy	Autism	8.8	5.0	12
	Emotional Disturbance	11.2	4.4	13
	Intellectual Disability	12.8	4.5	33
	Other Health Impairment	12.0	4.0	26
	Specific Learning Disability	13.3	4.4	156
	Total	12.8	4.5	240
8. Support	Autism	11.8	3.2	12
	Emotional Disturbance	12.6	3.4	13
	Intellectual Disability	13.3	3.8	33
	Other Health Impairment	13.9	2.7	26
	Specific Learning Disability	14.5	3.3	156
	Total	14.0	3.4	240

Figure 13. *Means of Family TAGG Knowledge of Strengths and Limitations Domain Scores Across Different Disabilities*



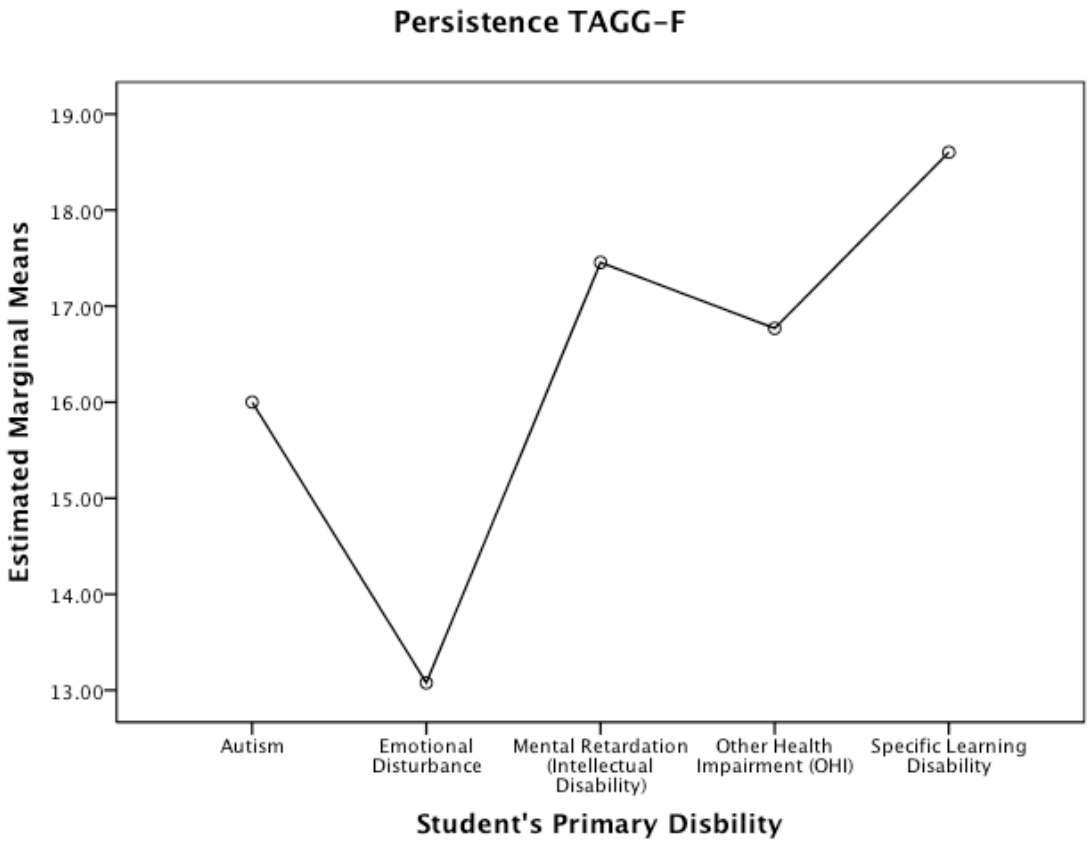
Family members score students with emotional disturbance the lowest and students with intellectual disabilities the highest on the TAGG Knowledge of Strengths and Limitations domain.

Figure 14. *Means of Family TAGG Disability Awareness Domain Scores Across Different Disabilities*



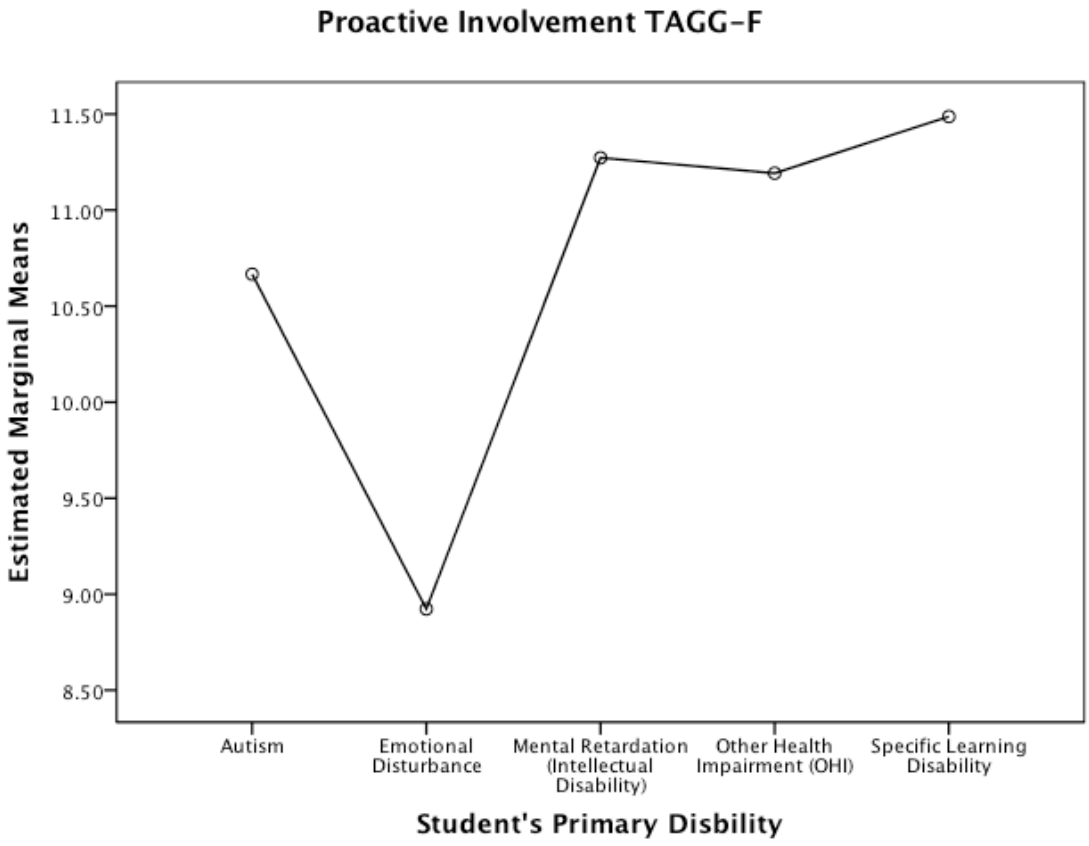
Family members score students with emotional disturbance the lowest and students with other health impairments the highest on the TAGG Disability Awareness domain.

Figure 15. *Means of Family TAGG Persistence Domain Scores Across Different Disabilities*



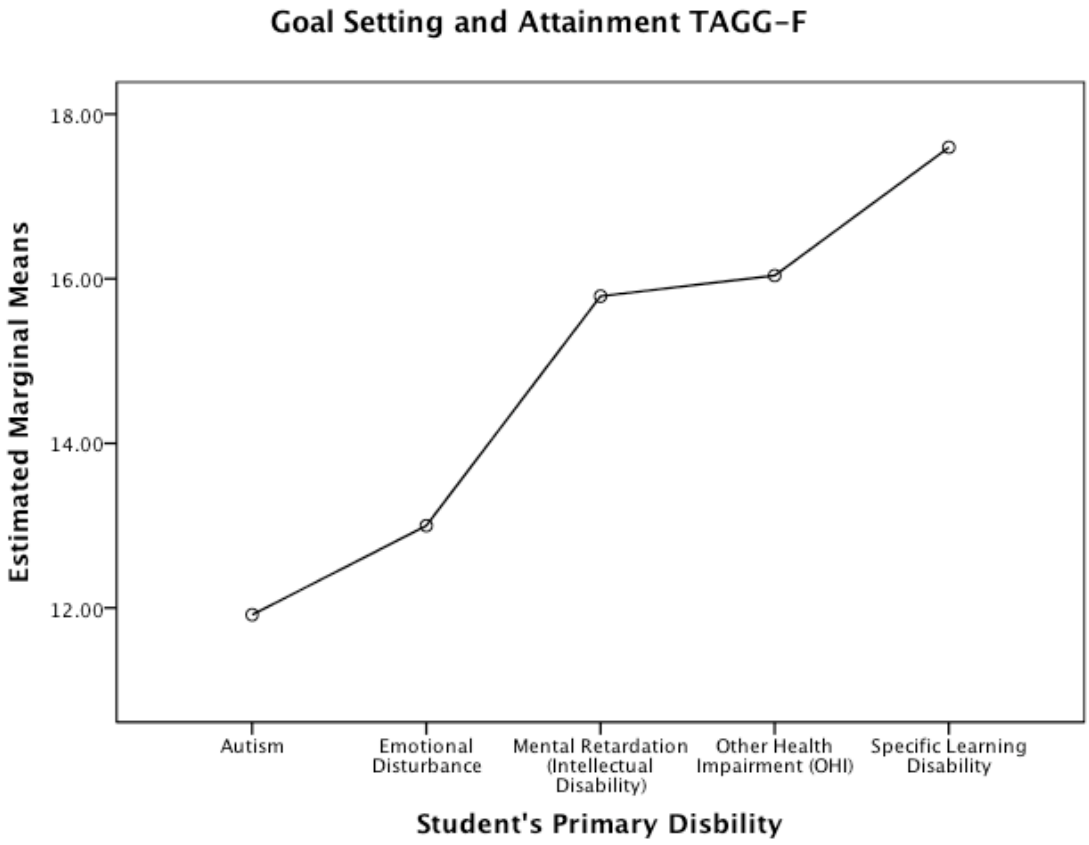
Family members score students with emotional disturbance the lowest and students with specific learning disabilities the highest on the TAGG Persistence domain.

Figure 16. *Means of Family TAGG Proactive Involvement Domain Scores Across Different Disabilities*



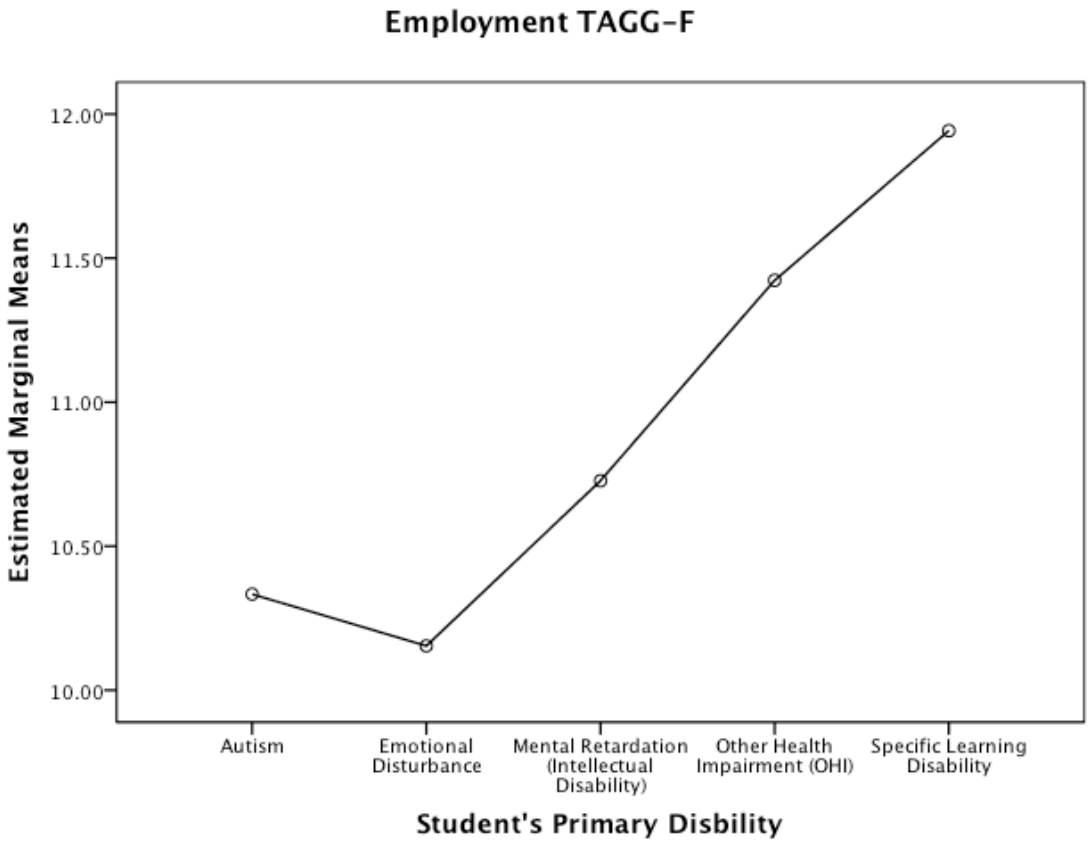
Family members score students with emotional disturbance the lowest and students with specific learning disabilities the highest on the TAGG Proactive Involvement domain.

Figure 17. *Means of Family TAGG Goal Setting and Attainment Domain Scores Across Different Disabilities*



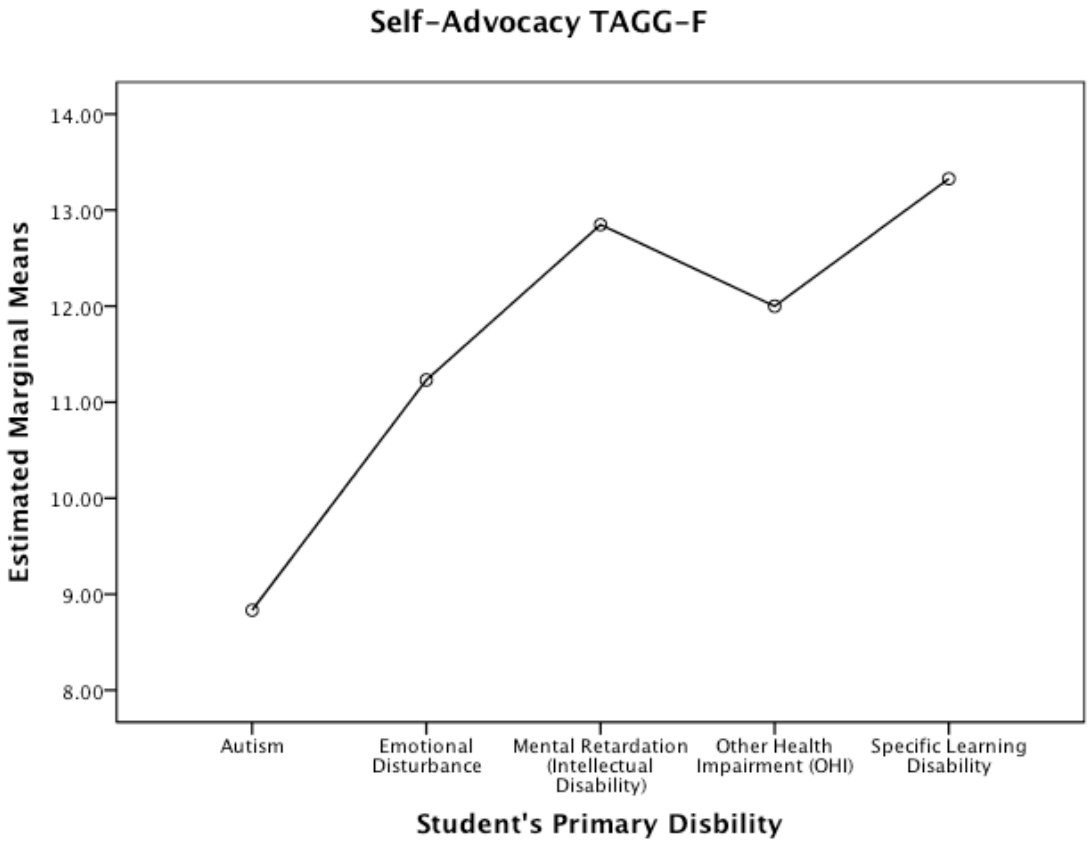
Family members score students with autism the lowest and students with specific learning disabilities the highest on the TAGG Goal Setting and Attainment domain.

Figure 18. *Means of Family TAGG Employment Domain Scores Across Different Disabilities*



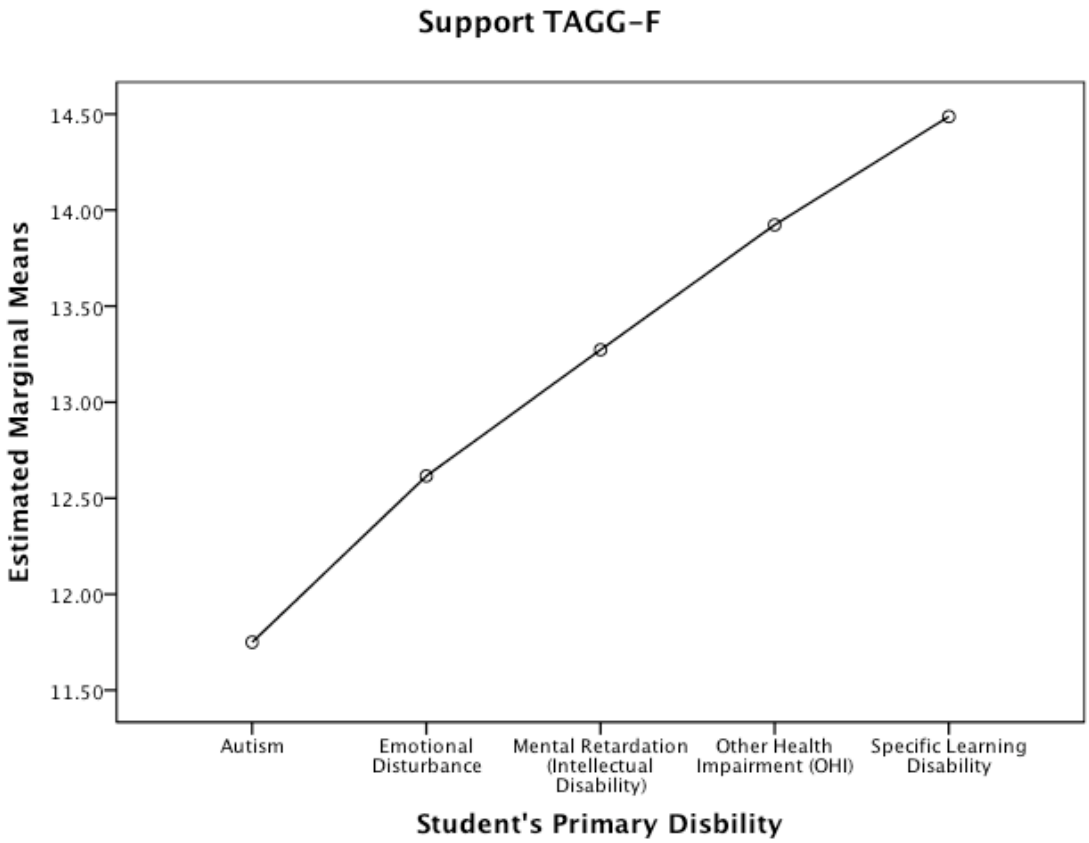
Family members score students with emotional disturbance the lowest and students with specific learning disabilities the highest on the TAGG Employment domain.

Figure 19. *Means of Family TAGG Self-Advocacy Domain Scores Across Different Disabilities*



Family members score students with autism the lowest and students with specific learning disabilities the highest on the TAGG Self-Advocacy domain.

Figure 20. *Means of Family TAGG Support Domain Scores Across Different Disabilities*



Family members score students with autism the lowest and students with specific learning disabilities the highest on the TAGG Support domain.

Table 11

Results of Post Hoc Test of Disability Groups and Family TAGG Domain Scores

Disability Groups[2]		Mean Difference TAGG Family Version Domains[1]							
		1	2	3	4	5	6	7	8
Autism	ED	0.5	0.4	2.9	1.7	-1.2	0.2	-2.4	-0.9
	ID	-2.7	-2.0	-1.5	-0.6	-3.9	-0.4	-4.0	-1.5
	OHI	-1.6	-2.4	-0.8	-0.5	-4.1	-1.1	-3.2	-2.2
	SLD	-2.5	-2.2	-2.6	-0.8	-5.7**	-1.6	-4.5**	-2.7*
ED	Autism	-0.5	-0.4	-2.9	-1.7	1.2	-0.2	2.4	0.9
	ID	-3.2	-2.4	-4.4	-2.3	-2.8	-0.6	-1.6	-0.7
	OHI	-2.0	-2.8	-3.7	-2.7	-3.0	-1.3	-0.8	-1.3
	SLD	-3.0*	-2.6	-5.5**	-2.6**	-4.6*	-1.8*	-2.1	-1.9
ID	Autism	2.7	2.0	1.5	0.6	3.9	0.4	4.0	1.5
	ED	3.2	2.4	4.4	2.3	2.8	0.6	1.6	0.7
	OHI	1.1	-0.4	0.7	0.1	-0.3	-0.7	0.8	-0.7
	SLD	0.1	-0.3	-1.1	-.2	-1.8	-1.2*	-0.5	-1.2
OHI	Autism	1.6	2.4	0.8	0.5	4.1	1.1	3.2	2.2
	ED	2.0	2.8	3.7	2.3	3.0	1.3	0.8	1.3
	ID	-1.1	0.4	-0.7	-0.1	0.3	0.7	-0.8	0.7
	SLD	-1.0	0.2	-1.8	-0.3	-1.6	-0.5	-1.3	-0.6
SLD	Autism	2.5	2.2	2.6	0.8	5.7**	1.6	4.5**	2.7*
	ED	3.0*	2.6	5.5**	2.6**	4.6*	1.8*	2.1	1.9
	ID	-0.1	0.3	1.1	0.2	1.8	1.2*	0.5	1.2
	OHI	1.0	-0.2	1.8	0.3	1.6	0.5	1.3	0.6

Note. [1]The eight domains are: 1-Knowledge of Strengths and Limitations, 2- Disability Awareness, 3-Persistence, 4-Proactive Involvement, 5-Goal Setting and Attainment, 6-Employment, 7-Self-Advocacy, and 8-Support.
[2]Disability groups: Emotional Disturbance (ED), Intellectual Disabilities (ID), Other Heath Impairments (OHI), and Specific Learning disabilities (SLD).
* $p < .05$, ** $p < .01$.

Disability categories and Student TAGG domain scores. To answer research question number 14, I conducted MANOVA tests with disability category as the independent variable and the seven Student TAGG domain scores as the dependent variables. The multivariate tests on the seven domains of the Student TAGG version showed an overall statistically significant difference between different disability categories ($p = .022$, $\eta^2 = .039$, observed power = .978). On the domain level, the tests showed statistically significant differences on following four domains (a) Knowledge of Strengths and Limitations and Support, (b) Goal Setting and Attainment, (c) Employment, and (d) Self-Advocacy (see Table 7).

The post hoc Tukey test (Table 13) showed a statistically significant difference between specific disability categories across two out of the seven domains as follows (a) on the Knowledge of Strengths and Limitations and support domain, the test showed a statistically significant difference between students with SLD and students with Autism ($p = .008$) in favor of SLD, and between students with OHI and students with Autism ($p = .002$) in favor of OHI; and (b) on the Self-Advocacy domain, the test showed a statistically significant difference between students with SLD and students with Autism ($p = .041$) in favor of SLD.

The post hoc Tukey test showed no significant difference between any specific pair of disability categories on the following five domains: Disability Awareness, Persistence, Proactive Involvement, Goal Setting and Attainment, and Employment. Table 12 depicts means and standard deviations of different disability groups across Student TAGG domain scores and Table 13 shows results from post hoc test. Figure 21

to Figure 27 demonstrate means of Student TAGG domain scores across disability categories.

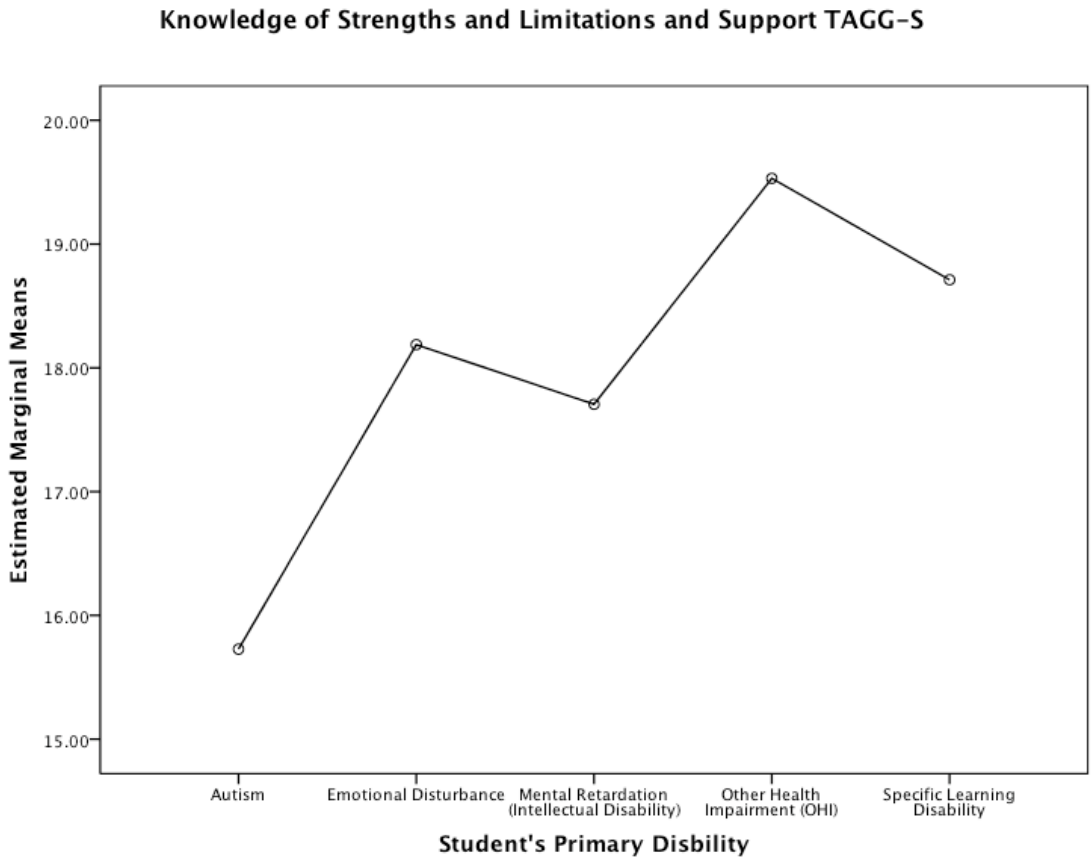
Table 12

Means and Standard Deviations of Disability Groups Across Student TAGG Domain Scores

Stu. Domain	Student's Disability	*M*	*SD*	*n*
1. Knowledge Of Strengths and Limitations and Supports	Autism	15.7	3.2	11
	Emotional Disturbance	18.2	2.2	16
	Intellectual Disability	17.7	3.6	34
	Other Health Impairment	19.5	3.0	32
	Specific Learning Disability	18.7	2.7	201
	Total	18.5	2.9	294
2. Disability Awareness	Autism	6.9	2.0	11
	Emotional Disturbance	6.9	1.9	16
	Intellectual Disability	7.3	2.1	34
	Other Health Impairment	7.7	2.1	32
	Specific Learning Disability	7.7	2.2	201
	Total	7.6	2.1	294
3. Persistence	Autism	11.7	3.0	11
	Emotional Disturbance	12.2	2.6	16
	Intellectual Disability	11.7	3.0	34
	Other Health Impairment	12.6	2.0	32
	Specific Learning Disability	12.6	2.4	201
	Total	12.4	2.5	294
4. Proactive Involvement	Autism	7.0	1.5	11
	Emotional Disturbance	6.2	1.5	16
	Intellectual Disability	6.6	1.6	34
	Other Health Impairment	7.0	1.3	32
	Specific Learning Disability	7.0	1.5	201
	Total	6.9	1.5	294
5. Goal Setting and Attainment	Autism	11.5	3.3	11
	Emotional Disturbance	12.4	2.7	16
	Intellectual Disability	12.3	3.0	34
	Other Health Impairment	13.5	2.3	32
	Specific Learning Disability	13.3	2.4	201

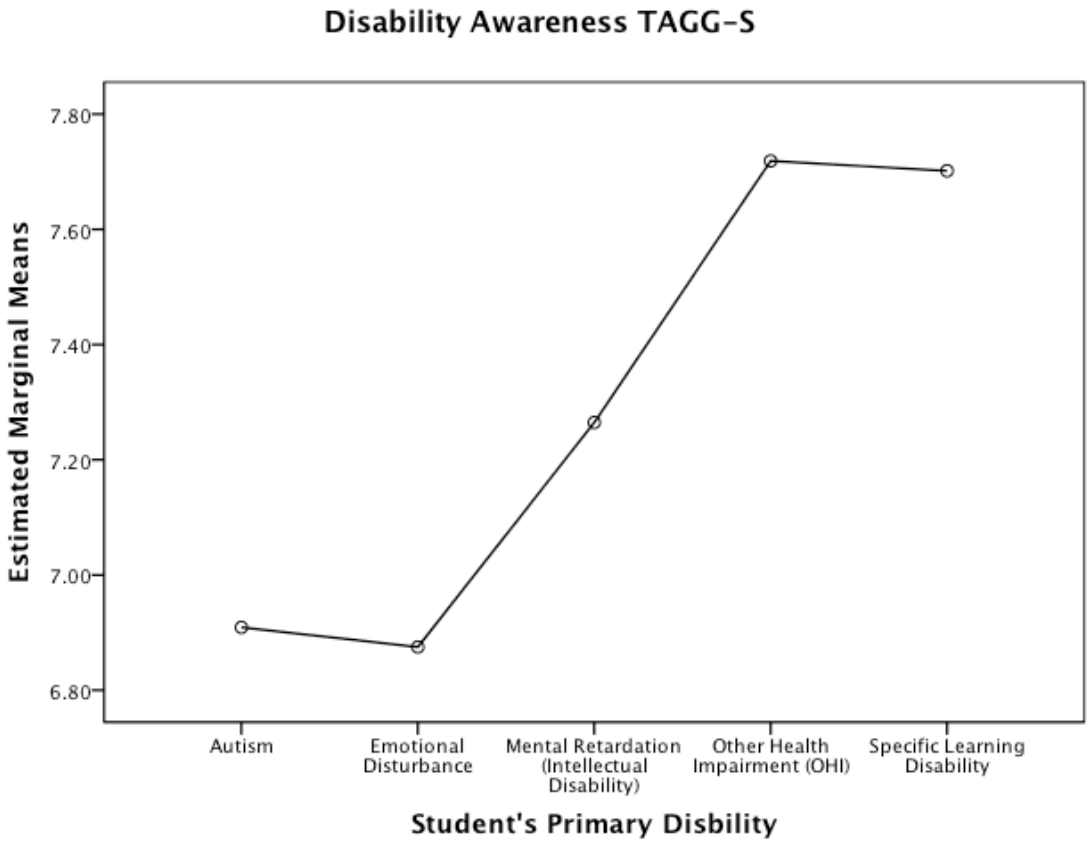
	Total	13.1	2.5	294
6. Employment	Autism	7.8	1.7	11
	Emotional Disturbance	8.3	1.7	16
	Intellectual Disability	8.4	1.5	34
	Other Health Impairment	9.2	1.2	32
	Specific Learning Disability	8.9	1.4	201
	Total	8.8	1.4	294
7. Self-Advocacy	Autism	6.8	2.4	11
	Emotional Disturbance	7.4	2.5	16
	Intellectual Disability	8.5	2.5	34
	Other Health Impairment	8.5	2.4	32
	Specific Learning Disability	8.4	2.4	201
	Total	8.3	2.4	294

Figure 21. *Means of Student TAGG Knowledge of Strengths and Limitations and Support Domain Scores Across Different Disabilities*



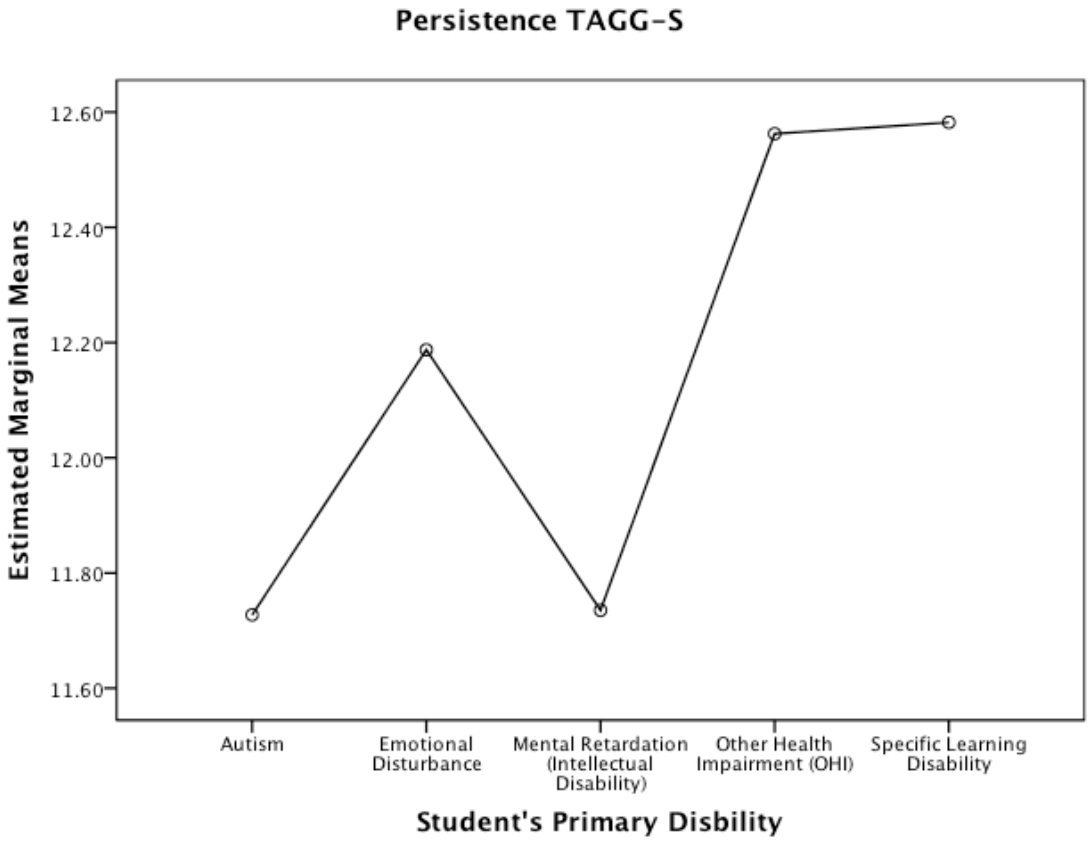
Students with autism have the lowest self-rating, and students with other health impairments have the highest self-rating on the TAGG Knowledge of Strengths and Limitations and Supports domain.

Figure 22. *Means of Student TAGG Disability Awareness Domain Scores Across Different Disabilities*



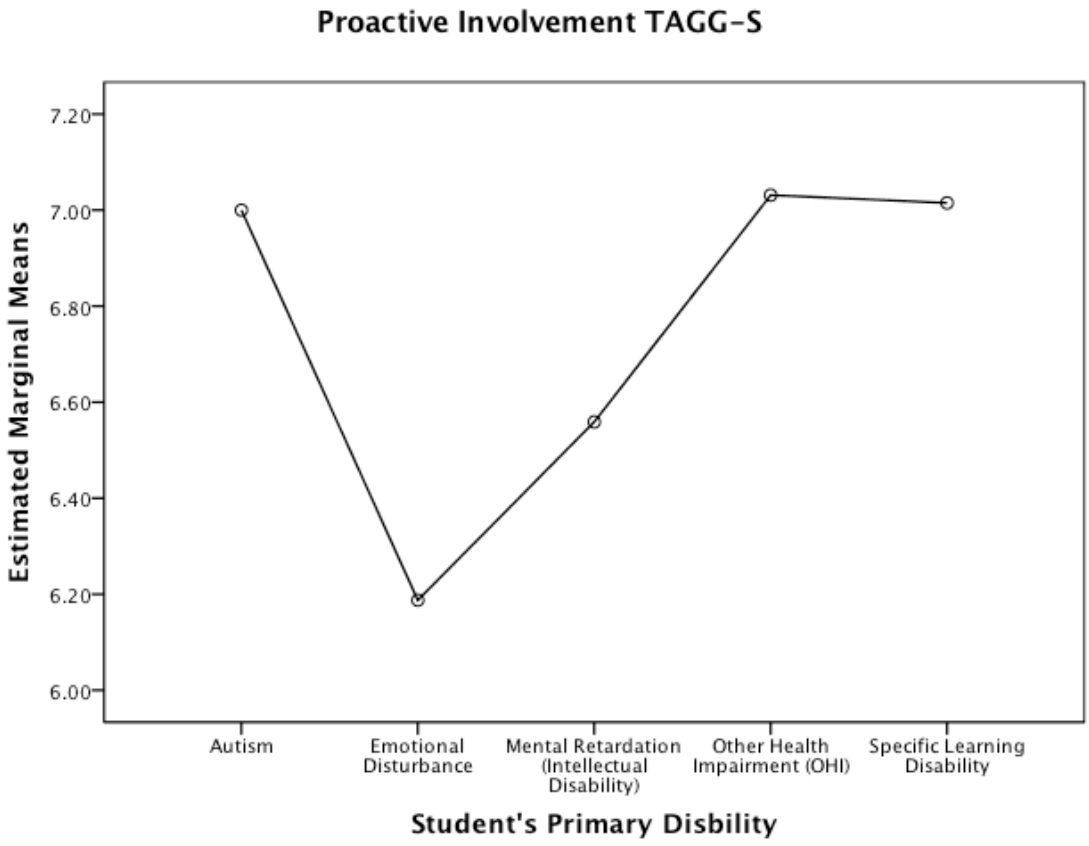
Students with emotional disturbance have the lowest self-rating, and students with other health impairments have the highest self-rating on the TAGG Disability Awareness domain.

Figure 23. *Means of Student TAGG Persistence and Self Advocacy Domain Scores Across Different Disabilities*



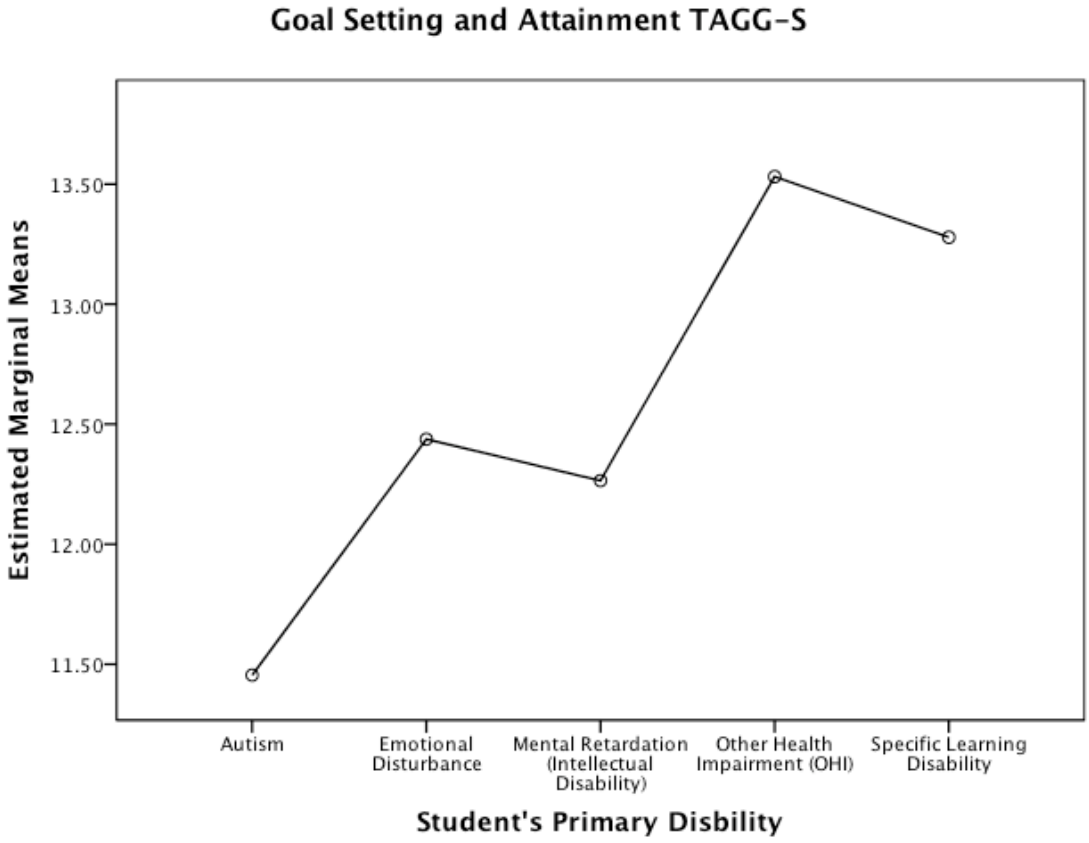
Students with autism and students with intellectual disabilities have the lowest self-rating, and students with specific learning disabilities have the highest self-rating on the TAGG Persistence domain.

Figure 24. *Means of Student TAGG Proactive Involvement Domain Scores Across Different Disabilities*



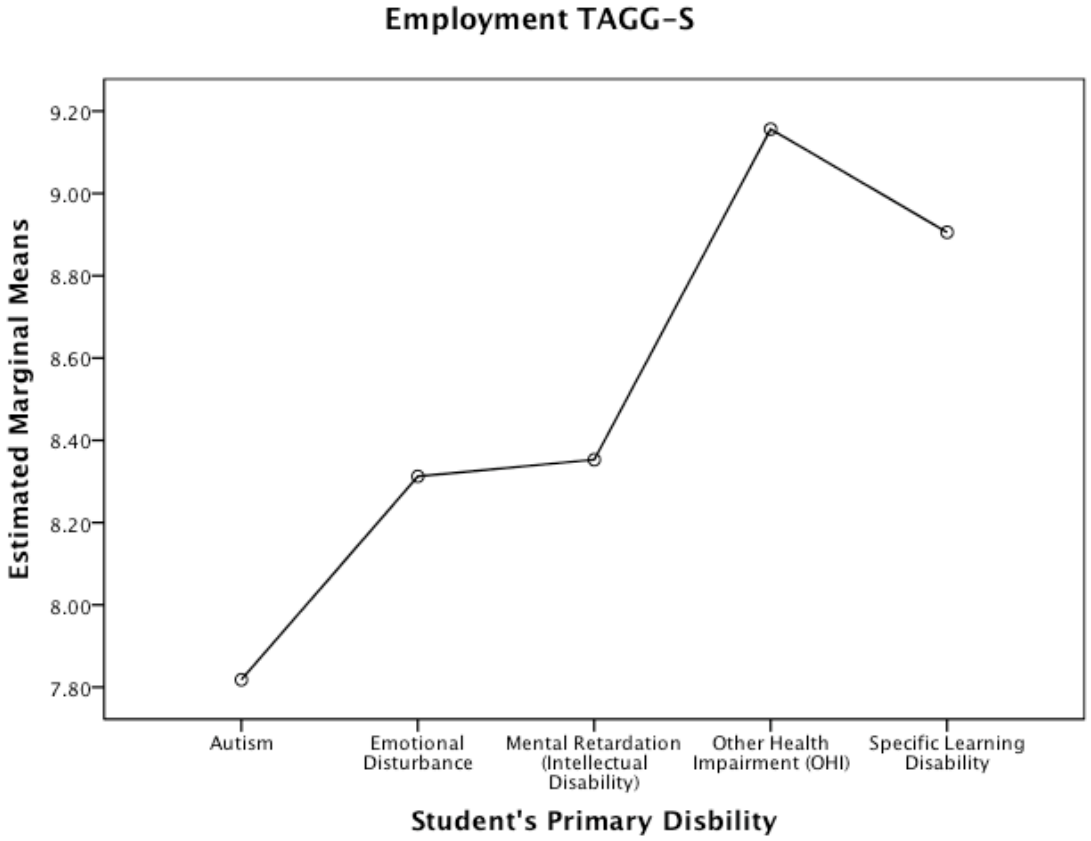
Students with intellectual disabilities and students with emotional disturbance have the lowest self-rating, and students with autism, other health impairments, and specific learning disabilities have the highest self-rating on the TAGG Proactive Involvement domain.

Figure 25. *Means of Student TAGG Goal Setting and Attainment Domain Scores Across Different Disabilities*



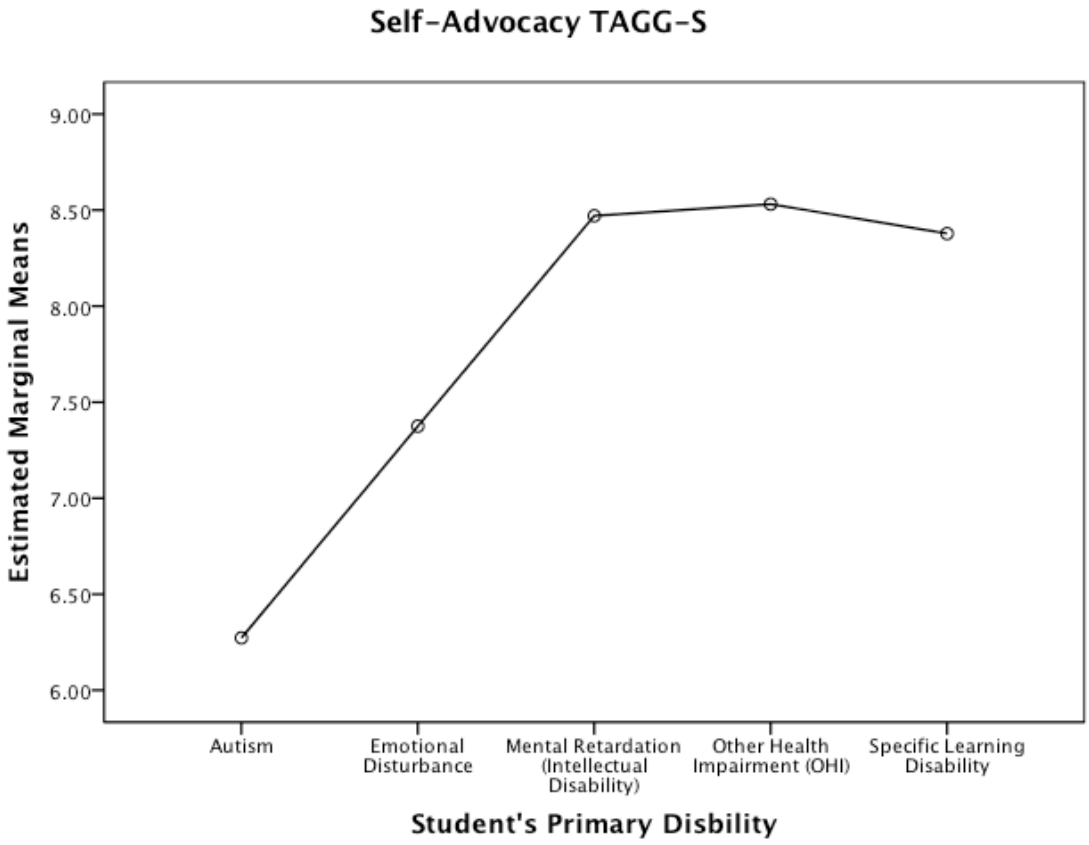
Students with autism have the lowest self-rating, and students with other health impairments have the highest self-rating on the TAGG Goal Setting and Attainment domain.

Figure 26. *Means of Student TAGG Employment Domain Scores Across Different Disabilities*



Students with autism have the lowest self-rating, and students with other health impairments have the highest self-rating on the TAGG Employment domain.

Figure 27. *Means of Student TAGG Self-Advocacy Domain Scores Across Different Disabilities*



Students with autism have the lowest self-rating, and students with specific learning disabilities, other health impairments, and intellectual disabilities have the highest self-rating on the TAGG Self-Advocacy domain.

Table 13

Results of Post Hoc Test of Disability Groups and Student TAGG Domain Scores

Disability Groups[2]		Mean Difference TAGG Student Version Domains[1]						
		1	2	3	4	5	6	7
Autism	ED	-2.4	0.0	-0.5	0.8	-1.0	-0.5	-1.1
	ID	-2.0	-0.4	0.0	0.4	-0.8	-0.5	-2.2
	OHI	-3.8**	-0.8	-0.8	0.0	-2.1	-1.3	-2.3
	SLD	-3.0**	-0.8	-0.9	0.0	-1.8	-1.1	-2.1*
ED	Autism	2.5	-0.0	0.5	-0.8	1.0	0.5	1.1
	ID	0.5	-0.4	0.5	-0.4	0.1	0.0	-1.1
	OHI	-1.3	-0.8	-0.4	-0.8	-1.1	-0.8	-1.2
	SLD	-0.5	-0.8	-0.4	-0.8	-0.8	-0.6	-1.0
ID	Autism	2.0	0.4	0.0	-0.4	0.8	0.5	2.2
	ED	-0.5	0.4	-0.5	0.4	-0.2	0.0	1.1
	OHI	-1.8	-0.5	-0.8	-0.5	-1.3	-.08	-0.1
	SLD	-1.0	-0.4	-0.8	-0.5	-1.0	-0.6	0.1
OHI	Autism	3.8**	0.8	0.8	0.0	2.1	1.3	2.3
	ED	1.3	0.8	0.4	0.8	1.1	0.8	1.2
	ID	1.8	0.5	0.8	0.8	1.3	0.8	0.1
	SLD	0.8	0.0	0.0	0.0	0.3	0.3	0.2
SLD	Autism	3.0**	0.8	0.9	0.0	1.8	1.1	2.1*
	ED	0.5	0.8	0.4	0.8	0.8	0.6	1.0
	ID	1.0	0.4	0.8	0.5	1.0	0.6	-0.1
	OHI	-0.8	0.0	0.0	0.0	-0.3	-0.3	-0.2

Note. [1]The eight domains are: 1-Knowledge of Strengths and Limitations and Support, 2- Disability Awareness, 3-Persistence, 4-Proactive Involvement, 5-Goal Setting and Attainment, 6-Employment, and 7-Self-Advocacy.
[2]Disability groups: Emotional Disturbance (ED), Intellectual Disabilities (ID), Other Heath Impairments (OHI), and Specific Learning disabilities (SLD).
* $p < .05$, ** $p < .01$.

Summary of Results Section

Findings from multivariate analysis of variance revealed substantial influence of disability categories on TAGG full scores and TAGG domain scores across the three TAGG versions. Disability category statistically accounted for variation on seven out of the eight domains of the Professional TAGG version, seven out of the eight domains of the Family TAGG version, and four out of the seven domains of the Student TAGG version. Generally, disability categories such as emotional disturbance, autism, and intellectual disabilities scored lower than specific learning disabilities and other health impairments. Also, results revealed that gender significantly accounted for variation on the Family TAGG version, Student TAGG version, one out of the eight domains of the Professional TAGG version, three out of the eight domains of the Family TAGG version, and one out of the seven domains of the Student TAGG version.

In general, the group of students with emotional disturbance scored the lowest and the group with specific learning disabilities scored the highest. These results are similar to findings from other studies, such as the Newman, Wagner, Cameto, and Knokey (2009) study on the NLTS2 wave three.

Discussion

The purpose of this study was to explore the influence of disability and gender on Professional, Family, and Student TAGG full and domain scores. Results from this study extended the knowledge about differences and similarities between males and females, and differences and similarities between different disability categories as resulted from TAGG scores across the Professional, Family, and Student TAGG versions. This study also provided validity-related evidence to support the validity of the TAGG based on the examination of the influence of gender and disability variables on the TAGG scores.

Summary of Major Findings

Influence of gender on TAGG scores. Results from this study showed no overall statistically significant differences related to gender over the three versions. Results also showed no significant differences between males and females on 18 out of the 23 domains. This majority of no significant differences related to gender on TAGG scores agreed with findings from Newman, Wagner, Cameto, and Knokey (2009) that showed no significant differences related to gender for youth with disabilities on employment status, number of jobs held, average duration of jobs, wages, benefits, job accommodations, job satisfaction, secondary school enrollment, intensity of postsecondary school enrollment, disclosure of disability, accommodations received in postsecondary school, or completion of postsecondary school.

On the other hand, findings from this study showed significant differences related to gender on the TAGG Family and TAGG Student versions, and five out of the 23 domains. Females scored higher than males from the perspective of family members

as shown by statistically significant differences on the Family TAGG scores. More specifically, female scores on the Family TAGG version were significantly higher than male scores on the (a) Knowledge of Strengths and Limitations, (b) Persistence, and (c) Self-Advocacy domains. The effect size η^2 values of gender influence for these three domains ranged between .015 and .021, and this reflects small effect sizes (Cohen, 1988). Also, the observed power of the test varies from .515 to .646, which reflects weak observed powers. These results could lead to the conclusion that the significant meanings of these statistically significant differences of the influence of gender on the Family TAGG scores across the previously mentioned three domains are limited. More research with larger sample sizes may provide better understanding on this point. Professionals scored males and females approximately the same, except for the Employment domain where Professional TAGG scores showed males higher average full score with a medium to high effect size ($\eta^2 = .011$) and weak observed power (.506). This finding aligned with what is known in the literature pertaining to better scores and outcomes of males over females in the area of employment. These findings aligned partially with findings from Fabian (2007) where gender was among the significant factors that predicted employment and with the finding from Newman, Wagner, Cameto, and Knokey (2009) that showed significant differences in favor of males related to gender in hours worked per week.

Disagreements of TAGG scores that exist from the perspective of professionals, family members, or students over certain domains provide an opportunity for further discussions between the three parties to reach better understanding of expected transition outcomes and to generate more accurate transition annual goals. Preparing

students and family members, and professionals on TAGG versions through appropriate training material can improve the accuracy of rating the TAGG items and agreement across the three TAGG versions.

Disagreement across different studies may occur because of the use of different assessments or different versions of the same assessment. Results that came from assessments completed by professionals reflect the perspective of professionals and it is more appropriate to compared them with results from similar assessments that had been completed by professionals.

Influence of disability on TAGG scores. Findings from this study supported the existence of influence of disability category on TAGG scores. This influence appeared clear on all levels of analyses. Disability accounted for variation on the full scores of the TAGG three versions, on each TAGG version full score, and on each TAGG version domain scores. In general, students with emotional disturbance scored the lowest, and students with specific learning disabilities scored the highest. Results on Table 7 reveal the degree of diversity across different domains from the perspective of professionals, family members, and students. Differences varied from small effect size and weak observed power (e.g., Self-Advocacy domain on Professional TAGG version) to large effect size and strong observed power (e.g., Proactive Involvement domain on Professional TAGG version). In general, these findings aligned with findings from Shogren, Wehmeyer, Palmer, Soukup et al.'s (2007) exploration of student scores from the AIR and ARC self-determination assesments. They reported differences and similarities due to different self-determination assessments, versions, and disability groups. Also, Wehmeyer, Palmer, Soukup, Garner, and Lawrence (2007)

reported statistically significant differences on self-determination planning knowledge and skills by different disability group. They reported differences between SLD, ED, OHI, and ID groups, which provide partial agreement between the current study findings and previous research findings.

Results from this study related to disability influence on TAGG scores also aligned with findings from the Newman, Wagner, Cameto, and Knokey (2009) study that showed several significant differences between different disability categories in post high school employment and education outcomes.

In Newman et al. (2009), youth with intellectual disabilities (31%) and youth with emotional disturbance (42%) were less likely to be employed with statistically significant differences in percentages than youth with other health impairment (68%) and youth with specific learning disabilities (64%). In the current study, Table 7 depicts statistically significant differences on the Employment domain related to disability across the TAGG Professional, Family, and Student versions. Figure 2 and Table 6 show how students with specific learning disabilities scored significantly higher than students with intellectual disabilities and students with emotional disturbance on Professional TAGG full scores. Students with specific learning disability scored significantly higher than students with emotional disturbance and students with autism on the Family TAGG full score (Figure 3, Table 6). Also, students with specific learning disabilities scored significantly higher than students with autism on the Student TAGG full score (Figure 4, Table 6).

These differences in TAGG scores related to disability agree with differences related to disability from the NLTS2 (Newman et al., 2009).

Disability's Pattern of Domain Scores

The current study emphasized the influence of disabilities on TAGG full and domain scores across the three versions. Further exploration of the pattern of domain scores for each disability category may confirm that each disability group has its own pattern of domain scores. Understanding the pattern of domain scores for each disability may highlight specific areas of weaknesses and strengths of non-academic behaviors and experiences for each disability group. This could help curriculum developers to develop more effective transition curricula based on each disability category pattern of common strengths and weaknesses. It could also facilitate the design of transition education interventions that target specific TAGG domains to meet the specific non-academic behavior needs for each disability group.

Analyzing disability's pattern of domain scores may provide a new method of identifying student disability by utilizing pattern recognition as an alternative diagnosing method.

Implications for Practice

Findings from this study suggest multiple implications that IEP teams can utilize when planning for students' annual transition goals and activities. First, by utilizing the TAGG, IEP teams can be confident that they are using a sound transition assessment that assesses students' non-academic behaviors associated with postschool success. Second, IEP teams can generate a map that illustrates the student strengths and weaknesses for the non-academic behaviors that are associated with postschool

success. Third, IEP teams can generate assessment-based annual transition goals in the area of non-academic behaviors to meet the students' specific needs and preferences. Fourth, IEP teams can generate a baseline for a student's current performance and benchmarks to be met after a period of time. Fifth, the IEP team can monitor the student's progress across the different TAGG domains and decide on the effectiveness of a certain intervention and whether to continue with the same intervention or look for an alternative one. Sixth, the IEP team can reach a consensus on the students' non-academic strengths and weaknesses by discussing critical disagreements on TAGG domain scores across the three versions. Seventh, in the near future, the IEP team can utilize the advantages of a web-based application of the TAGG that is expected to provide a major reduction in the current time of assessing and generating non-academic annual transition goals for each student.

Future Research

Validation of assessment is a dynamic and continuous process. More validation studies are needed to accumulate validity-related evidence over different areas of validity aspects to support the validity of the TAGG (Crocker & Algina, 1986; Gay & Airasian, 2003; Messick,1995; Salvia & Ysseldyke, 1995, 2004). Translating the TAGG to other languages and conducting construct validation studies across cultures is another area for future research. Conducting correlational studies to explore the influence of other demographic variables such as socioeconomic status, ethnicity, and parent education on TAGG scores, and utilizing advanced statistical analysis techniques, such as structural equation modeling, to answer correlational questions are some examples of suggested future research.

Number of cases per disability group remains the challenge for including other disability categories in the analysis. Larger sample size per group can provide the opportunity for the disability group to be included and can also improve the power of the statistical tests.

Another suggested area for future research is exploring the influence of disability's level of severity as a variable on TAGG full and domain scores. Shogren, Wehmeyer, Palmer, Soukup et al.'s (2007) findings regarding differences and similarities due to different self-determination measures and different groups, including mild and moderate intellectual disability as two different groups, highlight the need for more exploration in the area of severity level of disability.

Replicating this study with a more representative sample can enhance the generalizability of the findings. Another interesting future research area is validating the disability-specific pattern of domains with new samples to test the ability of reaching a pattern recognition identification method. This idea can be explored by looking at each disability category as a single case to explore the common strengths and weaknesses of each disability category across TAGG domain percentages of scores. Percentages of domain scores allow comparing overall performance of each disability category across the TAGG domains and versions. If exploration leads to positive results that support the existence of a distinguished TAGG pattern for each disability category, then this TAGG disability pattern could be used as an identification method to identify a student's disability category based on the student's TAGG pattern. If so, then we would have what we could call the "TAGG Pattern Recognition" method that could help in identifying a student's disability category as an alternative to

traditional disability diagnosing methods. Since the TAGG domain performance pattern represents the student's strengths and weaknesses in the area of non-academic behaviors and experiences, we could look at the TAGG pattern recognition method as a non-academic strengths and weaknesses identification tool that could also help in generating transition annual goals.

Conclusion

Findings from this study confirmed that students from different gender and disability categories score differently on the TAGG versions and domains. The new perspective of transition-focused education emphasizes the importance of focusing on students' strengths and preferences, rather than focusing only on students' disabilities (Kohler & Field, 2003). The TAGG domain scores for each student can be used to draw a picture of the specific student's strengths and weaknesses. This picture (or pattern) of strengths and weaknesses represents a powerful tool to generate annual transition goals that respond to the student's specific strengths and weaknesses as measured by TAGG domain scores. Also, the TAGG domain scores could be used to monitor the student's progress over time and after implementing certain interventions to measure student progress on TAGG domain scores.

The Professional, Family, and Student TAGG versions provide a powerful method to triangulate the information gathered about student strengths and weaknesses. Agreements across the three versions about strengths or weaknesses in certain domains increase the confidence in the assessing process. Also, disagreements across the three versions raise the concern of the importance of having consistency about the student's real strengths and weaknesses before generating any annual transition goals. Resolving

disagreements can provide an opportunity for professionals, family members, and students to discuss the reasons behind these discrepancies, which improves understanding and communication between the three parties and facilitates students' engagement in the transition planning process, a key indicator of students' postschool success.

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APPENDIX A

The 75-item Transition Assessment and Goal Generator TAGG Professional version

Transition Success Assessment

Professional Version

General instructions:
For each statement, think about the student's behaviors over the last year. Rate on a scale of 1 to 5 how well you think each statement best describes the student's behavior.

1 = rarely performed the action within the past year
2 = performed the action a few times or did not do well when performing the action
3 = performed the action several times or did a fair job of completing this action
4 = performed the activity many times or did a good job of competing this action
5 = performed this activity often or was successful at completing this action

Knowledge of Strengths and Limitations
Successful students know personal areas of mastery and limited ability. When thinking about the last year, indicate how well the student's behavior reflected knowledge of his or her strengths and limitations. Consider only behaviors that indicate *knowledge* of skills and limited abilities in academic and non-academic situations. The student may not use correct terminology but is able to describe strengths and *non-disability related limitations*. The student knows how the strengths and limitations affect him or her. The student identifies situations in which successes and failures may occur.

	Rarely				Often
1. The student told someone about his or her strengths.	1	2	3	4	5
2. The student told someone what he or she does well.	1	2	3	4	5
3. The student told someone his or her limitations.	1	2	3	4	5
4. The student told someone what he or she has trouble doing.	1	2	3	4	5
5. The student expressed accurate information about his or her academic strengths.	1	2	3	4	5
6. The student expressed accurate information about his or her academic limitations.	1	2	3	4	5
7. The student identified academic situations when assistance was needed.	1	2	3	4	5
8. The student identified academic situations where he or she would like experience success.	1	2	3	4	5

Scoring 1 = rarely 3 = sometimes 5 = often or well done

Actions Related to Strengths and Limitations
Successful individuals seek situations to use their strengths while minimizing their limitations. Think about the student's behaviors within the last year that reflect his or her ability to act, develop, or build upon personal strengths to compensate for limitations. Consider the times when the student looked for situations, created new strategies in a situation, or changed a situation to use personal strengths and minimize weaknesses or limitations. There may have been situations in which the student made choices without considering weaknesses.

	Rarely				Often
9. The student finds situations to use his or her strengths.	1	2	3	4	5
10. The student is aware of his or her strengths, but does *not* seek situations where the strengths are utilized.	1	2	3	4	5
11. The student finds situations where his or her limitations are minimized.	1	2	3	4	5
12. The student knows his or her weaknesses but does not consider the weaknesses when making choices.	1	2	3	4	5
13. The student creates new strategies to compensate for his or her limitations.	1	2	3	4	5

Disability Awareness
Successful individuals know they have a disability and can express needs to others in a non-stigmatizing manner. Individuals demonstrate knowledge of the disability and can express positive and negative aspects. They express information such as how the disability affects life and what supports are needed and legally allowed to compensate in various situations. The student needs to be able to place the disability within the context of his or her life and is not defined by the disability.

	Rarely				Often
14. The student expressed an understanding of the word "disability."	No				Yes
15. The student told someone that he or she has a disability.	No				Yes
16. The student told someone accurate information about his or her disability.	1	2	3	4	5
17. The student uses the least stigmatizing disability label that results in getting most support.	1	2	3	4	5

Scoring 1 = rarely 3 = sometimes 5 = often or well done

18. This student expressed the type of accommodations or supports needed for his or her disability.	1	2	3	4	5
19. The student views the disability as only one aspect of his or her life.	1	2	3	4	5
20. The student views the disability as a positive aspect of his or her life.	1	2	3	4	5
21. The student explained to friends that he or she receives special education services.	1	2	3	4	5
22. The student talks to parents about his or her disability.	1	2	3	4	5

Persistence
Persistent students have a belief in their own ability to overcome adversity. Indications of persistence may include spending ample time or effort to reach a goal. The student may also modify strategies as needed to stay on a task. The student accepts failure as an opportunity to learn to succeed.

	Rarely				Often
23. Not giving up in school is important to the student.	1	2	3	4	5
24. The student keeps working until he or she accomplishes a goal.	1	2	3	4	5
25. The student utilizes different strategies as needed to continue staying on task.	1	2	3	4	5
26. The student keeps working to achieve a goal, even when it becomes hard.	1	2	3	4	5
27. The student learns from mistakes and does better next time.	1	2	3	4	5

Scoring 1 = rarely 3 = sometimes 5 = often or well done

Proactive Involvement
Successful individuals effectively interact with family, friends, classmates, educators, and other adults while participating in school organizations or in community social organizations.

	Rarely				Often
28. The student maintains one or more good friendships.	No				Yes
29. The student successfully participates in small groups to complete projects.	1	2	3	4	5
30. The student participates in community organizations, such as sports clubs or organized social groups.	1	2	3	4	5
31. The student participates in school teams, clubs, or other groups.	1	2	3	4	5
32. The student successfully interacts with teachers, family, and other adults.	1	2	3	4	5

Goal Setting and Attainment
Goal-oriented students have set and attained goals in the past and can plan to set and attain goals now and in the future. Students who are successful reaching postsecondary goals define realistic goals that match interests and skills. They are able to break long-term goals into manageable steps, continuously monitor their progress, problem-solve by using supports, and adjust goals as needed based upon feedback. Goal-oriented students tend to prioritize and complete smaller goals or steps in a logical order to achieve a larger goal.

	Rarely				Often
33. The student defined the word "goal."	No				Yes
34. The student learned how to set a goal and make it happen.	1	2	3	4	5
35. The student talks about the importance of having goals.	1	2	3	4	5
36. The student expressed the importance of having postschool goals that match his or her interests and skills.	1	2	3	4	5
37. The student identified the possible consequences of *not* setting goals.	1	2	3	4	5

Scoring 1 = rarely 3 = sometimes 5 = often or well done

38. The student set goals that match his or her strengths and interests while taking into consideration what the family or community wants him or her to do.	1 2 3 4 5
39. The student creates short-term goals to attain long-term goals.	1 2 3 4 5
40. The student develops plans to attain his or her goals.	1 2 3 4 5
41. The student uses plans he or she develops to attain goals.	1 2 3 4 5
42. The student determines the effectiveness of his or her plans to attain goals.	1 2 3 4 5
43. The student adjusts plans to attain goals if they do *not* work.	1 2 3 4 5
44. After completing the first step of a goal, the student moves on to the next step.	1 2 3 4 5
45. After attaining one goal, the student moves on to the next goal.	1 2 3 4 5
46. The student attained at least one transition goal.	No Yes

Employment
There is a relationship between attainment of job readiness skills while in high school and postschool employment outcomes. Beneficial student behaviors include expressing a desire or need for a job, and those related to job readiness skills such as attitudes, participating in a job training program, or working as an intern or apprentice.

	Rarely **Often**
47. The student expresses wanting a job.	1 2 3 4 5
48. The student expresses wanting a job that matches his or her career interests and skills.	1 2 3 4 5
49. The student actively looked for a paid job.	1 2 3 4 5

Scoring 1 = rarely 3 = sometimes 5 = often or well done

50. The student demonstrates job readiness skills, such as being on time, completing work as assigned, or working cooperatively.	1 2 3 4 5
51. The student's self-care habits, such as personal hygiene or clothing choices, match career interests.	1 2 3 4 5
52. The student successfully participated in a career technology or job-training program.	No Yes
53. The student had an unpaid job, such as working for a family member.	No Yes
54. The student had an unpaid internship or apprenticeship.	No Yes
55. The student had a paid job.	No Yes

Self-Advocacy
Students who are self-advocates look for and use various resources to learn more about their disabilities, legal rights, and supports or accommodations. They appropriately disclose their disability, actively participate in transition IEP meetings, recall transition goals outside of the IEP meeting, request appropriate supports or accommodations needed to obtain services according to legal rights, and know documentation required.

	Rarely Often
56. The student uses the internet or other sources to understand his or her disability, legal rights, supports, or accommodations.	1 2 3 4 5
57. The student identifies accommodations that are effective for him or her.	1 2 3 4 5
58. The student identifies accommodations that are *ineffective* for him or her.	1 2 3 4 5
59. The student requested a new accommodation when the first one was *not* effective.	1 2 3 4 5
60. The student asks for support only when needed.	1 2 3 4 5
61. The student talked during his or her IEP meeting.	1 2 3 4 5

Scoring 1 = rarely 3 = sometimes 5 = often or well done

62. The student told the IEP team his or her postschool goals.	1	2	3	4	5
63. The student discussed his or her present level of performance at the IEP meeting.	1	2	3	4	5
64. At the IEP meeting, the student explained how his or her course of study will assist in achieving postschool goals.	1	2	3	4	5
65. The student led his or her IEP meeting.	1	2	3	4	5

Supports

Students with disabilities who have a support group tend to experience more postschool success. Support individuals consist of persons who have a positive influence on the student by providing realistic expectations, modeling appropriate behaviors and strategies to strengthen skills, and assisting the student in setting and modifying goals. Successful students can identify, in a variety of situations, individuals who are a positive source of support and those who are not positive sources of support. Successful students appropriately create, maintain, and utilize a positive support system by identifying when support is necessary, what type of support needed, and seek individuals both inside and outside their current support system for the needed support.

	Rarely				Often
66. The student distinguishes between individuals who are a positive source of support from those who are *not*.	1	2	3	4	5
67. The student identifies situations when support people are needed.	1	2	3	4	5
68. The student identifies the support person needed for a specific situation.	1	2	3	4	5
69. The student accepts help from support people when offered.	1	2	3	4	5
70. The student only uses support people when needed, *not* to get out of doing things.	1	2	3	4	5
71. The student maintains the support network by showing appreciation or reciprocity.	1	2	3	4	5

Scoring 1 = rarely 3 = sometimes 5 = often or well done

Utilization of Resources
Successful students with disabilities may look for individuals or agencies outside their immediate network for support in specific situations as well as appropriately use the help available at school. Students may use available resources to learn about possible support services or community agencies. They actively look for assistance from appropriate community agencies.

	Rarely				Often
72. The student actively seeks people to help with a situation when the current support people *cannot* help.	1	2	3	4	5
73. The student uses available support people at school or work.	1	2	3	4	5
74. The student uses the internet to access information for possible support services or community agencies.	1	2	3	4	5
75. The student seeks assistance from community agencies.	1	2	3	4	5

APPENDIX B

The 34-item Transition Assessment and Goal Generator TAGG Professional version

Professional Version

Transition Assessment & Goal Generator

Name of Person Completing Form _____ **Date Administered** _____

General Instructions
For each statement, think about the student's behaviors *over the last year*. Rate on a scale of 1 to 5 how well you think each statement best describes the student's behavior.

1 = rarely performed the action within the past year
2 = performed the action a few times or did not do well when performing the action
3 = performed the action several times or did a fair job of completing this action
4 = performed the activity many times or did a good job of competing this action
5 = performed this activity often or was successful at completing this action

Strengths and Limitations
Successful students express personal areas of mastery and limited ability. Students are able to describe personal strengths and limitations, but may not use correct terminology. Students know how the strengths and limitations affect him or her, and identify situations in which successes and failures may occur.

	Rarely				Often
1. The student told someone what he or she does well.	1	2	3	4	5
2. The student told someone what he or she has trouble doing.	1	2	3	4	5
3. The student expressed accurate information about his or her academic strengths.	1	2	3	4	5
4. The student identified situations when assistance was needed.	1	2	3	4	5

Disability Awareness
Successful individuals know they have a disability and can express needs to others in a non-stigmatizing manner. Individuals demonstrate knowledge of the disability and can express positive and negative aspects. They express information such as how the disability affects life and what supports are needed and legally allowed to compensate in various situations. The student needs to be able to place the disability within the context of his or her life and is not defined by the disability.

	Rarely				Often
5. The student uses the least stigmatizing disability label that results in getting most support.	1	2	3	4	5
6. This student expressed the type of supports or accommodations needed for his or her disability.	1	2	3	4	5

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7. The student views the disability as only one aspect of his or her life.	1	2	3	4	5
8. The student explained to others that he or she receives special education services.	1	2	3	4	5

Persistence
Persistent students have a belief in their own ability to overcome adversity. Indications of persistence may include spending ample time or effort to reach a goal. The student may also modify strategies as needed to stay on a task. The student accepts failure as an opportunity to learn to succeed.

	Rarely				Often
9. Not giving up in school is important to the student.	1	2	3	4	5
10. The student keeps working until he or she accomplishes a goal.	1	2	3	4	5
11. The student utilizes different strategies as needed to continue staying on task.	1	2	3	4	5
12. The student keeps working to achieve a goal, even when it becomes hard.	1	2	3	4	5
13. The student learns from mistakes and does better next time.	1	2	3	4	5

Interacting With Others
Successful individuals effectively interact with family, friends, classmates, educators, and other adults while participating in school organizations or in community social organizations.

	Rarely				Often
14. The student successfully participates in small groups to complete projects.	1	2	3	4	5
15. The student participates in school or community organizations, such as sports clubs or organized social groups.	1	2	3	4	5
16. The student successfully interacts with teachers, family, and other adults.	1	2	3	4	5

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Goal Setting and Attainment
Goal-oriented students have set and attained goals in the past and can plan to set and attain goals now and in the future. Students who are successful reaching postsecondary goals define realistic goals that match interests and skills. They are able to break long-term goals into manageable steps, continuously monitor their progress, problem-solve by using supports, and adjust goals as needed based upon feedback. Goal-oriented students tend to prioritize and complete smaller goals or steps in a logical order to achieve a larger goal.

	Rarely				Often
17. The student set goals that match his or her strengths and interests while taking into consideration what the family or community wants him or her to do.	1	2	3	4	5
18. The student creates short-term goals to attain long-term goals.	1	2	3	4	5
19. The student uses plans he or she develops to attain goals.	1	2	3	4	5
20. The student adjusts plans to attain goals if they *do not* work.	1	2	3	4	5
21. After attaining one goal, the student moves on to the next goal.	1	2	3	4	5
22. The student attained at least one transition goal.	No			Yes	

Employment
Students who have had a paid job during high school, including in the summer or on weekends, have a greater likelihood of postschool success. Beneficial student behaviors include expressing a desire or need for a job, especially one matching interests and abilities.

	Rarely				Often
23. The student expresses wanting a job.	1	2	3	4	5
24. The student expresses wanting a job that matches his or her career interests and skills.	1	2	3	4	5
25. The student had an unpaid job, such as working for a family member.	No			Yes	
26. The student had a paid job.	No			Yes	

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Student Involvement in the IEP
Students who are involved in their IEP meeting actively participate in or lead transition IEP meetings and are able to discuss their level of performance and academic plan in relation to their postschool goals.

	Rarely				Often
27. The student told the IEP team his or her postschool goals.	1	2	3	4	5
28. The student discussed his or her present level of performance at the IEP meeting.	1	2	3	4	5
29. At the IEP meeting, the student explained how his or her course of study assists in achieving postschool goals.	1	2	3	4	5
30. The student led his or her IEP meeting.	1	2	3	4	5

Support Community
Students with disabilities who have a support group tend to experience more postschool success. Support individuals consist of persons who have a positive influence on the student by providing realistic expectations, modeling appropriate behaviors and strategies to strengthen skills, and assisting the student in setting and modifying goals. Successful students can identify, in a variety of situations, individuals who are a positive source of support and those who are not positive sources of support. Successful students appropriately create, maintain, and utilize a positive support system by identifying when support is necessary, what type of support is needed, and seek individuals both inside and outside their current support system for the needed support.

	Rarely				Often
31. The student distinguishes between individuals who are a positive source of support from those who are *not*.	1	2	3	4	5
32. The student accepts help from support people when offered.	1	2	3	4	5
33. The student only uses support people when needed, *not* to get out of doing things.	1	2	3	4	5
34. The student seeks assistance from community agencies.	1	2	3	4	5

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