TAGG

TECHNICAL MANUAL

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Chapter One

Introduction and Overview of the TAGG

The purpose of this chapter of the technical manual is to give information about the purpose of the *Transition Assessment and Goal Generator* (TAGG). Specifically, we will detail the importance of creating a new transition assessment and will then fully describe each of the constructs underlying the TAGG assessment. Please note that details regarding the characteristics of the students for whom this assessment is appropriate can be found in Chapter 2 of this technical manual. For now, it suffices to say that this assessment is appropriate for most students who have been diagnosed as having mild to moderate disabilities in a number of categories. Also note that details about the processes employed by the research team to identify the constructs underlying the TAGG can be found in Chapter 3 of this technical manual.

Necessity for the Creation of the TAGG

The purpose of the Individuals with Disabilities Education Act (IDEA, 2004) includes preparing students for postsecondary employment and further education. To do this, teachers, families, and students work together to develop operationalized annual transition goals to move the student toward attaining postsecondary goals. Researchers have found academic skills alone are not sufficiently related to the attainment of transition goals by students with disabilities (Benz, Lindstrom, & Yovanoff, 2000).

Because academic skills alone are not sufficiently related to the attainment of these transition goals (Benz et al., 2000), the IDEA (2004) mandates Individualized Education Programs (IEPs) for secondary students of transition age include postsecondary employment, education and, as needed, independent living transition goals (Wehman & Targett, 2012). In order to develop these transition goals, the law also requires special educators to use transition assessments in writing postsecondary transition goals (Miller, Lombard, & Corbey, 2007), and Indicator 13 regulations require annual transition goals be written using students' transition needs identified from the age-appropriate transition assessment results (NSTTAC, 2013).

At present many of these postsecondary and annual transition goals are written with the aid of assessment results that are not designed for that purpose (McConnell, 2012). Studies have been conducted to find numerous teaching practices, programs, services, and placements associated with postsecondary education and employment,

but none of the studies identified associated student behaviors. This chapter of the technical manual will describe the development a new transition assessment, the *Transition Assessment and Goal Generator* (TAGG), and the constructs underlying its items. The purpose of the TAGG is to investigate the needs of each student based on their present levels of attaining the non-academic skills and behaviors research has identified as necessary for postsecondary employment and education outcomes. Specifically, the TAGG connects educators' practice of writing academic goals to a new set of non-academic behaviors associated with postsecondary employment and education. In order to do this, the TAGG develops profiles of students' attainment of these non-academic skills and then suggests example goals for IEP teams to consider when writing annual and postsecondary transition goals.

The TAGG was designed to help educators identify non-academic behaviors associated with postsecondary employment and education for which students need IEP Transition goals. The TAGG can:

- promote the voice of the family and student in the development of the IEP transition plan,
- identify non-academic behaviors in which the student is strong,
- pinpoint the non-academic behaviors the student has not mastered,
- extend the summary of current performance levels beyond academics, and
- generate goals designed to build on students' relative strengths and address students' limitations.

TAGG Constructs

Initial Constructs Tested

Chapter 3 of this technical manual details the procedures the research team used to develop the constructs underlying the TAGG assessment. After a thorough literature review, ten constructs were identified as encompassing the non-academic skills and behaviors necessary for students with mild to moderate disabilities to undertake that will lead to employment and education outcomes. These ten constructs are:

- *Knowledge of Strengths and Limitations*,
- *Actions Related to Strengths and Limitations*,
- *Disability Awareness*,
- *Persistence*,
- *Proactive Involvement*,
- *Goal Setting and Attainment*,
- *Employment*,
- *Self-Advocacy*,
- *Supports*, and
- *Utilization of Resources*.

TAGG Constructs

The initial review of transition research identified ten behavior clusters (see McConnell, Martin, Juan, Hennessey, Terry, Kazimi et al., 2013 for a detailed explanation of all ten behavior clusters); however, analysis of the clusters indicated eight TAGG constructs. This process is further explained in Chapter 3. Listed below are the eight constructs this version of the TAGG assesses and the behaviors associated with those constructs. Refer to Table 1 for a list of the constructs used in the TAGG and references used to develop those constructs.

Strengths and Limitations. The construct of *Strengths and Limitations* refers to the abilities students with mild to moderate disabilities demonstrate regarding identification of their strengths and weaknesses, whether those are academic or non-academic in nature. Students who have

knowledge of their own strengths and limitations are able to demonstrate this knowledge as well as communicate it to others. They are accurate in what they share about their academic strengths and also show the ability to identify situations where they will be successful (e.g., Gerber, Ginsberg, & Reiff, 1992; Higgins, Raskind, Goldberg, & Herman, 2002; Lachapelle, Wehmeyer, Haelewyck, Courbois, Keith, & Schalock, 2005). Please note that the conceptualization of strengths and limitations may or may not be related to the student's disability, but may be in other areas. This construct on the TAGG was operationalized by McConnell et al. (2013) as *Knowledge of Strengths and Limitations*; the behavior cluster McConnell and colleagues identified as *Actions Related to Strengths and Limitations* cannot be operationalized by the TAGG items at this time.

Disability Awareness. The construct of *Disability Awareness* refers to the abilities students exhibit regarding awareness of their specific disability, not their personal weaknesses or limitations. Students who are strong in disability awareness describe their disability in language that is not stigmatizing, and view the disability as one facet of their lives. They can describe the type of supports they need to accommodate their disability. These students are also able to explain that they receive special education services and may seek out more information about their disability to better understand it (e.g., Aune, 1991; Raskind, Goldberg, Higgins, & Herman, 1999; Thoma & Getzel, 2005).

Persistence. The construct of *Persistence* applies to all students, but is particularly important for those with disabilities given the struggles they may have to face as a result of that disability. Students who have high TAGG scores in *Persistence* keep working until they have accomplished a task, and value not giving up in school. Successful students with disabilities often show persistence in the time spent studying compared to non-disabled peers. If they are having difficulty with a task or make a mistake, they adopt the lessons they have learned or try different strategies to keep making progress (e.g., Fabian, 2007; Fabian, Lent, & Willis, 1998; Greenbaum, Graham, & Scales, 1995; Skinner, 2004).

Interacting with Others. As originally conceptualized by McConnell et al. (2013), this behavior cluster included more information that was not able to be operationalized by the TAGG. For the TAGG, then, *Interacting with Others* extends from participating with other students to complete school projects in class to participating in community organizations. These students effectively interact with teachers, family members, and other adults (e.g., Doren & Benz, 1998; Goldberg et al., 2003; Halpern, Yovanoff, Doren, & Benz, 1995; Liebert, Lutsky, & Gottlieb, 1990).

Goal Setting and Attainment. The construct of *Goal Setting and Attainment* contains much information, and has been shown to be an area of great need for students who exhibit mild to moderate disabilities. Students who have strong goal setting and attainment skills take into account their strengths and weaknesses along with their support community's wishes when they develop goals. They can break long-term goals into short-term goals, and make and use plans to attain their short-term goals. When these students' plans do not work, they change their plan, and when they attain a short-term goal, they move on to their next goal. Students who score high in this area have typically met at least one of their transition goals (e.g., Gerber et al.,

1992; Goldberg et al., 2003; Thoma & Getzel, 2005).

Employment. The extent to which a student with mild to moderate disabilities has outside employment during high school has consistently shown to be a large predictor of outcomes that the student will attain upon exiting high school. For the TAGG, the *Employment* construct includes behaviors related to employment during high school, and plans for employment after high school. Students who score high on the *Employment* construct have had a paid or unpaid job during high school, and express that they want to continue working after high school, particularly in a job that matches their interests (e.g., Dunn & Shumaker, 1997; Fourqurean, Meisgeier, Swank, & Williams, 1991; McDonnall, 2010).

Student Involvement in the IEP. When originally conceptualized by McConnell et al. (2013), the construct of *Student Involvement in the IEP* was entitled *Self-Advocacy* and included many self-advocacy behaviors a student could employ that were not observable by school personnel. Thus, for the TAGG, this behavioral cluster was conceptualized as the advocacy behaviors a student exhibits during their involvement in the planning of and/or the actual conduct of the IEP meeting. Students who are actively involved in their IEP meetings describe their current performance levels and tell the team their postsecondary goals. They explain how their current course of study is leading them to their postsecondary goal and advocate for themselves by demonstrating the ability to ask teachers for necessary and appropriate accommodations. Ideally, students who are doing well in this construct lead their IEP meetings (e.g., Aune, 1991; Gerber et al., 1992; Gerber et al., 2004; Goldberg et al., 2003; Halpern et al., 1995; Skinner, 2004).

Support Community. The construct of *Support Community* combines *Supports* and *Utilization of Resources* from McConnell et al.'s (2013) ten behavior clusters because the supports and resulting behaviors to access those supports or resources exist in the community beyond the student's school or family. Students who score high on the *Support Community* construct can recognize support people who provide positive support, and only use support people when they need them. These students also accept support when it is offered, and seek assistance from community agencies (e.g., Gerber et al., 1992; Goldberg et al., 2003; Madaus, 2006; McNulty, 2003; Thoma & Getzel, 2005; Whitney-Thomas & Moloney, 2001).

TAGG Versions

As previously stated, the purpose of the TAGG is to investigate the needs of each student by determining their present levels of attainment of the non-academic skills shown to predict postschool outcomes. In order to do this, three versions of the TAGG were designed. These three versions are appropriate for use by the professional special educator working with the student, the student's family member, and the student himself. The three TAGG assessments are parallel and data from all three sources will be given by the individuals about the student's observed behaviors. The three versions of the TAGG were developed because different individuals are able to observe a variety of behaviors exhibited by the student.

Annual transition goals are generated for the student based on responses to each of the three versions. Goals can be generated

using the scores from only one version of the assessment, but completing two or more versions allows the IEP team to note differences in the student's behavior in school and in the home. Additionally, including the student version as part of a transition assessment promotes the voice of the student, thereby increasing his engagement in the transition planning process. More information about the individuals who can appropriately respond to the three versions of the TAGG regarding a student's behaviors can be found in Chapter 2 of this technical manual.

Characteristics of the TAGG

The TAGG was designed for use with students with mild to moderate disabilities whose plans include postsecondary employment and further education, such as vocational training or college. It can be completed and scored in about 20 minutes. The three TAGG versions include parallel items representing behaviors associated with postsecondary employment and education. The TAGG Profile includes the score report, a written statement of current performance levels to be included in the IEP, and suggested goals based on the assessment responses.

The TAGG was developed following the *Standards for Educational and Psychological Testing* (1999) endorsed by the American Educational Research Association, American Psychological Association, and National Council on Measurement in Education. It is designed to assess student performance in non-academic areas associated with positive postsecondary outcomes. More information about the structure of the assessment, scoring, measures of reliability, and various studies designed to collect validity evidence can be found in Chapters 3, 4, and 5 of this technical manual. The *Transitional Assessment and Goal Generator Technical Manual* (2014) can be used to clarify instructions and improve communication of scores to the IEP team. The *Transitional Assessment and Goal Generator User's Guide*, currently under development, will provide explanation of the administration procedures along with screen shots and sample forms.

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Table 1

TAGG Constructs and References

Construct	References
Strengths and Limitations	Aune, E. (1991). Gerber, P., Ginsberg, R., & Reiff, H. (1992). Goldberg, R., Higgins, E., Raskind, M., & Herman, K. (2003). Greenbaum, B., Graham, S., & Scales, W. (1995). Higgins, E., Raskind, M., Goldberg, R., & Herman, K. (2002). Lindstrom, L., Doren, B., & Miesch, J. (2011). Madaus, J. (2006). McNulty, M. (2003). Raskind, M. H., Goldberg, R., Higgins, E., & Herman, K. L. (1999). Raskind, M., Goldberg, R., Higgins, E., & Herman, K. (2002). Sarver, M. (2000). Skinner, M. (2004). Thoma, C., & Getzel, E. (2005).
Disability Awareness	Aune, E. (1991). Gerber, P., Ginsberg, R., & Reiff, H. (1992). Gerber, P., Price, L., Mulligan, R., & Shessel, I. (2004). Goldberg, R., Higgins, E., Raskind, M., & Herman, K. (2003). Greenbaum, B., Graham, S., & Scales, W. (1995). Higgins, E., Raskind, M., Goldberg, R., & Herman, K. (2002). Raskind, M., Goldberg, R., Higgins, E., & Herman, K. (1999). Raskind, M., Goldberg, R., Higgins, E., & Herman, K. (2002). Sarver, M. (2000). Skinner, M. (2004). Thoma, C., & Getzel, E. (2005). “
Persistence	Gerber, P., Ginsberg, R., & Reiff, H. (1992). Goldberg, R., Higgins, E., Raskind, M., & Herman, K. (2003). Greenbaum, B., Graham, S., & Scales, W. (1995). Raskind, M. H., Goldberg, R., Higgins, E., & Herman, K. L. (1999). Raskind, M., Goldberg, R., Higgins, E., & Herman, K. (2002). Sarver, M. (2000). Skinner, M. (2004).
Interacting with Others	Doren, B., & Benz, M. (1998). Goldberg, R., Higgins, E., Raskind, M., & Herman, K. (2003). Halpern, A., Yovanoff, P., Doren, B., & Benz, M. (1995). Liebert, D., Lutsky, L., & Gottlieb, A. (1990).
Goal Setting and Attainment	Aune, E. (1991 Benz, M., Lindstrom, L., & Yovanoff, P. (2000). Fabian, E., Lent, R., & Willis, S. (1998). Gerber, P., Ginsberg, R., & Reiff, H. (1992). Goldberg, R., Higgins, E., Raskind, M., & Herman, K. (2003). Raskind, M., Goldberg, R., Higgins, E., & Herman, K. (1999). Raskind, M., Goldberg, R., Higgins, E., & Herman, K. (2002). Sarver, M. (2000).

	Skinner, M. (2004 Thoma, C., & Getzel, E. (2005)
Employment	Baer, R. M., Flexer, R. W., Beck S., Amstutz, N., Hoffman, L., Brothers, J., et al. (2003). Benz, M., Lindstrom, L., & Yovanoff, P. (2000). Benz, M., Yovanoff, P., & Doren, B. (1997). Doren, B., & Benz, M. (1998). Dunn, C., & Shumaker, L. (1997). Fabian, E. (2007). Fabian, E., Lent, R., & Willis, S. (1998). Flexer, R. W., Davison III, A. W., Baer, R. M., Queen, R. M., & Meindl, R. S. (2011). Fourqurean, J., Meisgeier, C., Swank, P., & Williams, R. (1991). Hasazi, S., Gordon, L., & Roe, C. (1985). Hasazi, S., Johnson, R., Hasazi, J., Gordon, L., & Hull, M. (1989). Heal, L. W., & Rusch, F. R. (1995). Leonard, R., D'Allura, T., & Horowitz, A. (1999). Lindstrom, L., Doren, B., & Miesch, J. (2011). McDonnall, M. (2010). McDonnall, M. C. & Crudden, A. (2009). Portley, J. C., Martin, J. E., & Hennessey, M. N. (2012) Rabren, K., Dunn, C., & Chambers, D. (2002). Shandra, C., & Hogan, D. (2008). Sitlington, P., Frank, A., & Carson R. (1993).
Student Involvement in the IEP	Aune, E. (1991). Halpern, A., Yovanoff, P., Doren, B., & Benz, M. (1995). Portley, J. C., Martin, J. E., & Hennessey, M. N. (2012). Skinner, M. (2004). Thoma, C., & Getzel, E. (2005).
Support Community	Benz, M., Lindstrom, L., & Yovanoff, P. (2000). Doren, B., & Benz, M. (1998). Gerber, P., Ginsberg, R., & Reiff, H. (1992) Goldberg, R., Higgins, E., Raskind, M., & Herman, K. (2003). Greenbaum, B., Graham, S., & Scales, W. (1995). Liebert, D., Lutsky, L., & Gottlieb, A. (1990). Lindstrom, L., Doren, B., & Miesch, J. (2011). Madaus, J. (2006). Raskind, M. H., Goldberg, R., Higgins, E., & Herman, K. L. (1999). Raskind, M., Goldberg, R., Higgins, E., & Herman, K. (2002). Sarver, M. (2000). Skinner, M. (2004). Thoma, C., & Getzel, E. (2005)

Chapter Two

Administration of the TAGG

The purpose of Chapter 2 of this technical manual is to provide test administrators with the information they need to correctly administer the three versions (i.e., Professional, Family, and Student) of the *Transition Assessment and Goal Generator* (TAGG) in a way that scores obtained can be interpreted and used correctly. In this chapter we will discuss the following things:

- the specific individuals for whom the TAGG is an appropriate assessment,
- the individuals who should complete the three versions of the TAGG,
- the online system used to administer the TAGG,
- the procedures education professionals need to follow in order to complete the TAGG-P,
- the procedures for distributing the TAGG-F and TAGG-S forms to family members and students,
- the directions for administering the TAGG for all three groups.

Although any person can purchase and complete the appropriate versions of the TAGG, it is generally expected that an education professional will be the primary person around whom the administration of the TAGG will occur. This chapter will make the assumption that the professional educator is the person who will coordinate the administration of the three versions of the TAGG assessment battery.

Individuals for Whom the TAGG is an Appropriate Assessment

Because three different versions of the TAGG exist, three different categories of individuals can respond to the appropriate versions of the TAGG to provide information about the skills and behaviors a student exhibits. Detailed administration procedures and directions regarding the types of information about which the responders will provide are given later in this chapter. At this point, it suffices to say that the three categories of individuals who can suitably respond to TAGG items on the appropriate versions will respond based upon their understanding and knowledge of the skills and behaviors of the student about which they are responding. It is imperative, then, to delineate the particular students for whom the TAGG is an appropriate transition assessment.

As stated in Chapter 1 of this technical manual, the TAGG is an appropriate assessment for many students who have disabilities. Students for whom this assessment is appropriate can have identified disabilities in any one of the 13 disability categories identified by IDEA (2004). It is, however, specifically

recommended for students who may have disabilities but expect to be competitively employed in the future. This includes students whose disabilities may fall in the range of mild to moderate in severity. Some students who have significant disabilities can also appropriately complete the TAGG, provided that their disabilities are such that they would not be precluded from the ability to be competitively employed at some point upon exiting high school. In other words, students who have disabilities severe enough to preclude them from future competitive employment should not take the TAGG, because the results will not provide education professionals with reliable information about potential transition goals. The behaviors inherent in the TAGG items are not appropriate for those students who will not be competitively employed at a future point. The TAGG should only be completed about the skills and behaviors of those students who the educator deems have the opportunity to be competitively employed at a future point after exiting high school, because these are the only students for whom evidence has been collected of the appropriateness of TAGG scores.

Individuals Who Should Complete TAGG Assessments

The TAGG consists of a battery of assessment versions (i.e., Professional, Family, and Student). In order to gain full information about the student so that example transition goals can be generated for inclusion in the student's IEP, it is recommended that all three versions of the TAGG be completed by the appropriate individuals. However, this is not a requirement, and it is suggested that as many TAGG versions be completed as possible in order to gain the most information about the student's skills and behaviors.

After identifying whether or not the TAGG is an appropriate assessment for an individual student, education professionals must then identify the individuals from whom data should be collected regarding the student's non-academic skills and behaviors. Throughout the beginning of this chapter, the term "professional educator" has been used to identify the person who it is assumed will be coordinating the administration of the TAGG. This term will now be defined; definitions of other groups of respondents will also be given.

Professional educators. Professional educators who may appropriately respond to the items on the professional version of the TAGG (TAGG-P) regarding the skills and behaviors exhibited by an individual student are defined as those educators who are responsible for completing the transition plans for that student. This could be a special education teacher, secondary transition coordinator, special education director, school psychologist, rehabilitation counselor, job coach, or other individual. The education professional must have direct knowledge and insight into the student's behaviors over the past year in order to appropriately complete the TAGG-P items.

Family members. Family members should also respond to TAGG items on the Family version (TAGG-F). Family members who can appropriately respond are parents, stepparents, grandparents, legal guardians, or any other family member who may have guardianship or a vested interest as well as in-depth knowledge of the student's behaviors. It is not necessary that the student live with the family member answering the TAGG-F items, provided that the family member has knowledge of the non-academic skills and behaviors exhibited by the student over the past year.

Students. Finally, the student being assessed should complete the Student version of the TAGG (TAGG-S). As stated before, students who can be appropriately assessed by the TAGG are those whom the educator determines have disabilities that do not preclude them from competitive employment at a future point. It is not necessary that a student know how to read to complete the TAGG. Suitable accommodations and variations in assessment procedures are discussed later in this chapter.

Description of the TAGG Assessment

The TAGG assesses the extent to which students have completed or participated in behaviors that have been shown by prior research (e.g., Aune, 1991; Fourqurean, Meisgeier, Swank, & Williams, 1991; Gerber, Ginsberg, & Reiff, 1992; Greenbaum, Graham, & Scales, 1995; Higgins, Raskind, Goldberg, & Herman, 2002; Lachapelle, Wehmeyer, Haelewyck, Courbois, Keith, & Schalock, 2005; Madaus, 2006; Skinner, 2004; Thoma & Getzel, 2005) to be associated with employment and educational outcomes upon exiting high school. The three versions of the TAGG assessment (i.e., Professional, Family, and Student) have parallel item structures. Specifically, the three versions of the TAGG assessment require respondents to answer items about the student under question, which are mapped to one of eight underlying constructs. The eight constructs (i.e., *Strengths and Limitations*, *Disability Awareness*, *Persistence*, *Interacting with Others*, *Goal Setting and Attainment*, *Employment*, *Student Involvement in the IEP*, and *Support Community*) have been previously described in Chapter 1 of this technical manual. A varying number of items have been shown to be necessary to appropriately assess each of the constructs (see Chapter 3 for additional information regarding the structure of the TAGG).

Procedures for Responding to the TAGG Assessment Materials

All TAGG assessment forms may be accessed online through the TAGG website at http://tagg.ou.edu/tagg, which is run through the *Zarrow Center for Learning Enrichment*. More details about obtaining access to the three versions of the TAGG assessment are given in the User's Guide. This portion of the technical manual will be devoted to emphasizing the instructions and procedures for completing the three versions of the TAGG after access is obtained.

Assigning TAGG assessments to students. After obtaining access to the TAGG assessment, professional educators will be able to assign assessments to students and family members. Professional educators can determine which students and family members should respond to the appropriate versions of the TAGG assessment, but must use caution to ensure the student has the characteristics that make the TAGG an appropriate assessment to use to develop annual and postsecondary transition goals. Users are encouraged to reference Chapter 1 to determine if the purpose of the TAGG matches their purpose for its use and also the beginning of Chapter 2 to determine whether or not the student in question can appropriately respond to TAGG items. Following this determination, professional educators will then assign TAGG assessments to individual students. The full battery of TAGG assessments is assigned as a group to each individual student. The profiles and annual transition goals generated will provide the most information when all three versions of the TAGG are completed by the appropriate individuals;

however, this is not a requirement. It is strongly recommended that as many TAGG versions are completed as possible about students' behaviors to gain the most information about students. Professional educators can complete the TAGG-P version of the assessment for each student using the TAGG website. From this website, professional educators can email links for the TAGG-F and TAGG-S versions to the appropriate people or can print out paper versions of the assessment for their use. Please note that the data obtained on these paper versions must be input into the online TAGG website for profiles and annual transition goals to be generated.

Procedures for rating items. When professional educators, family members, and students respond to the three versions of the TAGG assessment about a student, they must think of the skills and behaviors the student currently exhibits and has exhibited in the past year. In order for scoring to be as precise as possible, the reporter or scorer must choose the highest quantifier that portrays an appropriate and accurate depiction of the student's typical behavior(s). Behaviors may be observed currently or within the past year. Please be advised that obtaining answers to all items is imperative to calculating the most complete and accurate scores. Please ensure the individuals responding to the three versions of the TAGG are the individuals for whom the version of the assessment is appropriate so they are able to best answer the questions given to them. Below, we will describe the rating system for each of the three versions of the assessment.

TAGG-P. There are a number of different options for administration of the TAGG; however, in order for scores to be calculated, ratings for each of the TAGG items must be input into the online system at http://tagg.ou.edu/tagg. Scores for the TAGG-P cannot be calculated by hand, and example goals cannot be generated unless item responses are input online. Upon accessing the online TAGG-P, the professional will initially provide information to allow student files to be linked across administrations from year to year.

The professional will then complete the TAGG-P, focusing on behaviors demonstrated by the student within the last year. Professionals use a scale of 1 to 5 to rate how well each statement best describes the student's behavior. A score of "1" indicates the behavior has not been seen from the student at all within the last year, and "5" indicates the behavior has been seen from the student and the student performs it well or often. Some items require a "yes" or "no" response. Items are answered based on the professional's knowledge of the student. As stated previously, it is important that the professional educator have knowledge of the student's skills and behaviors. Please ensure the professional educator responding to the TAGG-P version has adequate opportunity to observe the student.

- A score of a 1 means the behavior has not been observed within the last year.
- A 2 rating is indicative of a developing skill or behavior not yet mastered.
- A number 3 rating is suggestive of a developed skill or behavior practiced inconsistently.
- A score of 4 infers a skill or behavior is demonstrated most of the time on a consistent basis.
- A rating of 5 implies the skill or behavior happens successfully on a consistent basis.

Although it is assumed the professional educator has extensive knowledge of the skills and behaviors of the student about whom they are responding, it is appropriate

for the professional educator to consult other educators having knowledge of the skills and behaviors of the student to complete the TAGG-P.

TAGG-F. Family members can follow similar procedures to complete the TAGG-F; namely, family members can respond to the TAGG-F items in an online format using the TAGG website (http://tagg.ou.edu/tagg). If the family member does not have Internet access, the TAGG-F can be printed and family members can respond to the items in a paper format. As with the TAGG-P, TAGG-F answers must be entered into the online system; neither scores on this assessment nor example goals for IEPs can be obtained through hand scoring. If family members choose to respond using a paper format, either they or the professional educator must input the responses into the online system.

Upon accessing the online TAGG-F, family members will provide contact information to allow student files to be linked across administrations from year to year and will then complete the TAGG-F. The TAGG-F version allows family members or guardians to use a scale of 1 to 5 to rate how well they think each statement best describes the student's behavior currently or within the past year. A score of "1" means they have not seen this behavior from the student at all within the last year, and "5" means they have seen this behavior from the student and the student performs it well or often. Some items require a "yes" or "no" response.

- A score of a 1 means the behavior has not been observed within the last year.
- A 2 rating is indicative of a developing skill or behavior not yet mastered.
- A number 3 rating is suggestive of a developed skill or behavior practiced inconsistently.
- A score of 4 infers a skill or behavior is demonstrated most of the time on a consistent basis.
- A rating of 5 implies the skill or behavior happens successfully on a consistent basis.

Family members may seek assistance from others, such as other family members or professional educators, to complete the assessment as needed. Such assistance could include clarification of questions or oral administration of items as well as aid in responding to items using either the online system or a paper format. As the three versions of the TAGG are designed to assess student skills and behaviors from various viewpoints, it is not appropriate for professional educators or the student to answer questions for the family member.

TAGG-S. Similar to the procedures for distributing the TAGG-F, the TAGG-S can be given to students by the professional educator in either an online format or in a paper format. As with the other two versions of this assessment, responses must be input into the online system at http://tagg.ou.edu/tagg to obtain assessment scores and example goals by either students themselves or the professional educator.

To reduce the cognitive load often associated with assessments, particularly for students with disabilities, students are asked to rate their own performance or behaviors on a 3-point scale for the TAGG-S version based on what they are doing currently or have done in the past year. The three scale points are written in words instead of numbers (i.e., Rarely, Sometimes, and Often) to reduce interpretation issues. As with the previously described versions, some items require a "yes" or "no" response.

- A score of "Rarely" may be given if the student perceives the behavior as never or slightly occurring.

- "Sometimes" reflects the behavior happening occasionally.
- The score of "Often" represents a behavior transpiring frequently based on student perspectives.

As with the TAGG-F, alternative administration procedures are acceptable for administering the TAGG-S. Specifically, the professional may provide students with the link for the TAGG-S to complete on their own or provide students with computer access to complete the TAGG-S at school. In the school setting, teachers can choose to administer the TAGG-S either individually or in a group setting. During administration, professional educators should urge students to ask questions concerning terminology and also to think for a moment about the question before responding. The TAGG-S may be read aloud to the students if needed, and assistance may be provided (e.g., clarification of words, items, and concepts; handwriting, assistive technology, and other adaptive equipment). However, answers should be self-reflective and represent students' thoughts and feelings at the time of the assessment. It is inappropriate for professional educators or family members to respond to questions for the students. Students should also be encouraged to rate themselves as honestly as possible to obtain accurate information about their skills and behaviors as there are no right or wrong answers.

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Chapter Three

TAGG Development and Structure

The purpose of this chapter is to give information about the development of the TAGG and structure of the three versions (i.e., Professional, Family, and Student) of the *Transition Assessment and Goal Generator* (TAGG). This chapter will be organized in the following way:

- Development of the items for use on the three versions of the TAGG
- Investigation of the structure of the TAGG-P
- Investigation of the structure of the TAGG-F
- Investigation of the structure of the TAGG-S
- Brief descriptions of the constructs underlying the TAGG items
- Reliability investigations for the three versions of the TAGG

Development of the Items for Use on the Three Versions of the TAGG

To develop the TAGG, several experienced educational researchers examined the research literature in an iterative process to develop constructs defining student behaviors associated with success in employment and postsecondary education after high school. The following describes the process used to develop constructs and exemplar behaviors.

The Research Team. A seven-member research team was strategically assembled to develop a new transition assessment based on current secondary transition research. The team collaboratively used a consensus decision-making process to identify research studies, review the studies, and build constructs and associated lists of behaviors from which the assessment would be written.

The research team consisted of (a) a professor of special education knowledgeable about transition education; (b) an assistant professor of educational psychology specializing in statistical analysis and assessment development who was a former high school educator; (c) an associate professor of psychology specializing in statistical analysis and assessment development; (d) a post-doctoral educational psychology researcher who was a former educator; (e) an advanced special education doctoral student knowledgeable about transition and who recently worked as a secondary special education teacher; (f) an advanced special education doctoral student knowledgeable about transition and who previously worked as a vocational educator of students with special needs; and (g) a

psychology undergraduate student who worked full-time at the research center where this project was completed and who provided input from a parent perspective.

Identification of Research Studies. We employed a five-step process to find studies that identified non-academic behaviors of students with disabilities associated with post-school employment and education.

First, we obtained copies of the studies identified by Juan (2008). Second, we acquired the correlational studies used by Test, Mazzotti, Mustian, Fowler, Kortering, and Kohler (2009) that identified behavioral predictors of post-school success. Third, we sought additional studies by conducting an online search using "EBSCOhost" with keywords and phrases including "post-school success," "follow-up studies," "transition," and "students with disabilities." Fourth, we used the references of the obtained manuscripts to find additional studies. Fifth, we examined the table of contents of special education and transition journals from the past three years to identify studies not yet included or missed in on-line database searches or previous studies. These five steps yielded 83 initial studies that appeared to identify non-academic behaviors associated with success for students with disabilities. The seven-member research team read and applied the inclusion and exclusion criteria described below to determine the studies to be used to develop the new assessment.

Inclusion and Exclusion Criteria. The purpose of the literature analysis was to develop a comprehensive list of student non-academic behaviors associated with postsecondary success that would enable us to build conceptual constructs. Thus, this is not a comprehensive literature review that identified every study that identified the same behavior time after time. Three criteria were applied to determine if a quantitative or qualitative research study was included or excluded. First, the manuscript had to clearly identify at least one student behavior associated with post high school employment or education. The behaviors identified in a study needed to be specific enough to be easily converted into annual transition goals. For example, the Sands, Spencer, Gliner, and Swaim (1999) study, which only identified in-school student success indicators, was excluded because the in-school behaviors were not associated with post high school employment or further education success.

Second, a study had to include individuals identified by its authors as having mild to moderate disabilities. We excluded studies that only used individuals with severe or profound intellectual disabilities (mental retardation). Third, studies that only identified academic indicators of post-school success, such as grades, passing state mandated tests, and inclusion in general education setting, were excluded because Benz, Lindstrom, and Yovanoff (2000) found that academic skills alone are insufficient for successful post-school outcomes. Thus, studies such as the one completed by Heal and Rusch (1994) that identified academic skills, GPA, and the receipt of a diploma as predictors of post-school success were excluded. After applying these inclusion and exclusion criteria, 35 studies were retained for the construct analysis.

Building Constructs and Associated Lists of Behaviors and Experiences. The research team used a consensus decision-making process to build the constructs where ideas were discussed and debated until everyone agreed. Original development of an early version of the TAGG was done

by Juan (2008), with major revisions described here. To complete these major revisions, the research team implemented a seven-step process over four months to define constructs and build the list of post-school student success behaviors. First, the research team read the studies and individually applied the inclusion and exclusion criteria. Second, the research team discussed each study and jointly applied the inclusion and exclusion criteria to decide if a study was to be examined in more depth. Third, each group member reread approximately half of the included studies, then met and determined by consensus initial constructs and lists of all articles associated with each construct. This process ensured that across the team, at least three team members had read and examined each study, and the other team members were familiar with the study when a specific study was discussed.

Fourth, all research team members jointly composed the "Disability Awareness" construct definition as an example of how to build future constructs. The research team also composed a list of associated behaviors from the literature designed to operationalize the construct. Prior to the initial construct-building meeting, each research team member reread the disability awareness studies. During a consensus discussion, the team agreed that 10 studies had identified disability awareness as an indicator of post-school success. Using these studies, the team gleaned language from the studies to build the Disability Awareness construct, and then constructed a list of specific student behaviors associated with disability awareness.

Fifth, the team divided into two sub-groups to create definitions for each remaining construct. To do this, the entire research team identified weekly a set of studies for the two sub-groups to read. Each sub-group read and studied the identified set of articles and then met independently of the other group to develop a draft behavior construct and a list of associated student behaviors according to the process described in step four.

Sixth, the two sub-groups reconvened weekly and each presented the construct definitions and lists of behaviors developed that week to the entire team. The constructs and behavior lists were adjusted based upon comments and suggestions from the entire research team until consensus constructs and behavior lists were developed. Once a few studies identified the same behavior, our focus shifted to identifying additional behaviors. Thus, we are confident the analysis produced a comprehensive list of student behaviors associated with postschool success, but not every study associated with a specific behavior was listed or used.

Seventh, the first author went back through each of the constructs, matched the citations to the studies to make certain they conformed to the inclusion criteria, and made additions or deletions as needed. One of the other authors then independently verified the changes. The two disagreements were discussed and resolved. Refer to Chapter 1 for construct definitions.

Item Development of the TAGG. We took the constructs and behavior lists delineated by McConnell, Martin, Juan, Hennessey, Terry, Kazimi, Pannells, and Willis (2013) through an iterative process to develop 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 into the assessment to ensure that the intent expressed in the wording remained true to the research that supported the item's inclusion into the assessment.

Professional TAGG. The Professional TAGG (TAGG-P) version was developed first and it went through 17 iterations. The first version contained 83 items and after refinement, the 17th draft had 75 items. The 75 items were organized according to construct in a logical sequence by the intent of the behavior or experience, 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, and five meant the student often performed the behavior. The remaining nine items required a yes or no answer.

Family TAGG. Across 10 drafts, the Family TAGG (TAGG-F) version was developed using the same items initially included in the TAGG-P, and it was revised in 10 drafts as the TAGG-P was improved. Each item began with the stem "My child (followed by a verb) . . ." The TAGG-F 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. Unlike the TAGG-P, the TAGG-F did not include construct names or definitions.

Student TAGG. Concurrent with the development of the TAGG-F, the Student TAGG (TAGG-S) was developed using the same items included in the TAGG-P, and was revised in lock-step fashion with the TAGG-F. The wording of the TAGG-S 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 3-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 yes or no answer.

Structure of the TAGG-P

This section presents an examination of the structure of the Professional version of the *Transition Assessment and Goal Generator* (TAGG-P). Two studies were completed to examine the extent the structure of the TAGG-P matched the theoretical structure guiding the assessment design. This section will be organized in the following way. We will first present a description of the professional transition educators who participated in the first study, followed by iterative procedures used to analyze the structure of the TAGG-P and the results of the structural analysis. We will then present the same information (i.e., participants, data analysis methods employed, and results) for the second study completed.

Before presenting the results of the structural analysis completed, it is important that we identify the inclusion criteria of the transition professionals who participated in this study. Transition professionals who

participated in this study were those school or district level staff members involved in students' transition education, and included (a) special education teachers,(b) transition coordinators or specialists, (c) rehabilitation counselors, or (d) school counselors. It was expected that participants knew the students about which they were responding for at least two months so they could answer the TAGG-P questions.

Study 1: Structure of TAGG-P

Professional Participants. Twenty-seven special education teachers and 12 transition specialists participated in the initial factor analysis of the TAGG development. They were, on average, 47 years old, and had an average of about 16 years of teaching experience. About 85% of the professionals were certified in special education. They reported they knew the students about which they responded for an average of 2.5 years. Of the professionals who participated, 37 were female. About half of the participants lived in the school districts in which they taught. About 75% of the professionals were Caucasian, about 12% were African-American, about 5% were Hispanic, and about 5% reported more than one ethnicity. Table 1 contains detailed demographics for the professionals who participated in TAGG development.

Investigation of the structure of the TAGG-P. As the first step in evaluating the factorial structure of the TAGG, we began by submitting the TAGG-P (initial 75-item version) to an Exploratory Factor Analysis (EFA). The initial EFA on the TAGG-P was conducted using Maximum Likelihood (ML) estimation and allowing the factors to correlate with the Promax rotation using the PROC FACTOR program in SAS. We investigated factor solutions ranging from one to 10 factors and then compared the values of the Akaike Information Criterion (AIC; Akaike, 1974) and Schwartz's Bayesian Information Criterion (BIC; Schwartz, 1978) for each of the 10 solutions. The appropriate number of factors using this method is determined by noting when both the AIC and the BIC appear to stop changing dramatically as the number of factors increases, similar to examining a scree-plot when using a principal components analysis. As a secondary criterion, factors that show less than three salient loadings beyond where the AIC and BIC begin to flatten also indicate an over-fitting of the number of dimensions and all dimensions beyond that point should be discarded.

For the TAGG-P, the EFA-ML analysis suggested eight factors were necessary to fit the data, thus two constructs were dropped from the original 75-item TAGG-P (Actions Related to Strengths and Limitations, and Utilization of Resources). Subsequent examination of the factor reference structure matrix suggested another 20 items did not substantially load on any of the eight factors, thus were candidates to be removed from the final scale. Moreover, of the remaining 55 items that did load on at least one factor, most items appeared to load substantially on only one of the eight factors, suggesting a possible simple structure solution.

To further refine the TAGG-P scale, we then submitted the reduced 55-item scale to a new EFA using CFA techniques. We then examined the overall fit of the CFA models using four indices of fit: the RMSEA index, for which Steiger and Lind (1980) suggest values below .08 indicate a good fit and values at or near .05 indicate excellent fit; Bentler's CFI index (Bentler, 1990), based on the value of the non-centrality parameter, for which values greater than or equal to .90 indicate good fit; the Tucker and Lewis

Index (TLI; Tucker and Lewis, 1973), which compares the fit of the model to an independence (or no factor) model, and for which values greater than or equal to .90 indicate good fit; and the Root Mean Square Residual (RMSR), an absolute measure of misfit, and for which values near or less than .05 are considered acceptable. Examining the combination of these four fit indices was important because they assess different aspects of model fit. If all four indices suggest acceptable fit, we could be confident that the model adequately reproduces the empirical data.

Initially, we imposed a factor model with a simple structure on all factor loadings (each variable was allowed to freely load on only one factor, and loaded zero on all others) and we also allowed all factors to freely correlate. Although this reduced 55-item scale fit substantially better than the original 75-item scale, the model fit was still poor by the standards of model-fitting using CFA analysis. Examination of the Asymptotically Standardized Residuals (ASR's), obtained after fitting the model, indicated the existence of doublet factors (Mulaik, 2009; Landis, Edwards, & Cortina, 2011). Doublet factors occur when a pair of items, usually loading on the same factor, share residual or specific variance that cannot be accounted for by the common factor models. In essence, doublet factors typically arise when two items are understood by the participants to represent the same concept and cannot be empirically identified apart from one another, and hence are answered in a highly correlated manner.

To fix the problem of too many doublet factors, two solutions are usually proposed (Landis et al., 2011). The first solution is to fit a model with correlated residuals, which increases the fit of the factor model but also adds complexity to that model. The second solution is to eliminate one of the offending items from the doublet pair, keeping the simple structure of the model and reducing the length of the scale. Because reducing the length of the scale has its own virtues (such as simplifying the task for respondents) and dropping items would allow us keep our imposed simple factor structure, we decided to use the latter strategy and delete items from doublet pairs sequentially until no more doublet pairs could be found that substantially impacted the fit of the model atop the data. As a general rule, we chose to eliminate the item written to assess the conceptually easier behavior as the other item in the doublet pair encompassed that behavior. As a result, an additional 21 items were deleted from the scale, resulting in a 34-item TAGG-P that subsequently fit to the data from an eight-factor model. Because of the loss of items, we revised construct names to better reflect the content of the remaining items: Knowledge of Strengths and Limitations became Strengths and Limitations, Proactive Involvement became Interacting with Others, Self-Advocacy became Student Involvement in the IEP, and Supports became Support Community.

The fit of the eight-factor simple structure model to the reduced 34-item scale was excellent (χ^2 = 1043.62, *df* = 499; RMSEA = .058, CFI = .92, TLI = .91, and RMSR = .0597). As Table 2 shows, each item loaded on only one factor and the R^2's for each item were strong for the most part, indicating the eight-factor simple structure solution explained the item variability quite well. Table 3 gives the correlation matrix between each of the eight factors of the TAGG-P. As expected, each factor is moderately to highly correlated, suggesting a student's standing on one of the eight factors is highly related to his or her standing on the other factors.

Study 2: Replication of TAGG-P Structure

Professional Participants. In addition to the participants used to complete Study 1, an additional group of professional transition educators responded to the reduced 34-item TAGG-P the next academic year. These professional high school special educators had an average age of 46 years (SD = 8.7) and 31 (91.2%) were females. The majority reported being Caucasian (85.3%), 11.8% reported being African American, and 2.9% reported they were Hispanic. Of the 34 education professionals, 27 were special education teachers (79.4%) and seven worked as transition specialists (20.6%), with some participants holding various other positions related to special education. Participants had an average of 12.9 years of experience teaching students with disabilities (*SD* = 9.2). Participants for both studies were included in the analysis for Study 2. Demographic information is located in Table 1.

Replication of the TAGG-P Factor Structure. To investigate the extent the factor structure identified for the three versions of the TAGG (i.e., TAGG-P, TAGG-F, and TAGG-S) could be replicated in a new sample, a multi-group CFA was employed. Specifically, we were interested in the extent the factor structure of the three TAGG versions found in Study 1 would be invariant across samples. In all three versions, we first investigated the configural (factor pattern) invariance of the model across the two samples, followed by factorial (factor loading) invariance (Vandenberg & Lance, 2000).

Initial examination of the TAGG-P configural invariance across the two samples resulted in non-convergence because the covariance matrix for the Study 2 sample was non-positive definite. A number of reasons exist for a matrix to exhibit a non-positive definite status (Wothke, 1993). Examining the descriptive statistics for Study 2 data, we identified two items having very low means and little variability. Both items 25 and 26 assessed the Employment construct. Because the content of item 26, whether or not the student was employed in a paid position, has been found to be a predictor of student employment and education after graduation we kept item 26 and chose to eliminate item 25, referencing an unpaid job, from the analysis for two reasons. First, in comparison to the year 1 sample, considerably more students in the second study were below the working age of 16, and this age difference may have skewed these results. Second, educators may not have known if their students have had an unpaid job.

When the factor pattern of the two samples (minus item 25) were then constrained to be equivalent, we found the structure of the TAGG-P in Study 1 to be an acceptable fit for the data collected from the second sample (χ^2 = 2863.49, *df* = 1021, RMSEA = .072, CFI = .88, TLI = .88, RMSR = .065), suggesting the underlying factor pattern of the data remains approximately the same for the two samples. Table 4 gives factor loadings and R^2 values for each item, and Table 5 shows the correlation matrix for the factors.

We then analyzed the equivalence of the TAGG-P across the two samples with a more restrictive model where all factor loadings (factorial invariance) were constrained to be equal. Results of this analysis suggested slightly poorer, yet still marginally acceptable model fit (χ^2 = 3094.2785, *df* = 1054, RMSEA = .075, CFI = .87, TLI = .87, RMSR = .100). Although these fit statistics do not reach the levels

suggested by Hu and Bentler (1999) representing good fit, recent Monte Carlo studies have suggested the recommendations proposed by Hu and Bentler are too high (Fan & Sivo, 2005; Yuan, 2005) and a more holistic and global look at model-data fit be employed (Kline, 2010; Schumaker & Lomax, 1996). Given the highly constrained simple-structure model being tested and the adequacy of the fit statistics when looking at a variety of different indicators of model-data fit, it appears a single model fits adequately in both samples.

Structure of the TAGG-F

This section presents an examination of the structure of the Family version of the *Transition Assessment and Goal Generator* (TAGG-F). As with the investigation of the structure of the TAGG-P, two studies were completed to examine the extent to which the structure of the TAGG-F matched the theoretical structure around which the assessment was designed. This section will be organized in the following way. We will first present a description of the family members who participated in the first study, followed by iterative procedures used to analyze the structure of the TAGG-F and the results of the structural analysis. We will then present the same information (i.e., participants, data analysis methods employed, and results) for the second study completed.

Before presenting the results of the structural analysis completed, it is important that we identify the inclusion criteria of the family members participating in this study. The primary caregiver will be considered to be the "family member" and should be the person who completes the TAGG-F about the student under question. This may be a parent, grandparent, or guardian. In practice, this is not always possible as students come from a variety of home-life situations; as a result, any family member with knowledge of the student was eligible to provide information on the TAGG-F. This participant must be able to read the TAGG-F and comprehend the material with minimal assistance, or would be able to comprehend the material if the TAGG-F items and responses were read aloud, as determined by the student's IEP case manager.

Study 1: Structure of TAGG-F

Family Participants. Approximately 80% (n = 215) of the 271 family members who participated in this study were mothers or stepmothers, 11% were fathers or stepfathers (n = 30), 3.7% were grandparents (n = 12), and the remaining family participants were legal guardians who did not identify a role. The average age of the family participants was 44.6 years (*SD* = 8.6) and most (97.8%) of the family members indicated that the students lived with them. Most family members (94.5%) reported English as the primary language spoken at home. Most family members identified themselves as Caucasian (68%), 10% as African American, 6% as Hispanic, and 3% as Native American. About 14% of the family members did not earn a high school diploma, 45% of the family members had a high school diploma, and almost 38% had greater than a high school education. Approximately 9% of family members indicated that someone helped them complete the forms. Please refer to Table 6 for more specific demographic information.

Investigation of the Structure of the TAGG-F. Although we could have followed the exact same steps in developing a factor model for the TAGG-F as we did with the Professional version, we decided to first examine the fit of the final factor model for the Professional version to the Family

version. This analysis approach has at least two positive aspects. First, if the factor model developed for the TAGG-P fits the data approximately as well for the TAGG-F, it would provide evidence for convergent validity of the factor constructs, as the model was empirically built using TAGG-P responses only; that is, it would provide for a partial validation of the factor model since the sources of information are partially independent, even though the participants being assessed are the same. So, if that model fit the TAGG-F responses, it would provide one source of independent verification of its validity. Second, if the TAGG-F factor model held, it would allow us to simplify the assessment process considerably, having the identical number of items for each source of data.

The fit of the eight-factor simple structure model to the reduced 34-item family scale was also excellent ($\chi^2 = 862.74$, $df = 499$, RMSEA = .0570, CFI = .91, TLI = .90, and RMSR = .058). Comparing these results to those obtained from the factor model fit to the TAGG-P indicates an extremely similar fit in terms of overall model fit to the data, with all four fit indices showing similar values. Table 7 contains the factor loadings and R^2 values for the 34 items of the reduced Family version of the TAGG. Visual inspection of the factor loadings and R^2 values show very similar results to that obtained for the TAGG-P. Table 8 reports the factor correlations for the TAGG-F, and again shows a similar pattern of correlations as that of the TAGG-P, with all eight factors being moderately to highly correlated.

Study 2: Replication of TAGG-F Structure

Family Participants. As with transition professionals, an additional group of family members was recruited and participated in the investigation of the structure of the TAGG-F by responding to the reduced 34-item TAGG-F. Approximately 78% (n = 179) of the 229 family members who participated in this study were mothers or stepmothers, 11% were fathers or stepfathers (n = 26), and 5.7% were grandparents (n = 13). Participating family members had an average age of 43.1 years (*SD* = 11.3) and most (98%) reported that the student lived in their home. The majority of family members reported being Caucasian (75.1%), 8.3% reported being African American, 5.2% reported being Hispanic, and 10.9% reported being American Indian. Approximately 65% of family participants were married and all but 10% reported having completed at least a high school education. Data from participants recruited for both studies were used in this analysis. Participant demographic information is located in Table 6.

Replication of the TAGG-F Factor Structure. A similar strategy was employed to determine the replicability of the TAGG-F factor structure found in study 1 using a second sample. Results of the configural invariance test for data collected from family members in the two samples produced an acceptable fit ($\chi^2 = 1995.76$, $df = 1087$, RMSEA = .0579, CFI = .89, TLI = .89, RMSR = .0679) with no modifications to the model, suggesting the underlying factor pattern structure of the data remains the same across different samples. See Table 9 for factor loadings and R^2 values for the TAGG-F. Table 10 shows the correlation matrix for the factors.

We then examined the factorial invariance of the TAGG-F across the two samples. Results suggest the fit was less than optimal ($\chi^2 = 2681.6678$, $df = 1121$, RMSEA = .075, CFI = .82, TLI = .82, RMSR = .151). Given the differences in the sample of students as

well as the family members' abilities to observe student behaviors for some of the items, the failure to replicate factorial invariance, while disappointing, is not surprising. The finding that the TAGG-F data retains the same basic factor pattern structure across the two samples is still remarkable and gives strong evidence of the construct validity of the assessment.

Structure of the TAGG-S

This section presents an examination of the structure of the Student version of the *Transition Assessment and Goal Generator* (TAGG-S). As with the two previous versions of the TAGG (i.e., Professional and Family), two studies were completed to examine the extent to which the structure of the TAGG-S matched the theoretical structure around which the assessment was designed. This section will be organized in the following way. We will first present a description of the students who participated in the first study, followed by iterative procedures used to analyze the structure of the TAGG-S and the results of the structural analysis. We will then present the same information (i.e., participants, data analysis methods employed, and results) for the second study completed.

Before presenting the results of the structural analysis completed, it is important that we identify the inclusion criteria of the students who participated in this study. Students with disabilities must (a) be of public school transition age, (b) have an active IEP, (c) be able to read the TAGG-S and comprehend the material with minimal assistance, or will be able to comprehend the material if the TAGG-S items and responses are read aloud, as determined by the schools' IEP case manager, and (d) have the ability to give consent or assent to participate.

Study 1: Structure of TAGG-S

Student Participants. Student participants (n = 349) received special education services at 33 high schools. The average age of students was 17.1 years (*SD* = 1.4) and 53.6% were males. Students from grades 9 through 12 completed the assessment, with 12% being in the 9th grade, 26% in the 10th, 27% in the 11th, and 35% in the 12th grade. Students from 11 disability categories completed the assessment, with 61% having a learning disability, 12% intellectual disability, 10% other health impairment, and 5% having emotional disturbance, with the other 12% having disabilities such as autism, hearing, visual, speech, or a traumatic brain injury. Educators indicated 70% of the students had mild to moderate disabilities, with 25% not indicating a disability level. Six students (1.7%) were enrolled in or received support for English as a second language, and 58 students (16.7%) had secondary disabilities. A slight majority of students were eligible to receive free or reduced lunch (56%). More detailed demographic information is located in Table 11.

Investigation of the Structure of the TAGG-S. For the same reasons given above when analyzing the TAGG-F, we decided to first examine the fit of the final factor model of the TAGG-P to the TAGG-S. The fit of the eight-factor simple structure model to the reduced 34-item student scale was also excellent, but with two caveats. First, Factor 1 (Strengths and Limitations) and Factor 8 (Support Community) correlated perfectly in the student sample, so following standard factor analytic tradition (McDonald, 1985), we collapsed those two factors into a common factor. Second, when examining the Asymptotic Standardized Residuals, one additional doublet factor showed up in the student sample that did not

show up in the data collected from either of the other samples. Rather than delete one item from the item pair, thus making the number of items across forms different, we fit a single correlated residual to the student model. The resulting fit of the seven-factor simple structure model to the 34-item student version was also excellent (χ^2 = 819.00, *df* = 505, RMSEA = .0466, CFI = .89, TLI = .88, and RMSR = .064). Comparing these results to those obtained from the factor model fit to both the TAGG-P and TAGG-F indicates similar overall model fit to the data, although three of the four fit indices showed slightly smaller values. Table 12 contains the factor loadings and R^2 values for the 34 items of the reduced TAGG-S. Visual inspection of the factor loadings and R^2 values show a similar pattern of results to that obtained for the Professional and Family Versions of the TAGG, although the results suggest less salience to the factor loadings and more measurement error in each item. Table 13 also reports the factor correlations for the TAGG-S, and again shows a similar pattern of correlations as the other versions, although the correlations between factors appear to be somewhat smaller than in either the TAGG-P or TAGG-F.

Study 2: Replication of TAGG-S Structure

Student Participants. A second sample of students with disabilities was recruited to respond to the 34-item TAGG-S developed as a result of the analysis completed in Study 1. The average age of the 342 student participants was 16.4 years (*SD* = 3.1), and 56.3% were males. Nine students (2.6%) received support for English as a second language, and 55.7% were eligible for free or reduced lunch. Students from 9th through 12th grades completed the assessment, with 21% being in 9th grade, 16.3% being in 10th grade, 25.7% being in 11th grade, and 35.6% being in 12th grade. Students from 11 disability categories completed the assessment, with 56.6% of students having learning disabilities, 13.1% having an intellectual disability, 15.2% having health impairments, and 6.7% having an emotional disturbance. Data from participants recruited for both studies was used in this analysis. Refer to Table 11 for additional demographic information.

Replication of the TAGG-S Factor Structure. As with results of the multi-group CFA for the TAGG-P, the covariance matrix for data collected from the TAGG-S in Study 2 was non-positive definite. An examination of descriptive statistics again revealed very little variance in the data on Item 26 (i.e., "I had a job where I earned money."). This item was removed from further analyses. Multi-group CFA analysis of the configural invariance of the TAGG-S produced an acceptable fit (χ^2 = 1879.42, *df* = 1028, RMSEA = .0490, CFI = .87, TLI = .86, RMSR = .0762), again suggesting the factor pattern remains similar across the two samples. When the factorial invariance of the model was examined, results were also slightly lower, but marginally acceptable (χ^2 = 2028.0125, *df* = 1061, RMSEA = .051, CFI = .85, TLI = .85, RMSR = .040). Although these results suggest both configural and factorial invariance produced acceptable model-data fit, we believe the configural invariance in the structure of these assessments across the two samples is the most important component when validating the instrument across multiple samples and multiple sources of information.

The need for the removal of item 26 in the student sample is interesting, because this item worked well for data collected from both the TAGG-P and TAGG-F. However, it

appears students in our study had different interpretations of a paid job than do adults. See Table 14 for the factor loadings and R^2 values for the TAGG-S and Table 15 shows the correlation matrix for the factors.

Brief Descriptions of the Constructs Underlying the TAGG Items

Based on the results of the structural analyses reported above, we are confident the three versions of the TAGG assess the same constructs. A brief description of each of the constructs is given below. More information about these constructs can be found in Chapter 1 of this technical manual.

Strengths and Limitations. Individuals who have knowledge of their own strengths and limitations are able to demonstrate this knowledge (Higgins, Raskind, Goldberg, & Herman, 2002; Lachapelle, Wehmeyer, Haelewyck, Courbois, Keith, & Schalock, 2005; Madaus, 2006; Raskind, Goldberg, Higgins, & Herman, 2002; Sarver, 2000; Wehmeyer & Palmer, 2003), as well as communicate it to others (Gerber, Ginsberg, & Reiff, 1992; Higgins et al., 2002; Madaus, 2006; Raskind et al., 2002; Sarver, 2000; Skinner, 2004). They also show the ability to identify situations where they will be successful (Gerber et al., 1992).

Disability Awareness. Students who are aware of their disability can explain its details and request appropriate accommodations (Aune, 1991; Gerber et al., 1992; Gerber, Price, Mulligan, & Shessel, 2004; Higgins et al., 2002; Raskind, Goldberg, Higgins, & Herman, 1999). They may seek out more information about their disability (Thoma & Getzel, 2005) to better understand it.

Persistence. Successful individuals with disabilities often show persistence in the time spent studying compared to non-disabled peers (Skinner, 2004). They are able to change their goals appropriately (Fabian, 2007; Fabian, Lent, & Willis, 1998; Gerber et al., 1992; Goldberg, Higgins, Raskind, & Herman, 2003; Greenbaum, Graham, & Scales, 1995; Skinner, 2004) and are flexible when choosing strategies to complete those goals (Goldberg et al., 2003).

Interacting with Others. Individuals showing the ability to interact with others exhibit successful personal interactions with family, friends, classmates, educators, and other adults (Doren & Benz, 1998; Goldberg et al., 2003; Halpern, Yovanoff, Doren, & Benz, 1995; Liebert, Lutsky, & Gottlieb, 1990), particularly in school or a community organization.

Goal Setting and Attainment. Individuals with disabilities who exhibit positive post-school employment and education outcomes are able to set goals for themselves. This includes breaking goals down into manageable parts (Thoma & Getzel, 2005), developing and implementing plans to meet goals (Gerber et al., 1992; Goldberg et al., 2003), and changing plans that are not enabling them the opportunity to meet those goals (Goldberg et al., 2003).

Employment. The Employment construct consists of the extent to which individuals sought or maintained employment while in school (Dunn & Shumaker, 1997; Fourqurean, Meisgeier, Swank, & Williams, 1991; McDonnall, 2010), as well as their abilities to find a job matching their skills and interests (Fourqurean et al., 1991).

Student Involvement in IEP. Students who advocate for themselves demonstrate the ability to ask teachers for necessary and appropriate accommodations (Aune, 1991;

Gerber et al., 1992; Gerber et al., 2004; Goldberg et al., 2003; Skinner, 2004) and tend to participate during their IEP meetings (Aune, 1991; Halpern et al., 1995).

Support Community. When students with disabilities have a support network, they are able to identify appropriate individuals to provide support (Gerber et al., 1992; Goldberg et al., 2003; Liebert et al., 1990; Madaus, 2006; Skinner, 2004; Thoma & Getzel, 2005; Whitney-Thomas & Moloney, 2001), as well as the situations where support is required and the person from whom the support must come (Benz et al., 2000; Gerber et al., 1992; Goldberg et al., 2003; Greenbaum et al., 1995; McNulty, 2003). Please note that this construct was merged with *Strengths and Limitations* for the TAGG-S.

Investigation of Reliability of the Three Versions of the TAGG

Study 1

Internal Consistency. We assessed the internal consistency of the overall scale score and each subscale score for each version of the TAGG and the 34 items across eight factors of the Professional and Family versions and the seven factors of the Student version using Cronbach's coefficient alpha. Table 16 contains these results. The results showed the overall scales for each version of the TAGG are highly reliable, ranging from α =. 89 to α =. 95. Likewise, the reliability estimates of the eight subscale scores for both the TAGG-P and TAGG-F were good, ranging from α =. 60 to α =. 93. The exception, however, was with the Interacting with Others scale for the family sample where the alpha was lower (α =. 52). Examination of the reliability estimates for the student sample subscale scores suggested lower reliabilities in general, ranging from α =. 44 to α =.82, yet the overall alpha level is at a respectful .89 level.

Test-retest Reliability. A test-retest measure of stability of total TAGG scores across the three versions across an average of 13.7 weeks between the first and second administrations yielded statistically significant ($p < .01$) and large correlations of .80, .70, and .70 for 102 professional, 92 family, and 102 student TAGG scores, respectively [r = .10 (small), r = .30 (medium), and r = .50 (large)]. The test-retest participants came from three states: Arkansas, Colorado, and New Mexico. All professionals were females with an average age of 48 years (*SD* = 8.8). Average age of family members was 45 years (*SD* = 8.1), 71% were mothers or stepmothers, 68.9% were married, 89.3% used English as the primary language at home, and the highest level of education for 47.6% of them was high school diploma or GED. For students, 52.4% were males and 47.6% females with an average age of 17.5 years (*SD* = 1.6). About half of the students were in the 12th grade, 60% received free or reduced lunches, and 77.7% had mild to moderate disability, with 62% having specific learning disabilities.

Agreement Across TAGG versions. The total scores across the three TAGG versions showed statistically significant ($p < .01$) medium correlations. Calculating Pearson product-moment correlation coefficients for Professional-Family (n = 269), Professional-Student (n = 339), and Family-Student TAGG (n = 268) versions yielded the values of .38, .37, and .31, respectively.

Study 2

Internal Consistency. We assessed the internal consistency of the overall scale

score and each subscale score for each version of the TAGG using data collected in Study 2 and the 34-items across eight factors of the Professional and Family versions and the seven factors of the Student version using Cronbach's coefficient alpha (Table 17). The results show that the overall scales for each version of the TAGG are highly reliable, ranging from $\alpha = .86$ to $\alpha = .93$. Likewise, the reliability estimates of the eight subscale scores for both the TAGG-P and TAGG-F are also acceptable, ranging from $\alpha = .62$ to $\alpha = .94$, with two exceptions. The first was with the Interacting with Others scale for the family sample ($\alpha = .51$), and the second was for the Employment scale ($\alpha = .52$). These results were substantially similar to those from Study 1, with reliability estimates for the student subscale scores lower than those from the professional or family samples, ranging from $\alpha =. 39$ to $\alpha = .82$. However, the overall alpha level of the TAGG-S is .86.

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Table 1

Demographic Information for Professional Participants

	Study 1	Study 2
Sample size	39	34
Average Age	47 (10.2)	46 (8.7)
Average Years Teaching Experience	16 (10.9)	13 (9.2)
% Female	94.9	91.2
Racial/Ethnic Categories		
% Caucasian	76.9	85.3
% African American	12.8	11.8
% Hispanic	5.0	2.9
% American Indian	2.6	8.8

Note. Standard deviations are given in parentheses.

Table 2

Factor Loadings and R^2 for TAGG-P for Study 1

Item	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5	Factor 6	Factor 7	Factor 8	R^2
1	.75								.54
2	.72								.52
3	.83								.69
4	.77								.59
5		.92							.52
6		.85							.72
7		.67							.47
8		.60							.36
9			.76						.58
10			.90						.81
11			.90						.81
12			.92						.84
13			.78						.61
14				.79					.63
15				.64					.41
16				.82					.66
17					.72				.53
18					.86				.74
19					.94				.88
20					.87				.75
21					.82				.67
22					.41				.17
23						.79			.62
24						.94			.88
25						.45			.21
26						.42			.18
27							.65		.43
28							.89		.79
29							.90		.80
30							.64		.41
31								.76	.57
32								.65	.42
33								.75	.56
34								.35	.12

Note. Factor 1 = Strengths and Limitations; Factor 2 = Disability Awareness; Factor 3 = Persistence; Factor 4 = Interacting with Others; Factor 5 = Goal Setting and Attainment; Factor 6 = Employment; Factor 7 = Student Involvement in the IEP; Factor 8 = Support Community.

Table 3

Factor Correlations for TAGG-P for Study 1

	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5	Factor 6	Factor 7	Factor 8
Factor 1	-							
Factor 2	.79	-						
Factor 3	.68	.71	-					
Factor 4	.58	.71	.72	-				
Factor 5	.48	.51	.51	.43	-			
Factor 6	.46	.55	.35	.37	.40	-		
Factor 7	.87	.71	.55	.54	.49	.43	-	
Factor 8	.47	.57	.72	.68	.56	.24	.45	-

Note. Factor 1 = Strengths and Limitations; Factor 2 = Disability Awareness; Factor 3 = Persistence; Factor 4 = Interacting with Others; Factor 5 = Goal Setting and Attainment; Factor 6 = Employment; Factor 7 = Student Involvement in the IEP; Factor 8 = Support Community.

Table 4

Factor Loadings and R^2 for TAGG-P for Study 2

Item	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5	Factor 6	Factor 7	Factor 8	R^2
1	.72								.52
2	.75								.56
3	.79								.63
4	.76								.57
5		.69							.48
6		.84							.71
7		.65							.42
8		.59							.35
9			.80						.64
10			.91						.82
11			.90						.81
12			.90						.82
13			.81						.65
14				.80					.64
15				.59					.35
16				.77					.60
17					.75				.57
18					.88				.78
19					.93				.87
20					.88				.78
21					.86				.74
22					.33				.11
23						.78			.60
24						.99			.98
25						---			---
26						.38			.14
27							.70		.49
28							.90		.81
29							.90		.81
30							.63		.39
31								.74	.54
32								.60	.36
33								.72	.52
34								.32	.11

Note. Factor 1 = Strengths and Limitations; Factor 2 = Disability Awareness; Factor 3 = Persistence; Factor 4 = Interacting with Others; Factor 5 = Goal Setting and Attainment; Factor 6 = Employment; Factor 7 = Student Involvement in the IEP; Factor 8 = Support Community.

Table 5

Factor Correlations for TAGG-P for Study 2

	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5	Factor 6	Factor 7	Factor 8
Factor 1	---							
Factor 2	.85	---						
Factor 3	.51	.55	---					
Factor 4	.48	.48	.68	---				
Factor 5	.64	.66	.74	.56	---			
Factor 6	.50	.46	.41	.46	.51	---		
Factor 7	.45	.46	.41	.29	.56	.42	---	
Factor 8	.56	.65	.78	.72	.72	.53	.43	---

Note. Factor 1 = Strengths and Limitations; Factor 2 = Disability Awareness; Factor 3 = Persistence; Factor 4 = Interacting with Others; Factor 5 = Goal Setting and Attainment; Factor 6 = Employment; Factor 7 = Student Involvement in the IEP; Factor 8 = Support Community.

Table 6
Demographic Information for Family Participants

	Study 1	Study 2
Sample Size	271	229
Average Age	45 (8.6)	43 (11.3)
Family Respondent		
% Mother/stepmother	80.0	78.0
% Father/stepfather	11.0	11.0
% Grandparent	3.7	5.7
% Legal guardian	2.6	0.9
% Lived with student	97.8	97.8
Family Education		
% No H.S. diploma	14.0	9.2
% H.S. education only	45.0	37.1
% Greater than H.S. education	38.0	51.5
% Had help with forms	0.9	6.6
Racial/Ethnic Categories		
% Caucasian	68.0	75.1
% African American	10.0	8.3
% Hispanic	6.0	5.2
% American Indian	3.0	10.9

Note. Standard deviations are given in parentheses.

Table 7
Factor Loadings and R^2 for TAGG-F for Study 1

Item	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5	Factor 6	Factor 7	Factor 8	R^2
1	.82								.68
2	.65								.43
3	.86								.74
4	.60								.36
5		.91							.84
6		.86							.73
7		.62							.39
8		.53							.28
9			.70						.49
10			.87						.76
11			.87						.75
12			.82						.67
13			.82						.68
14				.66					.43
15				.43					.19
16				.58					.34
17					.77				.59
18					.81				.65
19					.84				.70
20					.80				.64
21					.85				.73
22					.28				.08
23						.82			.67
24						.85			.72
25						.17			.03
26						.25			.06
27							.76		.57
28							.87		.76
29							.85		.73
30							.56		.32
31								48	.23
32								46	.22
33								61	.38
34								53	.28

Note. Factor 1 = Strengths and Limitations; Factor 2 = Disability Awareness; Factor 3 = Persistence; Factor 4 = Interacting with Others; Factor 5 = Goal Setting and Attainment; Factor 6 = Employment; Factor 7 = Student Involvement in the IEP; Factor 8 = Support Community.

Table 8

Factor Correlations for TAGG-F for Study 1

	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5	Factor 6	Factor 7	Factor 8
Factor 1	-							
Factor 2	.50	-						
Factor 3	.58	.90	-					
Factor 4	.43	.84	.84	-				
Factor 5	.33	.58	.58	.48	-			
Factor 6	.61	.72	.72	.57	.59	-		
Factor 7	.62	.68	.69	.58	.51	.58	-	
Factor 8	.38	.68	.84	.81	.47	.60	.50	-

Note. Factor 1 = Strengths and Limitations; Factor 2 = Disability Awareness; Factor 3 = Persistence; Factor 4 = Interacting with Others; Factor 5 = Goal Setting and Attainment; Factor 6 = Employment; Factor 7 = Student Involvement in the IEP; Factor 8 = Support Community.

Table 9

Factor Loadings and R^2 for TAGG-F for Study 2

Item	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5	Factor 6	Factor 7	Factor 8	R^2
1	.79								.62
2	.68								.46
3	.84								.71
4	.47								.24
5		.84							.71
6		.85							.72
7		.57							.33
8		.56							.31
9			.67						.44
10			.86						.74
11			.88						.78
12			.85						.72
13			.78						.60
14				.60					.36
15				.40					.16
16				.57					.33
17					.77				.59
18					.81				.66
19					.84				.71
20					.80				.64
21					.84				.71
22					.25				.06
23						.73			.53
24						.87			.76
25						.12			.01
26						.23			.05
27							.76		.57
28							.86		.74
29							.87		.75
30							.59		.34
31								.59	.35
32								.50	.25
33								.64	.40
34								.44	.19

Note. Factor 1 = Strengths and Limitations; Factor 2 = Disability Awareness; Factor 3 = Persistence; Factor 4 = Interacting with Others; Factor 5 = Goal Setting and Attainment; Factor 6 = Employment; Factor 7 = Student Involvement in the IEP; Factor 8 = Support Community.

Table 10

Factor Correlations for TAGG-F for Study 2

	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5	Factor 6	Factor 7	Factor 8
Factor 1	---							
Factor 2	.64	---						
Factor 3	.58	.46	---					
Factor 4	.56	.34	.74	---				
Factor 5	.64	.59	.81	.72	---			
Factor 6	.45	.37	.49	.51	.57	---		
Factor 7	.49	.56	.54	.55	.65	.53	---	
Factor 8	.59	.51	.81	.89	.80	.61	.61	---

Note. Factor 1 = Strengths and Limitations; Factor 2 = Disability Awareness; Factor 3 = Persistence; Factor 4 = Interacting with Others; Factor 5 = Goal Setting and Attainment; Factor 6 = Employment; Factor 7 = Student Involvement in the IEP; Factor 8 = Support Community.

Table 11

Demographic Information for Student Participants

	Study 1	Study 2
Sample Size	349	342
Average Age	17 (1.4)	16 (3.1)
% Female	46.4	43.7
% Eligible for Free/Reduced Lunch	56.0	55.7
Grade Level		
% 9th grade	12.0	21.0
% 10th grade	26.0	16.3
% 11th grade	27.0	25.7
% 12th grade	35.0	35.6
Racial/Ethnic Categories		
% Caucasian	67.0	70.3
% African American	17.5	11.4
% Hispanic	12.0	11.4
% American Indian	4.0	13.4
% ELL	1.7	2.6
Disability Information		
% LD	61.0	56.6
% ID	12.0	13.1
% OHI	12.0	15.2
% ED	5.0	6.7
% Other disability	12.0	8.4
% Secondary disability	11.5	14.0

Note. Standard deviations are given in parentheses.

Table 12
Factor Loadings and R^2 for TAGG-S for Study 1

Item	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5	Factor 6	Factor 7	R^2
1	.68							.68
2	.39							.43
3	.43							.74
4	.21							.36
5		.69						.84
6		.68						.73
7		.55						.39
8		.30						.28
9			.75					.49
10			.77					.76
11			.67					.75
12			.63					.67
13			.67					.68
14				.52				.43
15				.26				.19
16				.66				.34
17					.62			.59
18					.48			.65
19					67			.70
20					.48			.64
21					.75			.73
22					.25			.08
23						.85		.67
24						.94		.72
25						.20		.03
26						.08		.06
27							.76	.57
28							.77	.76
29							.84	.73
30							.51	.32
31	.61							.23
32	.46							.22
33	.54							.38
34	.17							.28

Note. Factor 1 = Strengths and Limitations and Support Community; Factor 2 = Disability Awareness; Factor 3 = Persistence; Factor 4 = Interacting with Others; Factor 5 = Goal Setting and Attainment; Factor 6 = Employment; Factor 7 = Student Involvement in the IEP.

Table 13

Factor Correlations for TAGG-S for Study 1

	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5	Factor 6	Factor 7
Factor 1	-						
Factor 2	.50	-					
Factor 3	.46	.79	-				
Factor 4	.32	.82	.83	-			
Factor 5	.00	.40	.54	.54	-		
Factor 6	.39	.60	.58	.48	.27	-	
Factor 7	.15	.58	.57	.73	.67	.39	-

Note. Factor 1 = Strengths and Limitations and Support Community; Factor 2 = Disability Awareness; Factor 3 = Persistence; Factor 4 = Interacting with Others; Factor 5 = Goal Setting and Attainment; Factor 6 = Employment; Factor 7 = Student Involvement in the IEP.

Table 14

Factor Loadings and R^2 for TAGG-S for Study 2

Item	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5	Factor 6	Factor 7	R^2
1	.60							.36
2	.42							.18
3	.38							.14
4	.21							.04
5		.65						.43
6		.68						.46
7		.45						.21
8		.35						.13
9			.72					.51
10			.74					.55
11			.64					.41
12			.63					40
13			.69					.47
14				.50				.25
15				.25				.06
16				.64				.41
17					.56			.43
18					.44			.20
19					.61			.37
20					.47			.22
21					.73			.54
22					.20			.04
23						.84		.70
24						.91		.83
25						.10		.01
26						---		---
27							.71	.50
28							.77	.60
29							.80	.65
30							.48	.23
31	.62							.38
32	.49							.24
33	.53							.28
34	.06							.00

Note. Factor 1 = Strengths and Limitations and Support Community; Factor 2 = Disability Awareness; Factor 3 = Persistence; Factor 4 = Interacting with Others; Factor 5 = Goal Setting and Attainment; Factor 6 = Employment; Factor 7 = Student Involvement in the IEP.

Table 15

Factor Correlations for TAGG-S for Study 2

	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5	Factor 6	Factor 7
Factor 1	---						
Factor 2	.38	---					
Factor 3	.84	.21	---				
Factor 4	.75	.13	.77	---			
Factor 5	.81	.41	.82	.63	---		
Factor 6	.65	-.04	.60	.69	.44	---	
Factor 7	.46	.46	.34	.34	.50	.21	---

Note. Factor 1 = Strengths and Limitations and Support Community; Factor 2 = Disability Awareness; Factor 3 = Persistence; Factor 4 = Interacting with Others; Factor 5 = Goal Setting and Attainment; Factor 6 = Employment; Factor 7 = Student Involvement in the IEP.

Table 16
Reliability Coefficients (α) for Three Versions of TAGG for Study 1

Factors	TAGG-P	TAGG-F	TAGG-S
Strengths and Limitations	.85	.81	.64
Disability Awareness	.81	.80	.64
Persistence	.93	.91	.82
Interacting with Others	.77	.52	.44
Goal Setting and Attainment	.90	.88	.73
Employment	.74	.62	.56
Student Involvement in the IEP	.85	.85	.81
Support Community	.68	.60	-
Overall	.95	.94	.89

Note: Cronbach's coefficient alpha internal consistency rating is generally viewed as follows: $\alpha \geq .9$ = excellent, .89 to .8 = good, .79 to .7 = acceptable, .69 to .6 = questionable, .59 to 5 = poor, and .49 and below = unacceptable.

Table 17

Reliability Coefficients (α) for Three Versions of TAGG for Study 2

Factors	TAGG-P	TAGG-F	TAGG-S
Strengths and Limitations	.84	.75	.55
Disability Awareness	.76	.77	.57
Persistence	.94	.90	.82
Interacting with Others	.71	.52	.45
Goal Setting and Attainment	.91	.87	.64
Employment	.72	.50	.55
Student Involvement in the IEP	.87	.85	.75
Support Community	.64	.62	---
Overall	.94	.93	.85

Note: Cronbach's coefficient alpha internal consistency rating is generally viewed as follows: α ≥ .9 = excellent, .89 to .8 = good, .79 to .7 = acceptable, .69 to .6 = questionable, .59 to 5 = poor, and .49 and below = unacceptable.

Chapter Four

Scoring the TAGG

The purpose of this chapter of the Technical manual is to present the steps employed to develop scores for the three versions (i.e., professional, family, and student) of the *Transition Assessment and Goal Generator* (TAGG). Procedures were the same for the three versions. Due to their proprietary nature, specific scoring algorithms will not be presented. Rather, an overview of the approaches used to develop scores and generate results for the three versions of the TAGG will be presented here. This chapter will be organized in the following way

- Description of the specific challenges associated with scoring the TAGG and the decisions made to alleviate these challenges;
- A description of the four-step procedure employed to create each of the TAGG construct (subscale) scores and compare the scale scores across constructs; and,
- Descriptions of the procedures used to generate scoring profile results, including specific goals for each student based on their scale scores.
- A presentation of handling of missing data is also included.

All tables and figures are presented at the end of the chapter.

Decisions Made to Alleviate Scoring Challenges

Formulating scores of the TAGG-P, TAGG-F, and TAGG-S presents several psychometric challenges. Although the structures of the TAGG instruments are well understood through factor-analytic study, scoring represents the psychometric goal of placing each student onto a common scale, which can then be used for communicating actions to be taken. Among the many challenges present in the TAGG are a) the fact that each subscale of the TAGG contains a different number of items, and b) some items are scored on different scale types (e.g., 5-point Likert-type scales versus Yes/No binary items). Moreover, although the factor analytic results represent a good first-order approximation to the true structure, it is likely the item responses are actually related non-linearly to the latent constructs measured by the three versions of the TAGG.

To address these scaling issues with the TAGG (all three versions), we employed Item Response Theory (IRT) to score each subscale of the TAGG. IRT scaling has certain advantages to the classical rules of scoring tests by summing items. These advantages include the ability to scale different item types, provide a common metric for scales with different numbers of

items, weight items differentially by their validity for assessing the construct of interest, and obtain sample-invariant estimates of the item parameters used in creating scores.

In applying IRT principles to the TAGG, we made several choices among the various IRT technologies available in the literature. First and foremost, we chose to use Samejima's (1969) graded response model as the basis for estimating the item parameters. Samejima's model handles both polytomous response and binary response data with a minimum of scaling assumptions, making it a natural choice for the TAGG.

Second, given the item parameters, we chose to create IRT scale scores from summed scores using the approach of Thissen, Pommerich, Billeaud, and Williams (1995). Typical IRT-scoring uses response-pattern scoring, where unique response patterns result in a unique IRT scale score. Because of the need to create scores quickly in real-time assessment, estimates of construct-level scores are instead obtained via summed score approximations. These so-called EAP|SS (expected a posteriori scores for a given summed score) scores are basically weighted averages of the full EAP scores for all response patterns that result in the same summed score. Although some precision will be lost, considering only 25 (5 x 5) possible summed scores versus 3,125 (5^5) possible response patterns in a 5-item 5-point Likert-type response scale is crucial when implementing real-time scoring.

Finally, we chose to use IRTPRO software (Cai, Thissen, & du Toit, 2011) to construct the scoring tables needed for each subscale construct for each version of the TAGG. These tables were then used as the basis of the algorithms implemented via the web-based TAGG software to create scoring displays and to assist in creating the appropriate transition goals for the student.

Creating the TAGG Subscale Scores

Before describing the procedures employed to develop TAGG subscale scores, it is appropriate to present a description of the sample of participants used to develop these procedures. Data from all participants responding to the three versions of the TAGG in Phases I and II of data collection were included in the present analysis. Because further details regarding the characteristics of the sample are presented in other chapters in the Technical Manual, only basic demographic characteristics will be presented here. Readers are referred to Chapters 3 and 5 for more sample details.

Professional Participants

Thirty-nine transition professionals participated in data collection in Phase I and an additional 34 participated in Phase II. Of these transition professionals, a total of 68 reported being female. Additional sample characteristics can be found in Table 1.

Family Participants

Results presented in this chapter of the Technical Manual relating to the development of scores and scoring procedures are based on a total of 500 family member participants. Specifically, 271 family members participated in Phase I and 229 participated in Phase II of this research. Further sample characteristics are presented in Table 2.

Student Participants

The algorithms and procedures presented here are based on data collected from 691 student participants. Three hundred forty nine participants were included in Phase I and the remaining 342 students participated in Phase II. More demographic information

is included in Table 3 and in Chapters 3 and 5 of the Technical Manual.

Description of the Algorithms and Procedures Employed

Using the IRT methodology described previously, we constructed a four-step algorithm for converting raw data into scores for each student to assist in setting transition goals. These four steps include 1) placing each scale onto a common score metric, 2) projecting item characteristics (e.g., item difficulty) onto the scale score metric, 3) conducting a within-student comparison of scale scores across constructs to determine relative strengths and weaknesses, and 4) conducting a within-construct comparison of a student's scale score to item responses (e.g., difficulty) to generate appropriate goals on identified weaknesses. We will now consider each of these steps in more detail. To illustrate these steps, we will use the TAGG-P Disability Awareness (DA) scale throughout this section.

Placing Each Scale Onto a Common Metric

When identifying relative strengths and weaknesses across constructs, it is important to compare scores in the same scale. As noted earlier, we used the Thissen et al. (1995) EAP|SS methodology to create scale scores for each construct, even though each construct had a different number of items and, thus, a different summed-score range. The result is a standard z-score scale for each construct. Figure 1 represents a graphical depiction of the process using the IRT-based Test Characteristic Curve (TCC), which shows the (non-linear) relationship between summed score and scale score.

Table 4 shows the specific results of scoring the TAGG-P DA scale using the EAP|SS transformation. Reading Table 4, a raw summed score of 0 (on a 0-4 scale) results in a scale score of $\Theta = -2.012$, indicating poor responding in terms of Disability Awareness. Conversely, a raw summed score of 16 results in a scale score of $\Theta = +1.862$, indicating a strong positive response on this scale. The standard error of measurement for each scale score is used later in determining relative strengths and weaknesses.

For each construct on each of the three TAGG versions, we implemented this process, creating tables of scale scores and implementing these tables in the web-based version of the TAGG-P, TAGG-F, and TAGG-S. These scale scores will then be compared within a student's results to identify relative strengths and weaknesses.

Projecting Item Characteristics Onto the Scale Score Metric

One of the advantages of using IRT methodology is the capability of comparing each student's scale score to the relative response propensity (e.g., item difficulty) of each item. This capability allows the TAGG to identify specific behaviors for which a student shows a relative weakness once the overall behavioral construct has been identified as a weakness. Technically, of course, these comparisons are best made when a Rasch (equal-slope) version of the Samejima model holds. For the TAGG, item slopes did vary across items; nevertheless, a first-order approximation (an average) of item difficulty can be constructed and used for the purpose of identifying shortcomings in specific behavior. Figure 2 shows a graphical description of the item characteristic curves for the four items of the TAGG-P DA scale, and Figure 3 shows the averaged item difficulty for item 2 of the TAGG-P DA Scale. The arrow on Figure 3 shows the value on the proficiency scale (e.g. scale

score) for which a student is at least 50% likely to respond with a 2 or higher on a 0-4 scale. We have called this scale-score value the average item difficulty for the item. This suggests a student with a scale score greater than -0.24 will be more likely than not to respond in the upper half of the scale. This methodology was used to create average item difficulties for each item and the results are stored in a table in the TAGG web-based software.

Comparing Scale Scores Across Constructs

As stated earlier, we now want to conduct a *within-student comparison* of scale scores across constructs to determine relative strengths and weaknesses. Since each of our behavioral constructs are now represented on a common metric, we can simply rank order each student's scores *across the constructs* and use the lowest score to determine each student's relative weaknesses and relative strengths. This section encompasses steps 3 and 4 of the four-step procedure employed to develop TAGG scores. Figure 4 shows a visual representation of this process comparing only two constructs for ease of presentation.

Figure 4 shows an example of both a relative strength and a relative weakness on two constructs. In the figure, a student scores low (Θ = -1.10) on Disability Awareness while scoring high (Θ = +0.97) on Persistence. In this simple case, this student would be identified as having a relative weakness on Disability Awareness and having a relative strength on Persistence. Of course, on the TAGG-P, the software ranks up to eight different behavioral constructs before identifying relative strengths and weaknesses.

Finally, the TAGG software also considers the fact that although students will vary on their scale scores across constructs, they might not vary all that much. When students' scale scores vary by more than a standard error of measurement, a relative strength or weakness is labeled then as a greatest strength or weakness, rather than just a relative strength or weakness. Figure 4 contains two scale scores that are more than a standard error of measurement apart, and thus would be labeled as a greatest weakness (strength).

Generating Scoring Profile Results

Generating Specific Behavioral Goals

The last of the four-step algorithm involves conducting a *within-construct comparison* of a student's scale score to the average item responses (e.g., difficulty) to generate appropriate goals on identified weaknesses. Following step 3 of the process above, the TAGG software will have identified up to two relative (or greatest) weaknesses at the overall behavioral construct level. For goals to be of value, however, they must be specific. Because each of the items addresses specific behaviors, the TAGG compares the overall construct-level scale score (step 1) to the item-specific average difficulties. When a scale score fails to exceed an average item difficulty, that item is tagged to generate a specific behavioral goal addressing the content of that item. Of course, since there are many items per construct, there may be several instances in which a student's scale score fails to exceed the item-specific difficulty value. In these cases, we again rank order the differences between the student's scale score and all of the item-specific difficulty values, and then we choose those specific behaviors for which the student has indicated the poorest performance. This guarantees at least two goals are generated for each student-identified weakness.

Stanine Scores

Although all scoring and scoring comparisons are done at the scale-score level, presenting scale scores in a z-score metric is not advisable to the general public. For presentation purposes, all scale scores are transformed using a stanine transformation. The stanine transformation places scale scores into one of nine categories. Each of the nine categories has a width corresponding to a half of a standard deviation on the normal curve, with the mean lying at the center of the stanine score of 5. Stanine scores have the advantage of being single-digit scores and thus easy to graph, while reducing the tendency to try to interpret small scale-score differences. Figure 5 shows an example of how the stanine scores will be presented.

Missing Data

Although the TAGG software encourages each respondent to answer all questions, sometimes missing data occurs. While IRT pattern-scoring procedures do not require complete data to estimate individual scale scores, using the EAP|SS summed score estimates do require complete (or at least imputed) data for all items. To ascertain the effect of missing data on TAGG scores, a small simulation comparing the degree of missing data and various methods for imputation (within-student mean imputation, between-student mean imputation, regression-based estimates, etc.) was conducted on a set of compete TAGG data. Using a criterion of at least an $r = .90$ correlation between imputed and actual (complete) values, we determined that using a within-student (within-construct) mean imputation with no more than one missing value per construct returns reasonable estimates of scale scores. The web-based implementation of the TAGG uses this imputation algorithm when missing data occurs.

References

Cai, L., Thissen, D., & du Toit, S. H. C. (2011). *IRTPRO for Windows*. [Computer software]. Lincolnwood, IL: Scientific Software International.

Samejima, F. (1969). Estimation of latent ability using a response pattern of graded scores. *Psychometrika Monograph Supplement, 34* (4, Pt. 2).

Thissen, D., Pommerich, M., Billeaud, K., & Williams, V. S. L. (1995). Item response theory for scores on tests including polytomous items with ordered responses. *Applied Psychological Measurement, 19*, 39-49.

Table 1

Demographic Information for Professional Participants

	Phase I	Phase II
Sample size	39	34
Average Age	47 (10.2)	46 (8.7)
Average Years Teaching Experience	16 (10.9)	13 (9.2)
% Female	94.9	91.2
Racial/Ethnic Categories		
% Caucasian	76.9	85.3
% African American	12.8	11.8
% Hispanic	5.0	2.9
% American Indian	2.6	8.8

Note. Standard deviations are given in parentheses

Table 2
Demographic Information for Family Participants

	Phase I	Phase II
Sample Size	271	229
Average Age	45 (8.6)	43 (11.3)
Family Respondent		
% Mother/stepmother	80.0	78.0
% Father/stepfather	11.0	11.0
% Grandparent	3.7	5.7
% Legal guardian	2.6	0.9
% Lived with student	97.8	97.8
Family Education		
% No H.S. diploma	14.0	9.2
% H.S. education only	45.0	37.1
% Greater than H.S. education	38.0	51.5
% Had help with forms	0.9	6.6
Racial/Ethnic Categories		
% Caucasian	68.0	75.1
% African American	10.0	8.3
% Hispanic	6.0	5.2
% American Indian	3.0	10.9

Note. Standard deviations are given in parentheses

Table 3
Demographic Information for Student Participants

	Phase I	Phase II
Sample Size	349	342
Average Age	17 (1.4)	16 (3.1)
% Female	46.4	43.7
% Eligible for Free/Reduced Lunch	56.0	55.7
Grade Level		
% 9th grade	12.0	21.0
% 10th grade	26.0	16.3
% 11th grade	27.0	25.7
% 12th grade	35.0	35.6
Racial/Ethnic Categories		
% Caucasian	67.0	70.3
% African American	17.5	11.4
% Hispanic	12.0	11.4
% American Indian	4.0	13.4
% ELL	1.7	2.6
Disability Information		
% LD	61.0	56.6
% ID	12.0	13.1
% OHI	12.0	15.2
% ED	5.0	6.7
% Other disability	12.0	8.4
% Secondary disability	11.5	14.0

Note. Standard deviations are given in parentheses

Table 4

Scale Scoring Table for the Disability Awareness Subscale of the TAGG-P

Raw Score	Scale Score	Standard Error
0	-2.012	0.541
1	-1.589	0.458
2	-1.330	0.442
3	-1.104	0.431
4	-0.898	0.426
5	-0.699	0.420
6	-0.509	0.419
7	-0.323	0.422
8	-0.139	0.428
9	0.045	0.435
10	0.233	0.444
11	0.431	0.454
12	0.641	0.468
13	0.858	0.469
14	1.108	0.476
15	1.410	0.492
16	1.862	0.565

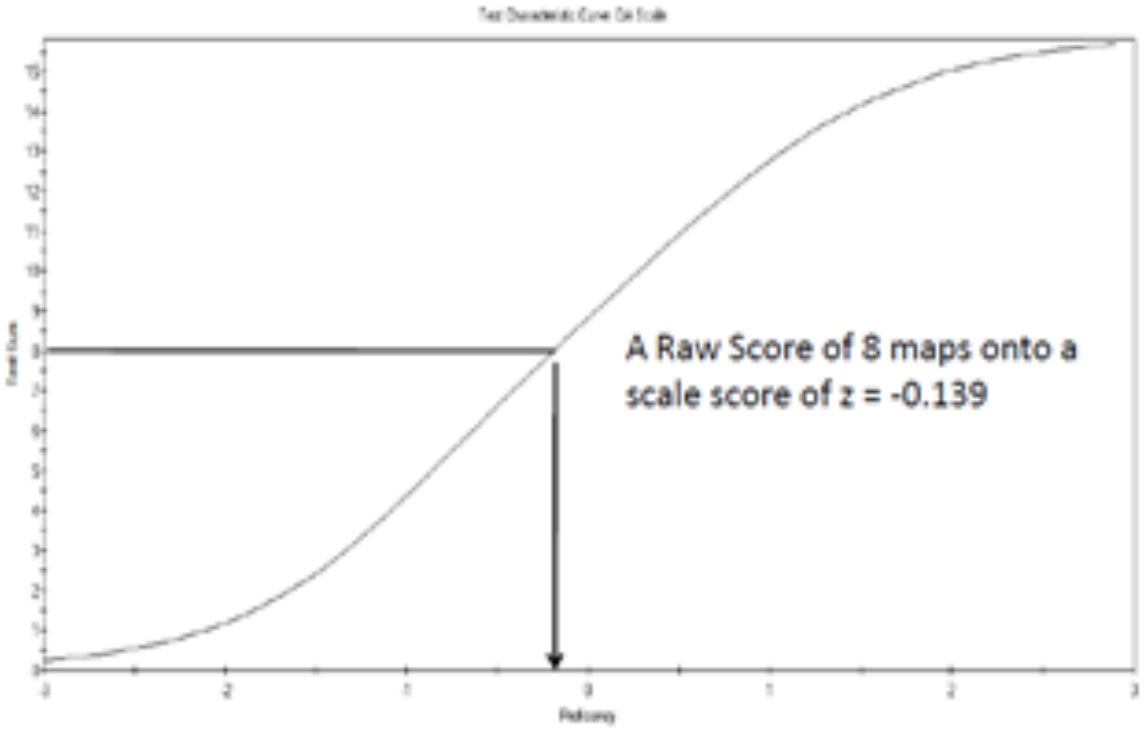

Figure 1. EAP|SS transformation via the TCC for TAGG-P DA scale.

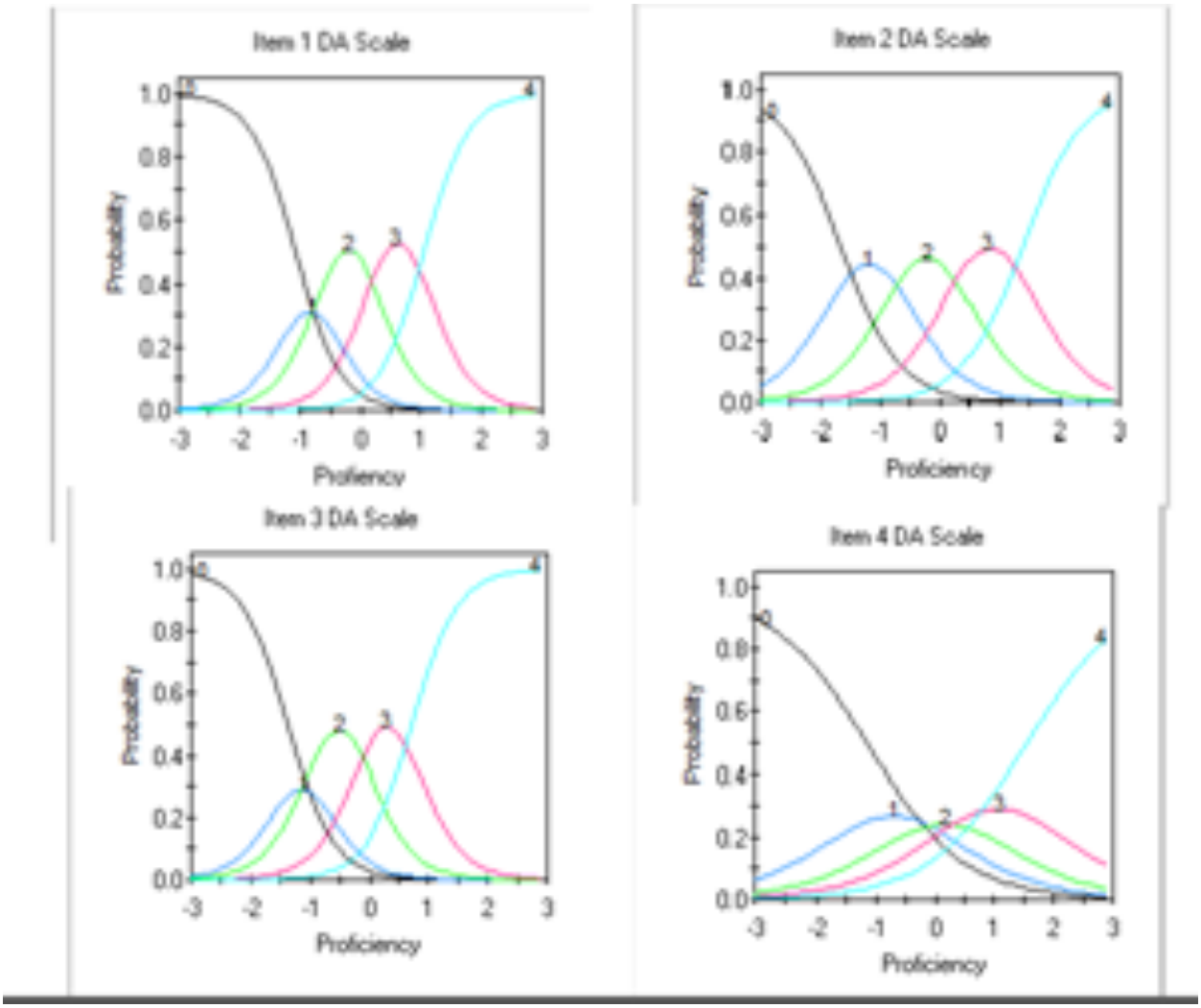

Figure 2. Item Characteristic Curves for TAGG-P DA scale.

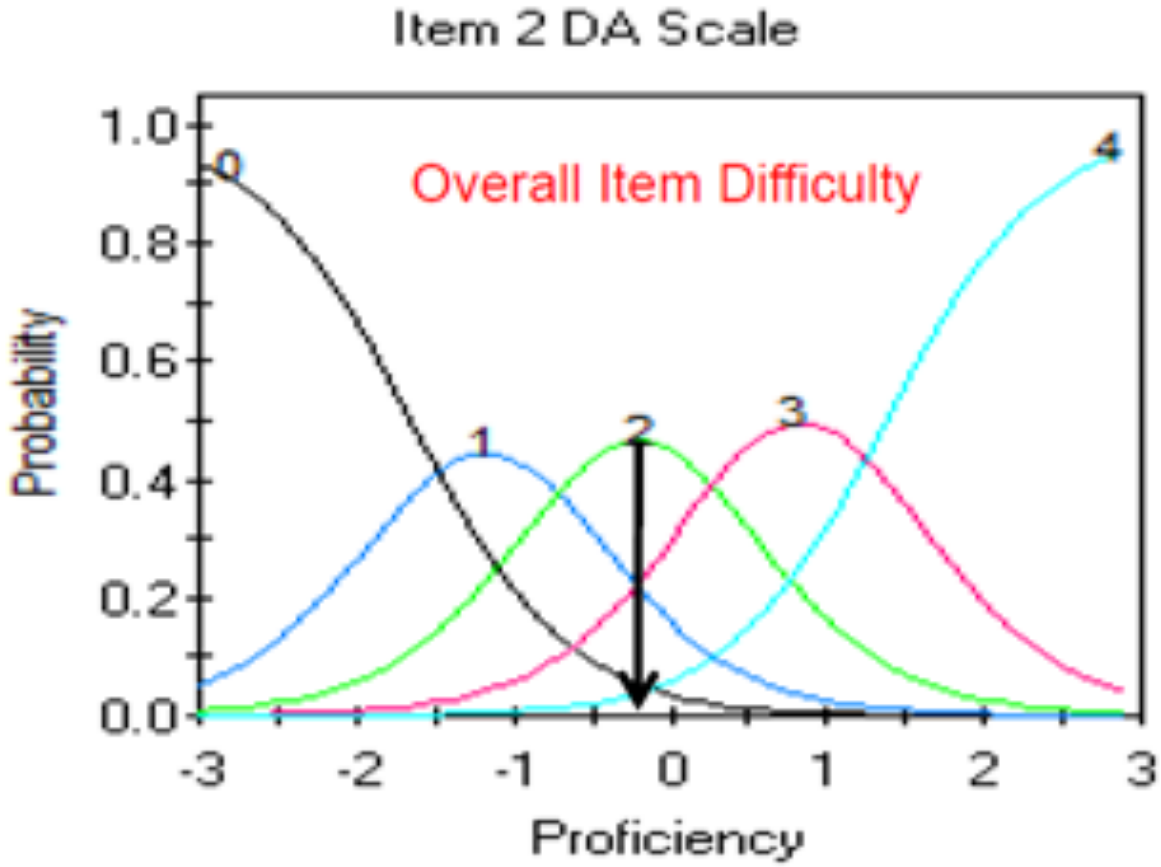

Figure 3. Overall item difficulty for Item 2 TAGG-P DA scale.

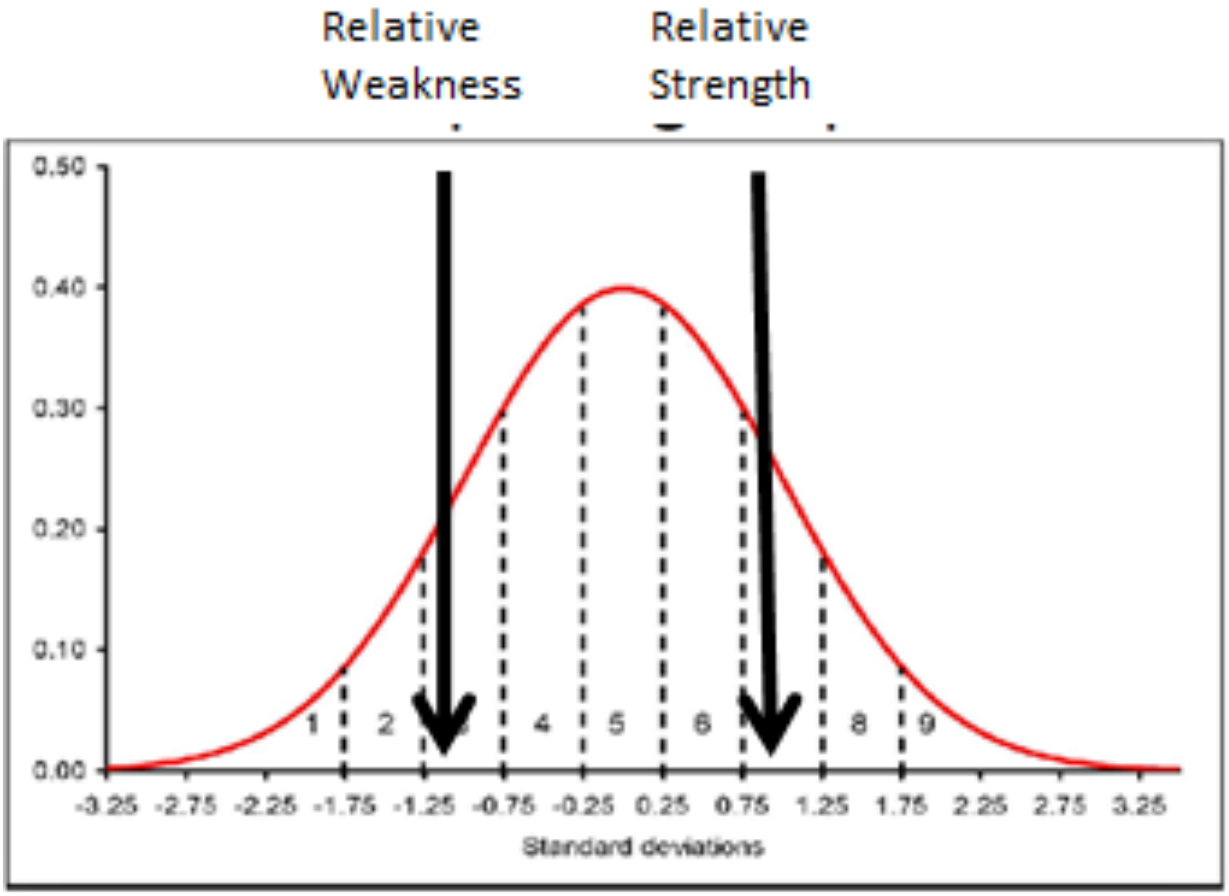

Figure 4. Identifying relative strengths and weaknesses within a student.

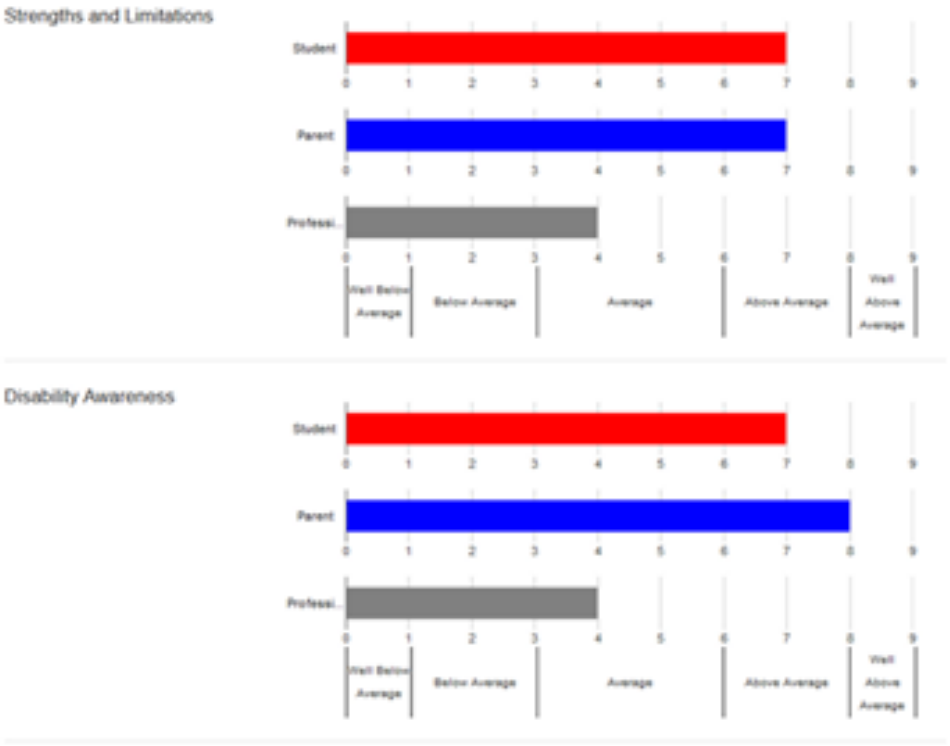

Figure 5. Stanine score presentation.

Chapter Five

TAGG Validity Evidence

The purpose of this chapter is to present the results of a series of studies completed to gain evidence of the validity of scores obtained from the three versions (i.e., professional, family and student) of the Transition Assessment and Goal Generator (TAGG).

This chapter will be organized in the following way:

- Relations between TAGG scores and demographic variables
  - Differences in TAGG scores by gender
  - Differences in TAGG scores by disability category
  - Differences in TAGG scores by socio-economic status
    - School-level measures of socio-economic status
    - Student-level measures of socio-economic status
- Relations between TAGG scores and other variables
  - Relations between TAGG scores and GPA
  - Relations between TAGG scores and the percentage of time students spend in the general education classroom

Unlike the data presented in Chapter 3, evidence for the validity of the scores will be presented based on the variables under investigation instead of by TAGG version so that an interpretation of relations between TAGG scores and each of the demographic or outcome variables can be made as a whole.

We will present validity evidence, as described in the introduction, relating to both student demographic characteristics as well as outside variables that may influence TAGG scores on each of the three versions of the TAGG (i.e., professional, family, and student). A description of the participants for each investigation and the independent variables used to assess validity evidence will first be given. Results will then be described, followed by conclusions for each piece of validity evidence.

Relations Between TAGG Scores and Demographic Variables

Relations Between TAGG Scores and Student Gender

In this section, we will present relations between TAGG scores and student gender. We will first give a description of the participants providing data and the specific variables used in the investigation. Results and an interpretation of the evidence of validity obtained will conclude the section.

Professional participants. Seventy-two professional educators provided data about students they work with who have disabilities. Sixty-seven (93.1%) of those educators reported being female and 59 (81.9%) stated their ethnicity was Caucasian, with the second highest category being African American with 10 educators (13.9%). The majority of professional educators reported they either had Master's degrees (n = 25) or had taken some Master's level courses (n = 15) and most were special education teachers (n = 53). More demographic characteristics can be found in Table 1.

Family participants. Family participants consisted of 497 family members, 393 (79.1%) of whom identified themselves as being the mother of the student about whom they were responding to the TAGG-F items. Three hundred sixty eight family members (63.6%) reported being Caucasian, with the largest number of family respondents reporting their highest level of education was a high school diploma or GED (n = 204, 42.1%). More demographic data for family participants can be found in Table 2. Data from a subset of these participants was included in the MANOVA analyses (described below) due to missing data for some constructs on the family TAGG version (TAGG-F), and demographic information for only this subset of participants can be found in Table 2.

Student participants. Participants consisted of 691 students whose teachers have categorized them as having mild to moderate disabilities. Of those students, 380 (55.0%) were male and 305 (44.1%) were female, with six students not reporting gender. Participants were in 9th (n = 114, 16.5%), 10th (n = 146, 21.1%), 11th (n = 182, 26.3%), and 12th (n = 242, 35.0%) grades across the two phases of this study. The majority of students were classified by their teachers as having a specific learning disability (n=411, 59.5%), with other disabilities being less frequently identified. A majority of students qualified for free or reduced-price lunches (n = 380, 55.0%). As with data from family participants, data from a subset of these student participants were included in the MANOVA analyses (described below) due to missing data for some constructs on the student TAGG version (TAGG-S). More demographic information can be found in Table 3.

Independent variable. In order to investigate the relations between TAGG scores and gender, we collected demographic information from the education professionals regarding the student's gender to use as a grouping variable. This information was collected from education professionals because we also collected a number of other pieces of demographic data, some of which came from student records and the students would not know the answers. Further, we felt that asking education professionals to respond to demographic questions would lessen the cognitive burden placed on our sample of students, enabling their responses to the TAGG questions to be a better indicator of their skill set in those areas.

Dependent variables. Scaled scores for each of the 8 constructs on the TAGG-P (professional TAGG) and TAGG-F versions and the 7 constructs on the TAGG-S version were used as dependent variables. See Chapter 4 for an explanation of the scaling methods used to develop these scores.

Results. To investigate the extent to which there were significant differences in TAGG construct scores as a result of gender, a series of MANOVAs were performed. Separate MANOVAs were performed on

each version of the TAGG with all scaled construct scores (see Chapter 4 for an explanation of the scaling methods employed) used separately as dependent variables. Data for Phases 1 and 2 of the study were compiled. Descriptive statistics (i.e., means and standard deviations) for each scaled construct score for each version of the TAGG are provided in Tables 4 through 6.

Professional results. Results of the investigation using data obtained on the TAGG-P indicated no significant multivariate effect for construct scores [Hotelling's Trace (*df* = 8, 660) = .011, p = .51, partial η^2 = .011, power = .426]. Table 4 presents the results of follow-up univariate assessments at the construct level. As expected, there were no significant univariate results for construct scores for data obtained from the TAGG-P, suggesting professional educators do not rate students differently on the constructs assessed on the TAGG based on their gender.

Family results. Results of the investigation using data obtained on the TAGG-F did show a significant multivariate effect for construct scores [Hotelling's Trace (df = 8, 466) = .037, p = .03, partial η^2 = .036, power = .857]. An investigation of the follow-up univariate tests for each of the eight constructs of the TAGG-F can be found in Table 5. Results of the follow-up investigations showed significant differences in the ratings family members provided for Strengths and Limitations, Disability Awareness, and Persistence, with female students being rated higher than males for all constructs by .166, .214, and .175 scale points, respectively.

Student results. Significant multivariate effects were also found when an investigation of data obtained from the TAGG-S was completed [Hotelling's Trace (df = 7, 649) = .025, p = .03, partial η^2 = .024, power = .846]. An investigation of the follow-up univariate tests for the seven constructs making up the TAGG-F is presented in Table 6. This investigation revealed that females rated themselves significantly higher than males on Student Involvement in the IEP by .164 scale points.

Conclusion. Overall, there were very little differences in the extent to which male and female students scored on the three versions of the TAGG. In other words, we do not see significant differences in the ratings of male and female students on the TAGG assessment. The most salient feature of this analysis is the extent to which there are not significant differences between males and females on the TAGG-P constructs.

Education professionals rated males and females similarly on all TAGG-P constructs; there were no significant differences to be found on that version of the assessment. There were, however, significant differences for some of the constructs on both the TAGG-F and TAGG-S versions of the assessment. Specifically, female students were rated as having higher awareness of their own strengths and limitations than male students by their family members. They were also rated as having higher levels of awareness of their disabilities and higher levels of persistence by family members than their male counterparts. Similar results were found when investigating construct-level scores for the ratings obtained from the TAGG-S. Specifically, female students rated themselves as having higher involvement in their IEP meetings than their male counterparts.

Although these construct-level differences were found for scores from both the TAGG-F and TAGG-S versions, we feel that these

differences do not constitute a problem with the validity of the TAGG battery of assessments for determining the behaviors and skills students should gain upon exiting high school. The greatest piece of evidence for this claim can be seen in the fact that there were no significant differences in any construct score on the Professional version of the TAGG. Professional educators do not observe male and female students to be acquiring the skills assessed by the TAGG differently from each other.

Relations Between TAGG Scores and Disability Category

In this section, we will present relations between TAGG scores and the category of the disability under which the student falls. For this investigation, a number of students had disabilities categorized that were not as common as the disabilities of other students. Students whose disabilities fall into those categories (i.e., multiple disabilities, orthopedic impairment, other, speech or language impairment, traumatic brain injury, hearing impairment, and deaf-blindness) had small enough numbers of students as to preclude their inclusion in the analysis here. Descriptive statistics for participants who are and are not included in this investigation are given in Tables 7 through 12. A description of the participants providing data and the specific variables used in the investigation is given below. Results and an interpretation of the evidence of validity obtained will conclude the section.

Professional participants. Professional participants for this study were the same as those for the gender study.

Family participants. The same family members participated in this study as those for the gender study described previously.

Student participants. Student participants for this study mirrored those as for the gender study.

Independent variable. In order to investigate the relations between TAGG scores and disability category, we collected demographic information from the education professionals regarding the student's disability category to use as a grouping variable. As with all student demographic information, this information was collected from education professionals.

Dependent variables. Scaled scores for each of the 8 constructs on the TAGG-P and TAGG-F versions and the 7 constructs on the TAGG-S version were used as dependent variables. See Chapter 4 for an explanation of the scaling methods used to develop these scores.

Results. To investigate the extent to which there were significant differences in TAGG construct scores as a result of disability category, a series of MANOVAs were performed. Separate MANOVAs were performed on each version of the TAGG with all scaled construct scores (see Chapter 4 for an explanation of the scaling methods employed) used separately as dependent variables. Data for Phases 1 and 2 of the study were compiled. Descriptive statistics (i.e., means and standard deviations) for each scaled construct score for each version of the TAGG are provided in Tables 7 through 9.

Professional results. Results of the investigation using data obtained on the TAGG-P indicated significant multivariate effect for construct scores [Pillai's Trace (32, 2488) = .158, p = .000, partial η^2 = .040, power = 1.00]. Tables 13 through 20 present the results of follow-up univariate assessments at the construct level. Results

showed significant differences in professional ratings on all constructs. For the *Strengths and Limitations* construct, mean professional ratings were lower for students with autism when compared with ratings for students with other health impairment or specific learning disability by.624, and .619, respectfully. Mean scores for students with an emotional disturbance were scored .454 lower than students with specific learning disability.

For the *Disability Awareness* construct, mean professional ratings for students with specific learning disabilities were higher than students with autism, emotional disturbance, and intellectual disability by .597, 520, and .289, respectively. Mean professional ratings for students with emotional disturbance were .475 lower than students with other health impairment.

Family results. Results of the investigation using data obtained on the TAGG-F showed a significant multivariate effect for construct scores [Pillai's Trace (32, 1736) = .174, p = .00, partial η^2 = .044, power = 1.00]. An investigation of the follow-up univariate tests for each of the eight constructs of the TAGG-F can be found in Tables 21 through 28. Results of the follow-up investigations showed significant differences in the ratings family members provided for all constructs, excluding Disability Awareness.

Student results. Significant multivariate effects were also found when an investigation of data obtained from the TAGG-S was completed [Pillai's Trace (28, 2456) = .117, p = .00, partial η^2 = .029, power = 1.00]. An investigation of the follow-up univariate tests for the seven constructs making up the TAGG-S are presented in Tables 28 through 35. Results of the follow-up investigations showed significant differences in student ratings for all constructs, excluding Disability Awareness.

Conclusion. It is unsurprising that students having different disabilities are scored in diverse ways on the three versions of the TAGG assessment. Students having different disabilities vary in their needs and in the skills and behaviors they are able to attain during their high school careers. Nonetheless, some trends in the data can be seen. In general, students having less severe disabilities, such as those with a specific learning disability, scored higher on TAGG constructs than did those who had different types of disabilities, such as an intellectual disability or autism. These trends lead us to infer that although the TAGG produces different scores for students with different disabilities, the differences in TAGG scores are appropriate for those students.

Relations Between TAGG Scores and Socio-Economic Status

In this section, we will present relations between TAGG scores and SES as measured by individual and school-level free/reduced lunch status, family employment, and family education level. A rationale will first be given regarding the importance of determining the extent to which TAGG scores are related to students' SES status. This rationale will be followed by a description of the participants providing data and the specific variables used in the investigation. Results and an interpretation of the evidence of validity obtained will conclude the section.

Professional participants. Seventy professional educators participated in this study. Professionals were 48.61 years old on average (SD = 9.04), and 65 (92.9%) were females. The overwhelming majority reported being Caucasian (84.3%), with 14.3% reporting they were African

American, and 5.7% reporting they were Hispanic. Fifty-two classified themselves as special education teachers (74.3%) and 17 as transition specialists (24.3%), with other participants holding various positions related to special education. On average, professional participants reported an average of 15.4 years of experience teaching students with disabilities (*SD* = 10.01).

Family participants. Approximately 77.3% (n = 286) of the 370 family members who provided data about their socio-economic status and participated in this study were mothers or stepmothers, 11.9% were fathers or stepfathers (n = 44), and 5.1% were grandparents (n = 19). Participants were 43.53 years old on average (*SD* = 10.23). The majority of family members reported being Caucasian (71.4%), 11.4% reported being African American, 11.4% reported being Hispanic, and 8.4% reported being American Indian. Approximately 59.7% of family participants were married.

Student participants. The average age of the 370 student participants was 16.6 years (*SD* = 2.5), and 52.7% were males. Students from 9th through 12th grades completed the assessment, with 19.2% being in 9th grade, 20.5% being in 10th grade, 24.9% being in 11th grade, and 35.1% being in 12th grade. Students from a variety of disability categories completed the assessment, with 56.7% of students having learning disabilities, 13.4% having an intellectual disability, 11.9% having health impairments, and 5.6% having an emotional disturbance. Further, 11 students (2.4%) received support for English as a second language.

Independent variables. Before presenting data for this section, it is important to note the sample sizes for this study are smaller than those for other studies for two reasons. First, we included only those student participants who also had participating family members. Some of the information regarding socio-economic status was collected only from family members, so those students without participating family members were excluded. Second, not all family members responded to demographic questions regarding socio-economic status. Data for students whose socio-economic status could not be determined were eliminated from the analysis.

For this study, we investigated the impact each of four variables representing students' socio-economic status (i.e., student eligibility for free/reduced lunch, family employment status, family education level, and school-level free/reduced lunch status) had on TAGG scores. Three of the variables were at the level-1, or student level, and one of the variables was a level-2, or school level, variable. As described previously, all student demographic data was collected from educators to reduce the cognitive load on student participants. A brief description of each independent variable follows.

Eligibility for free/reduced lunch. Free/ reduced lunch eligibility was a categorical variable indicating whether the student was eligible to receive either free or reduced lunches. Educators reported 240 students were eligible for free or reduced lunch and 123 were not. Data was missing for seven students.

Family employment status. Family employment was recorded for the person who completed the family demographic form. Family members responded as working full-time (n = 183), part-time (n = 47), not working (n = 104), or retired (n = 25). Data on this variable was missing for 11 participants.

Family education level. Because of the unique characteristics of each student's family situation, family education was coded as the highest level of education attained by one of the adult family members living in the student's household. After determining the highest level of education of the adults in the household where the student lived, family education level was coded into the following categories: less than high school completion (n = 36), high school diploma or vocational school completion (n = 198), Associate's or Bachelor's degree completion (n = 97), and graduate degree completion, including a Master's degree, Ph.D., or other professional degree (n = 30). Data was missing for nine participants because the data was either not given or was given only for a person who filled out the form who did not live with the student.

School-level free/reduced lunch status. Because socio-economic status is not just an individual-level variable but is also a representation of how the individual's economic situation compares with that of the greater community (Christie & Barling, 2010), we also collected information on the economic status of the 43 schools the participating students attended. For this study, the percentage of students receiving free or reduced lunch at the schools where the students were enrolled was used as a proxy for community economic status. School-level free/reduced lunch percentages were grand mean centered. We also collected information on the Title I status of each school; however, due to low variability in the data, this information was not used in the current study. In other words, virtually every school where students were enrolled received at least some Title I funding, so almost all schools could be classified as Title I schools.

Dependent variables. Scaled scores for each of the 8 constructs on the TAGG-P and TAGG-F versions and the 7 constructs on the TAGG-S version were used as dependent variables. See Chapter 4 for an explanation of the scaling methods used to develop these scores.

School-level results. We conducted MLM analyses (Luke, 2004) using the percentage of students at the school receiving free or reduced-price lunches as a predictor for each of the TAGG constructs separately for the three versions of the assessment. Results of these analyses were similar for each TAGG version. Specifically, school-level FRL% did not predict a significant proportion of the variance for any TAGG-P or TAGG-F construct scores. The one exception to this was for the *Persistence* construct on the TAGG-S version; however, the lower bound of the 95% confidence interval was 0.00, leading us to believe this significant result may be due to larger sample size.

Student-level results. We then investigated the extent to which each of the three student-level variables (i.e., free/reduced lunch eligibility, family employment, and family education) influenced TAGG construct scores for the three versions of the assessment using a series of MANOVAs. Free/reduced lunch eligibility did not produce significant results for either the TAGG-P [Pillai's Trace = .036, $F(8,351) = 1.626$, $p = .116$] or the TAGG-S [Pillai's Trace = .022, $F(7,352) = 1.706$, $p = .333$]. A significant multivariate effect was found for scores on the TAGG-F [Pillai's Trace = .080, $F(8,345) = 3.754$, $p = .000$].

Univariate follow-up tests showed scores were significantly different on the *Strengths and Limitations* [$F(1,352) = 5.751$, $p = .009$], and the *Goal Setting and Attainment* [$F(1,352) = 4.058$, $p = .006$] constructs for

students with free/reduced lunch eligibility. Family employment status did not produce significant results on any of the TAGG constructs for any version of the assessment [TAGG-P: Pillai's Trace = .129, F(32,1392) = 1.451, p = .050; TAGG-F: Pillai's Trace = .131, F(32,1372) = 1.449, p = .051; TAGG-S: Pillai's Trace = .081, F(28,1400) = 1.032, p = .419].

Results for Family education differed; there was a significant multivariate effect for scores on the TAGG-P [Pillai's Trace = .143, F(24,1044) = 2.181, p = .001]. Univariate follow-up tests showed significant results on the *Strengths and Limitations* [F(3,353) = 3.136, p = .026] and *Disability Awareness* [F(3,353) = 5.625, p = .001] constructs. There was also a significant multivariate effect for scores on the TAGG-S [Pillai's Trace = .095, F(21,1050) = 1.623, p = .036], but only the *Goal Setting and Attainment* construct showed significant univariate differences [F(3,354) = 3.555, p = .015]. There was a significant multivariate effect for scores on the TAGG-F [Pillai's Trace = .152, F(24, 1029) = 2.284, p < .001] with many constructs showing significant differences between the groups {*Strengths and Limitations* [F(3,348) = 3.849, p = .010]; *Disability Awareness* [F(3,348) = 4.019, p = .008]; *Persistence* [F(3,348) = 3.657, p = .013]; *Goal Setting and Attainment* [F(3,348) = 5.958, p = .001]; *Student Involvement in the IEP* [F(3,348) = 3.855, p = .010]; *Supports* [F(3,348) = 3.132, p = .026]}. Almost all of the differences between groups occurred between those parents who were at the highest level of education (Master's/Ph.D./other professional degree) and those who were at the lowest level of education (less than HS). These differences resulted in an increase of anywhere from .29 to .74 scaled score points.

Conclusion. Results indicated that, in general, a student's SES does not systematically predict TAGG scores. Contrary to much of the SES literature, the amount of poverty in the schools as indicated here by school-level FRL% was not a significant predictor of student TAGG scores. This may be due to assessing student skills and behaviors instead of academic variables. Additionally, it is encouraging that Family employment did not impact student TAGG scores, and a student's eligibility for free/reduced lunch had only minimal effects on the non-academic behaviors identified as important to college and career readiness for students with mild to moderate disabilities. This study did identify that family members with advanced degrees rated students as exhibiting more college and career readiness behaviors than those with less education, but the other two sources of data suggest that they may exhibit inflated scores. Overall, these results show little effects of SES on student TAGG scores. Our aim was to determine the extent which variables related to student SES could predict TAGG scores. These results provide validity evidence that TAGG scores are due to individual student differences, and not difference in SES variables.

Relations Between TAGG Scores and Other Variables

Relations Between TAGG Scores and Grade Point Average (GPA)

In this section, we will present relations between TAGG scores and student GPA. A rationale will first be given regarding the importance of determining the extent to which TAGG scores are related to students' GPAs. This rationale will be followed by a description of the participants providing data and the specific variables used in the

investigation. Results and an interpretation of the evidence of validity obtained will conclude the section.

Rationale for Investigation

The term "college and career readiness" has been freely used in recent years in relation to academic standards (Conley, 2007). Student GPA is used as an indicator of students being college and career ready and GPA is a major criterion for postsecondary school admission and initial employment opportunities (Camara & Echternacht, 2000; Test, Mazzotti, Mustian, Fowler, Kortering, & Kohler, 2009). Academic achievement has been found to predict post-school employment (McDonnall & Crudden, 2009). McDonnall and Crudden (2009) and Raskind, Goldberg, Higgins, and Herman (1999) reported academic achievement as a predictor of post-school employment for students with disabilities. Other studies have found low GPAs prohibited students from attending postsecondary education, and GPA predicted employment (i.e., Horn, Berktold, & Bobbitt, 1999; Leonard et al., 1999).

Rarely, however, are the non-academic skills needed to fully become college and career ready identified nor are any non-academic skills included in the various college and career readiness standards. Axiomatically, non-academic student behaviors must also be associated with post-high school education and employment, and numerous studies have identified non-academic indicators of post-school success for students with disabilities (e.g., Benz, Lindstrom, & Yovanoff, 2000; Fourqurean, Meisgeier, Swank, & Williams, 1991; Halpern, Yovanoff, Doren, & Benz, 1995; Test et al., 2009).

Student GPAs appear to predict post-school employment and education for students with disabilities (Adelman, 2006; Baer et al., 2003; Blackorby et al., 1993; DaDeppo, 2009; Heal & Rusch, 1994; Heal & Rusch, 1995; Oakes & Saunders, 2007; White & Weiner, 2004). Yet, no research has examined how GPAs relate to non-academic behaviors associated with student post-school employment and education. This investigation looked at the relations between students' GPAs and construct-level scores on all three versions of the TAGG. If a meaningful relation between TAGG scores and student GPA exists, educators could use GPA instead of using the TAGG to assess academic and non-academic college and career readiness. If a relation does not exist, this demonstrates a need for the TAGG because it assesses the non-academic behaviors researchers identified students with disabilities need for postsecondary education and employment. To answer this question, data from Phases 1 and 2 of the study presented in Chapter 3 have been compiled. The number of participants is not equal to those given in Chapter 3, because data to calculate GPA (described below) were collected from student transcripts and transcripts were missing for a number of participants. Below, demographic characteristics of both professional and student participants are given and are separated by study, but data for Phases 1 and 2 of the study were compiled to complete the analysis.

Professional participants. The majority of the professional participants identified themselves as female (93%) special education teachers (74%) with an average of 16.1 years of teaching experience. See Table 1 for more professional demographic information. Professional educators responded to the TAGG-P separately for each student participant, resulting in 650 responses. Please note that the investigation of GPA was completed in conjunction with the investigation of relations between

TAGG-P scores and percentage of time a student spends in general education classes.

Family participants. Seventy-nine percent of family member participants identified themselves as mothers or stepmothers, 8% as fathers or stepfathers, and 4% as grandmothers. Approximately 98% of the family member participants reported that the student participant lived in the home with them. Four hundred seventy one family members responded to the Family version of the TAGG. See Table 36 for family member demographic information.

Student participants. Professional participants completed demographic information for student participants and reported all of the 650 high school student participants received special education services with the majority being identified as having a specific learning disability (59%) or labeled under other health impairment (13%). The sample contained slightly more males (55.4%) than females and the average age of the students was 16.7 years (*SD* = 2.38). Each of the 650 student participants completed the TAGG-S version. See Table 37 for additional student demographic information.

Independent variable and protocol for calculating GPA. Transcripts were obtained for 342 participating students across eight states and the unweighted method was used to calculate GPA. The first step was to calculate GPA on a 4-point scale where an A earned a value of four, a B earned a value of three, a C earned a value of two, a D earned a value of one, and an F earned a value of zero. The use of qualifiers such as "+" or "-" that split every grade into 3 sub-grades such as "B+", "B", and "B-" were eliminated from consideration because they were not present in all transcripts. Average unweighted overall GPA and GPA for core classes (i.e., mathematics, English, social studies, and science) were calculated for each student based on the number of credits assigned to the student by the school. Due to local school control to determine which classes are considered in determining GPA, and number of credit hours assigned to each class, we did not attempt to make judgments inconsistent with the local school. For example, some schools counted driver's education as an elective course, and students received a letter grade and course credit. Other schools simply assigned a "P" for "passed" as the letter grade for driver's education and did not award graduation credit for the course. Driver's education was entered as an elective for the student from the first school and was not entered for the student in the second school.
One researcher entered all overall GPAs and core GPAs for each student. To assess inter-rater agreement of GPA calculation, a second researcher used randomly selected transcripts and coded 30% of the student sample (n = 209). Student GPAs were considered in agreement if each fell with the same range. The eight ranges used for GPA are as follows (a) 0.0 - 0.49, (b) 0.5 - 0.99, (c) 1.0 - 1.49, (d) 1.5 - 1.99, (e) 2.0 - 2.49, (f) 2.5 - 2.99, (g) 3.0 - 3.49, (h) 3.50 and higher. Allensworth and Easton (2007) suggested these GPA ranges in their study that found freshman GPA was directly related with graduation rate. Interrater agreement was 94%, ensuring that the GPA protocol was clear, could be reproduced, and the scoring system produced reliable scores (Cooper, Heron, & Heward, 2007).
Dependent variables. Scaled scores for each of the 8 constructs on the TAGG-P and TAGG-F versions and the 7 constructs on the TAGG-S version were used as dependent variables. See Chapter 4 for an explanation of the scaling methods used to develop these scores.

Results. Relations between student GPA as calculated using the above method and construct-level scores on the three TAGG versions were assessed using zero-order correlations. Jackson (2006) asserts Pearson's product-moment correlation coefficients between .29 and -.29 to have a weak strength and coefficient of determination below .16 to be too low to be considered meaningful, and these guidelines were used in the interpretation of the results. The students in this sample, on average, earned a GPA of 2.49 (SD = .60). The overall scores provided by educators and students did not provide statistically significant correlations or account for meaningful variance, $r(646) = .072$, $p > .05$; $r(637) = -.045$, $p > .05$, respectively.

Overall family TAGG scores yielded weak, negative correlations and were significant, yet did not provide a meaningful coefficient of determination $r(460) = -.101$, $p < .05$. Student GPA accounted for a small percentage of variance in overall TAGG scores provided by educators (0.6%), family members (1%), and students (0.2%). Table 38 presents correlations between TAGG scores and student GPA for each of the TAGG constructs for all three versions of the TAGG assessment. R^2 values, or coefficients of determination characterizing the percentage of variance jointly explained by the two variables, are included in Table 38 to aid in interpretation.

Conclusion. A student's high school GPA is often used as a criterion for admittance into postsecondary education and as a determination for scholarships. A low GPA could cause a student to not seek postsecondary education. Job resumes and applications often include an applicant's GPA and could attribute to the employability of an individual. Student GPA and the courses used to calculate GPA vary from school to school. A 4.0 on a 4.0 scale is vastly different from a 4.0 on a 5.0 scale, yet most applications require only a numeric value without knowing what the value actually represents. A student who participated in advanced classes may have scored lower than a person who did well in remedial class, and the student in remedial classes may have a higher GPA. Still, GPA is an important determination in admittance into postsecondary education and may be a deciding factor between job applicants.

Many times, students with high GPAs are thought to possess all needed skills to succeed after high school, yet very little was found in the way of meaningful relations between student GPA and TAGG scores. Specifically, student GPA and overall TAGG-F scores yielded a weak, significant negative correlation that did not provide a meaningful coefficient of determination. TAGG scores provided by educators and students showed no relations to GPA and where significant correlations were found, the percentage of variance in TAGG scores explained by students' GPAs was not meaningful. The results of this analysis show the TAGG assesses behaviors different than behaviors associated with student GPA.

Relations Between TAGG Scores and Percentage of Time Spent in General Education

In this section, we will present relations between TAGG scores and the percentage of time students spend in general education classrooms. A rationale will first be given regarding the importance of determining the extent to which TAGG scores are related to the percentage of time spent in general education classrooms. This rationale will be followed by a description of the specific variables used in the investigation. Results and an interpretation of the evidence of validity obtained will conclude the section.

Because this study used the same sample as that of the investigation of relations between TAGG scores and student GPA, no details of the participants will be given here. Readers are directed to Tables 1, 36, and 37, as well as the participant description in the previous section of this chapter for more information on the participants for this investigation.

Independent variable. In the course of giving demographic information about the students, professionals indicated the number of periods in each student's school day. The professional educator then indicated the number of periods in which each student received educational instruction in the general education setting. We calculated percent of time in general education by dividing the number of periods professionals indicated the students spent in general education by the number of total periods in the student's school day and then multiplied the quotient by 100.

Dependent variables. Scaled scores for each of the 8 constructs on the TAGG-P and TAGG-F versions and the 7 constructs on the TAGG-S version were used as dependent variables. See Chapter 4 for an explanation of the scaling methods used to develop these scores.

Results. As with the previous investigation of relations between TAGG scores and GPA, relations between TAGG scores and percentage of time spent in a general education classroom were also assessed using zero-order correlations and the rules of interpretation provided by Jackson (2006). The students in this sample received approximately 70% of instruction in the general education setting (SD = 26.35).

Overall TAGG scores provided by professional educators, family members, and students provided significant positive correlations too low to be meaningful with the students' percent of time in general education [TAGG-P: $r(651) = .102$, $p < .01$; TAGG-F: $r(468) = .096$, $p < .05$; TAGG-S: $r(640) = .091$, $p < .05$]. Table 39 provides correlation coefficients for all versions between TAGG scores and the percentage of time students spend in general education for all constructs, along with R^2 values to aid in interpretation.

The domain *Interacting with Others* yielded the highest correlations for all three versions, $r(649) = .232$, $p < .01$; $r(466) = .176$, $p < .01$; $r(640) = .150$, $p < .01$, respectively, yet these correlations did not account for enough variance to be considered meaningful ($R^2 = .054$), ($R^2 = .030$), ($R^2 = .023$), respectively. Percent of time students received instruction in the general education setting accounted for very small percentage of variance in overall TAGG scores provided by educators (1%), family members (.9%), and students (.8%).

Conclusion. The percent of time students received instruction in the general education setting ranged from 0% to 100% and had very little impact on the total TAGG scores provided by educators, family members, and students. Overall TAGG scores provided by educators, family members, and students provided very weak significant positive correlations too low to be meaningful with the students' percent of time in general education. At the construct level, students who received more instruction in the general education setting tended to score slightly higher in the area of Interacting with Others, yet the low correlations suggest no meaningful relation. The large sample size could have caused the correlations to show

significance even when a meaningful correlation did not exist.

The results of this analysis show the TAGG assesses behaviors different than behaviors associated with the percent of time students receive instruction in the general education classroom.

The only construct to yield a small significant relation to educational setting was Interacting with Others. Interacting with others requires students to successfully intermingle with others in a variety of settings. Students who can get along with others will be more likely to be successful in group work, requesting assistance from teachers and peers, and spend less time out of the classroom due to disciplinary issues. A teacher may be more likely to give assistance, extra-time, and allowances to a student who is amicable than to a student who is defiant and does not interact well with others, and this could be reflected in the student's educational placement. Including students in the general education setting may be important to meet college entry requirements, but the curriculum may not include systematic teaching of non-academic skills needed for post-school employment and education.

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Table 1

Professional Demographics for Gender, Disability Category, GPA, and Percent of Time in General Education Studies

Characteristic	n	%
Gender		
Male	5	6.9
Female	67	93.1
Race or Ethnicity		
White or Caucasian	59	81.9
Black or African American	10	13.9
Other Hispanic, Latino, or Spanish	3	4.2
American Indian	4	5.6
Mexican, Mexican American, Chicano	1	1.4
Highest Level of Education		
Bachelor's degree	9	12.5
Some Master's Courses	15	24.2
Master's Degree	25	34.7
Ed.S.	6	8.3
Some Ph.D. or Ed.D. Courses	4	5.6
Missing Data	3	4.2
Position		
Job Coach	2	2.8
Rehabilitation Counselor	1	1.4
Special Education Director	4	5.6
Special Education Teacher	53	73.6
Other	16	22.2

Note. When totals are less than 72, data are missing. For this sample, $M = 48.2$ ($SD = 10.1$) for age and $M = 16.1$ ($SD = 10.9$) for number of years teaching students with disabilities.

Table 2

Family Demographics for Gender and Disability Category Studies

	Entire Sample		MANOVA study	
Characteristic	n	%	n	%
Relationship to Student				
Mother	393	79.1	369	80.2
Father	56	11.3	50	10.9
Grandmother	4	4.6	20	4.3
Legal Male Guardian	4	.8	3	.7
Legal Female Guardian	5	1.0	4	.2
Grandfather	2	.4	1	.2
Brother	1	.2	1	.2
Sister	2	.4	2	.4
Aunt	3	.6	3	.7
Other	8	1.6	7	1.5
Race or Ethnicity				
Caucasian	368	63.6	344	64.2
African American	50	8.6	46	8.6
American Indian	42	7.3	38	7.1
Other Hispanic, Latino, or Spanish	32	5.5	29	5.4
Mexican, Mexican American, Chicano	19	3.3	17	3.2
Cuban	2	.3	1	.2
Other	10	1.7	10	1.9
Highest Level of Education				
Less than high school	60	12.4	55	12.2
High school diploma or GED	204	42.1	191	42.5
Bachelor's Degree	61	12.6	53	11.8
Associate's Degree	75	15.5	72	16.0
Vocational or technical Certification	58	12.0	54	12.0
Master's Degree	20	4.1	18	4.0
Doctorate or other professional degree	6	1.2	6	1.3

Note. For entire sample, when totals are less than 497, data are missing. For this sample, $M = 43.88$ ($SD = 9.974$) for age. For MANOVA sample, when totals are less than 460, data are missing. For this sample, $M = 43.65$ ($SD = 9.858$) for age.

Table 3

Student Demographics for Gender and Disability Category Studies

	Entire Sample		MANOVA study	
Characteristic	n	%	n	%
Gender				
Male	380	55.0	360	55.7
Female	305	44.1	283	43.8
Race or Ethnicity				
Caucasian	475	68.7	447	69.2
African American	100	14.5	96	14.9
American Indian	60	8.7	55	8.5
Other Hispanic, Latino, or Spanish	31	4.5	48	7.4
Mexican, Mexican American, Chicano	31	4.5	25	3.9
Other	7	1.0	6	.9
Grade				
9th	114	16.5	106	16.4
10th	146	21.1	137	21.2
11th	182	26.3	173	26.8
12th	242	35.0	227	35.1
Primary Disability				
Specific Learning Disability	411	59.5	411	63.6
Intellectual Disability	86	12.4	86	13.3
Other Health Impairment	87	12.6	87	13.5
Emotional Disturbance	40	5.8	40	6.2
Autism	22	3.2	22	3.4
Multiple Disabilities	11	1.6	--	--
Orthopedic Impairment	5	.7	--	--
Other	5	.7	--	--
Speech or Language Impairment	5	.7	--	--
Traumatic Brain Injury	4	.6	--	--
Hearing Impairment	6	.9	--	--
Deaf-Blindness	1	.1	--	--
Receives Free or Reduced Lunch				
Yes	380	55.0	355	55.0
No	248	35.9	233	36.1
Missing	63	9.1	58	9.0

Note. For entire sample, when totals are less than 691, data are missing. For this sample, $M = 16.72$ ($SD = 2.351$) for age. For MANOVA sample, when totals are less than 646, data are missing. For this sample, $M = 16.69$ ($SD = 2.371$) for age.

Table 4

Descriptive Statistics and Univariate Follow-Up Tests for Gender and TAGG-P Scores

	Descriptives		Univariate tests	
Construct	Male	Female	*F*	*p*
Strengths and Limitations	-.03 (.90)	.03 (.92)	.784	.376
Disability Awareness	-.01 (.83)	.02 (.92)	.199	.656
Persistence	-.05 (.92)	.06 (.99)	2.014	.156
Interacting with Others	-.05 (.89)	.05 (.82)	2.079	.150
Goal Setting and Attainment	-.01 (.94)	.04 (.98)	.472	.492
Employment	.05 (.91)	-.04 (1.11)	1.386	.239
Student Involvement in the IEP	-.01 (.94)	.03 (.90)	.326	.568
Support Community	-.20 (.98)	-.13 (.97)	.824	.364

Table 5

Descriptive Statistics and Univariate Follow-Up Tests for Gender and TAGG-F Scores

	Descriptives		Univariate tests	
Construct	Male	Female	*F*	*p*
Strengths and Limitations	-.08 (.92)	.08 (.86)	4.150	.042
Disability Awareness	-.09 (.84)	.13 (.93)	6.985	.008
Persistence	-.07 (.98)	.10 (.90)	4.080	.044
Interacting with Others	-.03 (.75)	.03 (.70)	.947	.331
Goal Setting and Attainment	-.03 (1.68)	.28 (2.35)	1.755	.186
Employment	.16 (1.28)	-.05 (1.15)	3.592	.059
Student Involvement in the IEP	-.03 (.90)	.06 (.93)	1.214	.271
Support Community	-.03 (.77)	.06 (.80)	1.729	.189

Table 6

Descriptive Statistics and Univariate Follow-Up Tests for Gender and TAGG-S Scores

	Descriptives		Univariate tests	
Construct	Male	Female	*F*	*p*
Strengths and Limitations and Support Community	.03 (.80)	-.02 (.76)	.496	.482
Disability Awareness	.01 (.80)	-.01 (.76)	.242	.623
Persistence	.06 (.88)	-.05 (.88)	2.296	.130
Interacting with Others	.03 (.68)	-.01 (.67)	.553	.457
Goal Setting and Attainment	.09 (1.06)	-.04 (.82)	2.916	.088
Employment	.07 (.86)	-.02 (.78)	2.034	.154
Student Involvement in the IEP	-.08 (89)	.09 (.86)	5.692	.017

Table 7

Descriptive Statistics for TAGG-P Scores for Included Cases by Disability Category

Construct	Autism	Emotional disturbance	Intellectual disability	Other health impairment	Specific learning disability
Strengths and Limitations	-.51 (1.0)	-.34 (.93)	-.19 (.86)	.11 (.97)	.11 (.86)
Disability Awareness	-.47 (.78)	-.40 (.99)	-.17 (.86)	.08 (.83)	.12 (.82)
Persistence	-.30 (1.13)	-.60 (1.09)	-.28 (.89)	.03 (.94)	.13 (.93)
Interacting with Others	-.48 (.62)	-.69 (.94)	-.00 (.70)	-.15 (.79)	.10 (.87)
Goal Setting and Attainment	-.42 (.85)	-.50 (1.05)	-.40 (.89)	.14 (.85)	.18 (.93)
Employment	-.43 (1.00)	-.38 (1.10)	-.07 (.87)	-.06 (.94)	.14 (1.03)
Student Involvement in the IEP	-.54 (1.04)	-.23 (1.09)	-.16 (.95)	.07 (.85)	.10 (.89)
Support Community	-.48 (.92)	-.69 (.94)	-.10 (1.03)	-.23 (.98)	-.10 (.95)

Table 8

Descriptive Statistics for TAGG-F Scores for Included Cases by Disability Category

Construct	Autism	Emotional disturbance	Intellectual disability	Other health impairment	Specific learning disability
Strengths and Limitations	-.69 (.77)	-.35 (.81)	.03 (.90)	.00 (.88)	.13 (.85)
Disability Awareness	-.42 (.76)	-.18 (.77)	-.08 (.85)	.10 (.91)	.09 (.90)
Persistence	-.41 (.94)	-.51 (.68)	-.14 (.82)	-.20 (.97)	.20 (.97)
Interacting with Others	-.37 (.79)	-.40 (.70)	-.03 (.64)	.09 (.76)	.06 (.72)
Goal Setting and Attainment	-.81 (.84)	-.63 (.88)	.10 (3.17)	-.06 (.89)	.41 (2.05)
Employment	-.50 (.92)	.19 (2.54)	-.23 (.79)	.03 (.75)	.21 (1.21)
Student Involvement in the IEP	-.80 (.87)	-.22 (.93)	-.08 (.85)	-.10 (.88)	.16 (.89)
Support Community	-.53 (.82)	-.15 (.76)	-.19 (.82)	-.09 (.70)	.17 (.74)

Table 9

Descriptive Statistics for TAGG-S Scores for Included Cases by Disability Category

Construct	Autism	Emotional disturbance	Intellectual disability	Other health impairment	Specific learning disability
Strengths and Limitations and Support Community	-.39 (.80)	-.20 (.72)	-.20 (.82)	.22 (.75)	.08 (.74)
Disability Awareness	-.10 (.69)	-.18 (.71)	.05 (.71)	.03 (.86)	.03 (.77)
Persistence	-.18 (.84)	-.18 (1.01)	-.17 (.94)	.09 (.66)	.10 (.88)
Interacting with Others	-.14 (.69)	-.25 (.60)	-.13 (.68)	.14 (.64)	.04 (.67)
Goal Setting and Attainment	-.28 (1.07)	-.30 (.79)	-.16 (.94)	.14 (.82)	.11 (.99)
Employment	-.46 (.89)	-.17 (.76)	-.26 (.73)	.32 (1.15)	.07 (.74)
Student Involvement in the IEP	-.65 (.83)	-.38 (.86)	.15 (.81)	.00 (.10)	.03 (.84)

Table 10

Descriptive Statistics for TAGG-P Scores for Excluded Cases by Disability Category

Construct	Deaf-Blindness	Hearing impairment	Multiple Disabilities	Other	Orthopedic Impairment	Speech language impairment	Traumatic Brain injury	Visual Impairment
Strengths and Limitations	.64	.59 (.65)	-1.24 (.81)	-.72 (.77)	-.42 (.44)	-.01 (.54)	-.35 (.69)	-.08
Disability Awareness	-.14	.94 (.59)	-1.49 (.53)	-.56 (.43)	-.19 (.86)	-.42 (.67)	-.20 (.58)	.90
Persistence	.69	.51 (1.07)	-.17 (.64)	-.70 (1.07)	-.69 (.40)	-.12 (.61)	-.03 (.33)	.90
Interacting with Others	-.28	.12 (.79)	.62 (.79)	-.69 (.60)	-.52 (.46)	.39 (.59)	.24 (.93)	.41
Goal Setting and Attainment	.41	.83 (.91)	-.89 (.78)	-1.30 (.49)	-.50 (.76)	-.11 (.58)	-.20 (.98)	.97
Employment	-.03	-.05 (.44)	-.03 (.82)	-.27 (1.00)	-1.30 (.68)	-.24 (.40)	-.16 (1.25)	1.25
Student Involvement in the IEP	.17	-.06 (.89)	-.49 (.74)	-.62 (.58)	-.66 (.38)	-.22 (.51)	.63 (1.49)	2.24
Support Community	-1.61	.27 (1.18)	.05 (.84)	-.84 (.70)	-.98 (.41)	-.69 (.85)	-.09 (1.44)	1.27

Note. Categories Deaf-blindness and Visual Impairment N = 1

Table 11

Descriptive Statistics for TAGG-F Scores for Excluded Cases by Disability Category

Construct	Deaf-Blindness	Hearing impairment	Multiple Disabilities	Other	Orthopedic Impairment	Speech language impairment	Traumatic Brain injury	Visual Impairment
Strengths and Limitations	-.78	.51 (.77)	-1.11 (.82)	-1.39 (.37)	-.71 (.94)	-.14 (.59)	.33 (.91)	.51
Disability Awareness	1.08	.48 (.71)	-.80 (.82)	-.14 (1.11)	-.53 (.37)	.16 (.53)	.08 (.79)	.53
Persistence	.69	.14 (1.09)	-.66 (.80)	-.46 (1.00)	-.79 (1.31)	.08 (.88)	.55 (.88)	.69
Interacting with Others	1.13	.21 (.64)	-.41 (.55)	-.00 (.09)	-.87 (1.04)	.51 (.57)	.42 (.49)	.62
Goal Setting and Attainment	1.18	.13 (.84)	-1.19 (.70)	.15 (.52)	-.90 (.92)	-.08 (.92)	.57 (.91)	.85
Employment	.66	-.50 (.50)	-.34 (.90)	-.39 (1.45)	-1.26 (.85)	.04 (1.12)	.04 (.68)	-.34
Student Involvement in the IEP	1.34	.33 (.72)	-1.04 (.75)	-.26 (.40)	-.21 (.55)	.12 (.95)	.14 (.90)	1.13
Support Community	1.48	.21 (.91)	-.75 (.48)	-.82 (1.05)	-.56 (.53)	.02 (.49)	.05 (.86)	.95

Note. Categories Deaf-blindness and Visual Impairment N = 1

Table 12

Descriptive Statistics for TAGG-S Scores for Excluded Cases by Disability Category

Construct	Deaf-Blindness	Hearing impairment	Multiple Disabilities	Other	Orthopedic Impairment	Speech language impairment	Traumatic Brain injury	Visual Impairment
Strengths and Limitations	1.45	-.61 (1.12)	-.36 (1.10)	-.89 (.55)	.27 (.78)	-.08 (.54)	-.42 (.65)	-1.14
Disability Awareness	1.70	.37 (.91)	-.71 (.76)	-.48 (.70)	-.73 (.44)	-.08 (.74)	-.09 (.74)	-1.27
Persistence	.55	-.62 (1.12)	-.58 (1.04)	-.48 (.70)	-.73 (.44)	-.08 (.74)	-.09 (.74)	-1.27
Interacting with Others	.97	-.49 (.86)	.47 (.54)	-.48 (.22)	.06 (.95)	.29 (.18)	-.52 (.99)	-.38
Goal Setting and Attainment	1.54	.24 (.54)	-.59 (1.20)	-.45 (.30)	.13 (1.24)	.28 (.91)	.12 (1.08)	-.99
Employment	.25	-.17 (.98)	.27 (.20)	-.78 (1.34)	-.21 (.63)	.21 (.40)	.38 (.14)	.25
Student Involvement in the IEP	1.47	.61 (.91)	-.42 (.87)	-.15 (.39)	.28 (1.46)	.38 (.87)	.03 (.59)	-.60

Note. Categories Deaf-blindness and Visual Impairment N = 1

Table 13

Mean Differences Between Scores for Students Having Different Disabilities for the Strengths and Limitations Construct on the TAGG-P

	Autism		ED		ID		OHI	
	Diff.	p	Diff.	p	Diff.	p	Diff.	p
ED	-.16	1.00	--	--				
ID	-.32	1.00	-.15	1.00	--	--		
OHI	-.62	.03*	-.46	.08	-.30	.27	--	--
SLD	-.62	.02*	-.45	.02*	-.30	.05	.01	1.00

Note: Difference is calculated by subtracting the mean scaled score of the students with disability categories in the row from the mean scaled score of the students with disability categories in the column. * represents $p < .05$. ED = Emotional disturbance, ID = Intellectual disability, OHI = Other health impairment, and SLD = Specific learning disability.

Table 14

Mean Differences Between Scores for Students Having Different Disabilities for the Disability Awareness Construct on the TAGG-P

	Autism		ED		ID		OHI	
	Diff.	p	Diff.	p	Diff.	P	Diff.	p
ED	-.08	1.00	--	--				
ID	-.31	1.00	-.23	1.00	--	--		
OHI	-.55	.06	-.48	.04*	-.24	.61	--	--
SLD	-.60	.01*	-.52	.00**	-.29	.04*	-.04	1.00

Note: Difference is calculated by subtracting the mean scaled score of the students with disability categories in the row from the mean scaled score of the students with disability categories in the column. * represents $p < .05$. ** represents $p < .01$. ED = Emotional disturbance, ID = Intellectual disability, OHI = Other health impairment, and SLD = Specific learning disability.

Table 15

Mean Differences Between Scores for Students Having Different Disabilities for the Persistence Construct on the TAGG-P

	Autism		ED		ID		OHI	
	Diff.	p	Diff.	p	Diff.	p	Diff.	p
ED	.30	1.00	--	--				
ID	-.02	1.00	-.32	.78	--	--		
OHI	-.33	1.00	-.63	.01*	-.31	.35	--	--
SLD	-.43	.38	-.73	.00**	-.41	.00**	-.10	1.00

Note: Difference is calculated by subtracting the mean scaled score of the students with disability categories in the row from the mean scaled score of the students with disability categories in the column. * represents $p < .05$. ** represents $p < .01$. ED = Emotional disturbance, ID = Intellectual disability, OHI = Other health impairment, and SLD = Specific learning disability.

Table 16

Mean Differences Between Scores for Students Having Different Disabilities for the Interacting with Others Construct on the TAGG-P

	Autism		ED		ID		OHI	
	Diff.	p	Diff.	p	Diff.	p	Diff.	p
ED	.22	1.00	--	--				
ID	-.47	.19	-.69	.00**	--	--		
OHI	-.33	1.00	-.54	.01*	.15	1.00	--	--
SLD	-.58	.02*	-.79	.00**	-.11	1.00	-.25	.13

Note: Difference is calculated by subtracting the mean scaled score of the students with disability categories in the row from the mean scaled score of the students with disability categories in the column. * represents $p < .05$. ** represents $p < .01$. ED = Emotional disturbance, ID = Intellectual disability, OHI = Other health impairment, and SLD = Specific learning disability.

Table 17

Mean Differences Between Scores for Students Having Different Disabilities for the Goal Setting and Attainment Construct on the TAGG-P

	Autism		ED		ID		OHI	
	Diff.	p	Diff.	p	Diff.	p	Diff.	p
ED	.07	1.00	--	--				
ID	-.02	1.00	-.10	1.00	--	--		
OHI	-.56	.11	-.64	.00**	-.54	.00**	--	--
SLD	-.60	.03*	-.68	.00**	-.58	.00**	-.04	1.00

Note: Difference is calculated by subtracting the mean scaled score of the students with disability categories in the row from the mean scaled score of the students with disability categories in the column. * represents $p < .05$. ** represents $p < .01$. ED = Emotional disturbance, ID = Intellectual disability, OHI = Other health impairment, and SLD = Specific learning disability.

Table 18

Mean Differences Between Scores for Students Having Different Disabilities for the Employment Construct on the TAGG-P

	Autism		ED		ID		OHI	
	Diff.	p	Diff.	p	Diff.	p	Diff.	p
ED	-.05	1.00	--	--				
ID	-.35	1.00	-.30	1.00	--	--		
OHI	-.36	1.00	-.31	1.00	-.01	1.00	--	--
SLD	-.56	.11	-.51	.02*	-.21	.85	-.20	.99

Note: Difference is calculated by subtracting the mean scaled score of the students with disability categories in the row from the mean scaled score of the students with disability categories in the column. * represents $p < .05$. ED = Emotional disturbance, ID = Intellectual disability, OHI = Other health impairment, and SLD = Specific learning disability.

Table 19

Mean Differences Between Scores for Students Having Different Disabilities for the Student Involvement in the IEP Construct on the TAGG-P

	Autism		ED		ID		OHI	
	Diff.	p	Diff.	p	Diff.	p	Diff.	p
ED	-.31	1.00	--	--				
ID	-.38	.83	-.07	1.00	--	--		
OHI	-.62	.05	-.31	.81	-.24	.93	--	--
SLD	-.64	.01*	-.33	.31	-.26	.18	-.02	1.00

Note: Difference is calculated by subtracting the mean scaled score of the students with disability categories in the row from the mean scaled score of the students with disability categories in the column. * represents $p < .05$. ED = Emotional disturbance, ID = Intellectual disability, OHI = Other health impairment, and SLD = Specific learning disability.

Table 20

Mean Differences Between Scores for Students Having Different Disabilities for the Support Community Construct on the TAGG-P

	Autism		ED		ID		OHI	
	Diff.	p	Diff.	p	Diff.	p	Diff.	p
ED	.20	1.00	--	--				
ID	-.38	.99	-.59	.02*	--	--		
OHI	-.25	1.00	-.45	.16	.13	1.00	--	--
SLD	-.39	.67	-.59	.00**	-.01	1.00	-.14	1.00

Note: Difference is calculated by subtracting the mean scaled score of the students with disability categories in the row from the mean scaled score of the students with disability categories in the column. * represents $p < .05$. ** represents $p < .01$. ED = Emotional disturbance, ID = Intellectual disability, OHI = Other health impairment, and SLD = Specific learning disability.

Table 21

Mean Differences Between Scores for Students Having Different Disabilities for the Strengths and Limitations Construct on the TAGG-F

	Autism		ED		ID		OHI	
	Diff.	P	Diff.	p	Diff.	p	Diff.	p
ED	-.34	1.00	--	--				
ID	-.72	.01*	-.38	.56	--	--		
OHI	-.69	.02*	-.35	.80	.02	1.00	--	--
SLD	-.82	.00**	-.48	.06	-.10	1.00	-.13	1.00

Note: Difference is calculated by subtracting the mean scaled score of the students with disability categories in the row from the mean scaled score of the students with disability categories in the column. * represents $p < .05$. ** represents $p < .01$. ED = Emotional disturbance, ID = Intellectual disability, OHI = Other health impairment, and SLD = Specific learning disability.

Table 22

Mean Differences Between Scores for Students Having Different Disabilities for the Disability Awareness Construct on the TAGG-F

	Autism		ED		ID		OHI	
	Diff.	p	Diff.	p	Diff.	P	Diff.	p
ED	-.23	1.00	--	--				
ID	-.34	1.00	-.11	1.00	--	--		
OHI	-.51	.24	-.28	1.00	-.18	1.00	--	--
SLD	-.51	.12	-.27	1.00	-.17	1.00	.01	1.00

Note: Difference is calculated by subtracting the mean scaled score of the students with disability categories in the row from the mean scaled score of the students with disability categories in the column. ED = Emotional disturbance, ID = Intellectual disability, OHI = Other health impairment, and SLD = Specific learning disability.

Table 23

Mean Differences Between Scores for Students Having Different Disabilities for the Persistence Construct on the TAGG-F

	Autism		ED		ID		OHI	
	Diff.	p	Diff.	p	Diff.	p	Diff.	p
ED	.10	1.00	--	--				
ID	-.27	1.00	-.36	.86	--	--		
OHI	-.20	1.00	-.30	1.00	.06	1.00	--	--
SLD	-.61	.03*	-.71	.00**	-.35	.07	-.41	.03*

Note: Difference is calculated by subtracting the mean scaled score of the students with disability categories in the row from the mean scaled score of the students with disability categories in the column. * represents $p < .05$. ** represents $p < .01$. ED = Emotional disturbance, ID = Intellectual disability, OHI = Other health impairment, and SLD = Specific learning disability.

Table 24

Mean Differences Between Scores for Students Having Different Disabilities for the Interacting with Others Construct on the TAGG-F

	Autism		ED		ID		OHI	
	Diff.	p	Diff.	p	Diff.	p	Diff.	P
ED	.03	1.00	--	--				
ID	-.34	.60	-.37	.24	--	--		
OHI	-.45	.13	-.49	.04*	-.12	1.00	--	--
SLD	-.43	.08	-.47	.01*	-.09	1.00	.02	1.00

Note: Difference is calculated by subtracting the mean scaled score of the students with disability categories in the row from the mean scaled score of the students with disability categories in the column. * represents $p < .05$. ** represents $p < .01$. ED = Emotional disturbance, ID = Intellectual disability, OHI = Other health impairment, and SLD = Specific learning disability.

Table 25

Mean Differences Between Scores for Students Having Different Disabilities for the Goal Setting and Attainment Construct on the TAGG-F

	Autism		ED		ID		OHI	
	Diff.	p	Diff.	p	Diff.	p	Diff.	p
ED	-.18	1.00	--	--				
ID	-.90	.82	-.72	1.00	--	--		
OHI	-.75	1.00	-.57	1.00	.15	1.00	--	--
SLD	-1.21	.09	-1.03	.13	-.31	1.00	-.46	1.00

Note: Difference is calculated by subtracting the mean scaled score of the students with disability categories in the row from the mean scaled score of the students with disability categories in the column. ED = Emotional disturbance, ID = Intellectual disability, OHI = Other health impairment, and SLD = Specific learning disability.

Table 26

Mean Differences Between Scores for Students Having Different Disabilities for the Employment Construct on the TAGG-F

	Autism		ED		ID		OHI	
	Diff.	p	Diff.	p	Diff.	p	Diff.	p
ED	-.68	.56	--	--				
ID	-.27	1.00	.41	1.00	--	--		
OHI	-.53	.95	.16	1.00	-.26	1.00	--	--
SLD	-.71	.11	-.02	1.00	-.44	.11	-.18	1.00

Note: Difference is calculated by subtracting the mean scaled score of the students with disability categories in the row from the mean scaled score of the students with disability categories in the column. ED = Emotional disturbance, ID = Intellectual disability, OHI = Other health impairment, and SLD = Specific learning disability.

Table 27

Mean Differences Between Scores for Students Having Different Disabilities for the Student Involvement in the IEP Construct on the TAGG-F

	Autism		ED		ID		OHI	
	Diff.	p	Diff.	p	Diff.	p	Diff.	p
ED	-.58	.25	--	--				
ID	-.72	.01*	-.14	1.00	--	--		
OHI	-.70	.02*	-.12	1.00	.02	1.00	--	--
SLD	-.97	.00**	-.39	.31	-.25	.48	-.27	.42

Note: Difference is calculated by subtracting the mean scaled score of the students with disability categories in the row from the mean scaled score of the students with disability categories in the column. * represents $p < .05$. ** represents $p < .01$. ED = Emotional disturbance, ID = Intellectual disability, OHI = Other health impairment, and SLD = Specific learning disability.

Table 28

Mean Differences Between Scores for Students Having Different Disabilities for the Support Community Construct on the TAGG-F

	Autism		ED		ID		OHI	
	Diff.	P	Diff.	p	Diff.	p	Diff.	p
ED	-.38	.84	--	--				
ID	-.34	.75	-.04	1.00	--	--		
OHI	-.45	.21	-.07	1.00	-.11	1.00	--	--
SLD	-.71	.00**	-.33	.33	-.37	.01*	-.26	.21

Note: Difference is calculated by subtracting the mean scaled score of the students with disability categories in the row from the mean scaled score of the students with disability categories in the column. * represents $p < .05$. ** represents $p < .01$. ED = Emotional disturbance, ID = Intellectual disability, OHI = Other health impairment, and SLD = Specific learning disability.

Table 29

Mean Differences Between Scores for Students Having Different Disabilities for the Strengths and Limitations and Support Community Construct on the TAGG-S

	Autism		ED		ID		OHI	
	Diff.	P	Diff.	p	Diff.	p	Diff.	p
ED	-.19	1.00	--	--				
ID	-.19	1.00	.00	1.00	--	--		
OHI	-.61	.01*	-.42	.04*	-.42	.00**	--	--
SLD	-.47	.05	-.27	.30	-.28	.03*	.14	1.00

Note: Difference is calculated by subtracting the mean scaled score of the students with disability categories in the row from the mean scaled score of the students with disability categories in the column. * represents $p < .05$. ** represents $p < .01$. ED = Emotional disturbance, ID = Intellectual disability, OHI = Other health impairment, and SLD = Specific learning disability.

Table 30

Mean Differences Between Scores for Students Having Different Disabilities for the Disability Awareness Construct on the TAGG-S

	Autism		ED		ID		OHI	
	Diff.	p	Diff.	p	Diff.	P	Diff.	p
ED	.08	1.00	--	--				
ID	-.15	1.00	-.23	1.00	--	--		
OHI	-.13	1.00	-.21	1.00	.02	1.00	--	--
SLD	-.13	1.00	-.21	1.00	.02	1.00	.00	1.00

Note: Difference is calculated by subtracting the mean scaled score of the students with disability categories in the row from the mean scaled score of the students with disability categories in the column. ED = Emotional disturbance, ID = Intellectual disability, OHI = Other health impairment, and SLD = Specific learning disability.

Table 31

Mean Differences Between Scores for Students Having Different Disabilities for the Persistence Construct on the TAGG-S

	Autism		ED		ID		OHI	
	Diff.	p	Diff.	p	Diff.	p	Diff.	p
ED	.00	1.00	--	--				
ID	-.01	1.00	-.01	1.00	--	--		
OHI	-.28	1.00	-.28	1.00	-.27	.49	--	--
SLD	-.28	1.00	-.28	.54	-.27	.11	.00	1.00

Note: Difference is calculated by subtracting the mean scaled score of the students with disability categories in the row from the mean scaled score of the students with disability categories in the column. ED = Emotional disturbance, ID = Intellectual disability, OHI = Other health impairment, and SLD = Specific learning disability.

Table 32

Mean Differences Between Scores for Students Having Different Disabilities for the Interacting with Others Construct on the TAGG-S

	Autism		ED		ID		OHI	
	Diff.	p	Diff.	p	Diff.	p	Diff.	p
ED	.11	1.00	--	--				
ID	-.01	1.00	-.12	1.00	--	--		
OHI	-.28	.71	-.40	.02*	-.28	.08	--	--
SLD	-.18	1.00	-.30	.08	-.17	.33	.10	1.00

Note: Difference is calculated by subtracting the mean scaled score of the students with disability categories in the row from the mean scaled score of the students with disability categories in the column. * represents $p < .05$. ED = Emotional disturbance, ID = Intellectual disability, OHI = Other health impairment, and SLD = Specific learning disability.

Table 33

Mean Differences Between Scores for Students Having Different Disabilities for the Goal Setting and Attainment Construct on the TAGG-S

	Autism		ED		ID		OHI	
	Diff.	p	Diff.	p	Diff.	p	Diff.	p
ED	.03	1.00	--	--				
ID	-.12	1.00	-.14	1.00	--	--		
OHI	-.42	.68	-.44	.16	-.30	.44	--	--
SLD	-.39	.64	-.41	.10	-.27	.22	.03	1.00

Note: Difference is calculated by subtracting the mean scaled score of the students with disability categories in the row from the mean scaled score of the students with disability categories in the column. ED = Emotional disturbance, ID = Intellectual disability, OHI = Other health impairment, and SLD = Specific learning disability.

Table 34

Mean Differences Between Scores for Students Having Different Disabilities for the Employment Construct on the TAGG-S

	Autism		ED		ID		OHI	
	Diff.	p	Diff.	p	Diff.	p	Diff.	p
ED	-.28	1.00	--	--				
ID	-.20	1.00	.08	1.00	--	--		
OHI	-.78	.00**	-.50	.02*	-.58	.00**	--	--
SLD	-.52	.03*	-.24	.76	-.33	.01*	.25	.09

Note: Difference is calculated by subtracting the mean scaled score of the students with disability categories in the row from the mean scaled score of the students with disability categories in the column. * represents $p < .05$. ** represents $p < .01$. ED = Emotional disturbance, ID = Intellectual disability, OHI = Other health impairment, and SLD = Specific learning disability.

Table 35

Mean Differences Between Scores for Students Having Different Disabilities for the Student Involvement in the IEP Construct on the TAGG-S

	Autism		ED		ID		OHI	
	Diff.	p	Diff.	p	Diff.	p	Diff.	p
ED	-.27	1.00	--	--				
ID	-.80	.00**	-.53	.02*	--	--		
OHI	-.65	.02*	-.38	.23	.14	1.00	--	--
SLD	-.68	.00**	-.41	.05	.11	1.00	-.03	1.00

Note: Difference is calculated by subtracting the mean scaled score of the students with disability categories in the row from the mean scaled score of the students with disability categories in the column. * represents $p < .05$. ** represents $p < .01$. ED = Emotional disturbance, ID = Intellectual disability, OHI = Other health impairment, and SLD = Specific learning disability.

Table 36

Family Member Demographics for GPA and Percent of Time in General Education Studies

Characteristic	n	%
Relationship to Student		
Mother	394	79.3
Father	56	11.3
Grandmother	23	4.6
Legal Male Guardian	4	0.8
Legal Female Guardian	5	1.0
Grandfather	2	0.4
Brother	1	0.2
Sister	2	0.4
Aunt	3	0.6
Other	8	1.6
Race or Ethnicity		
Caucasian	368	74.0
African American	50	10.1
American Indian	42	8.5
Other Hispanic, Latino, or Spanish	33	6.6
Mexican, Mexican American, Chicano	19	3.8
Cuban	2	0.4
Other	11	2.2
Number who chose 2 ethnicities	25	5.0
Number who chose 3 ethnicities	4	0.8
Number who chose 4 ethnicities	1	0.2
Number who chose none	90	18.1
Highest Level of Education		
Less than high school	60	12.1
High school diploma or GED	204	41.0
Vocational or technical Certification	58	11.7
Associate's Degree	75	15.1
Bachelor's Degree	61	12.3
Master's Degree	20	4.0
Doctorate or other professional degree	6	1.2

Note. When totals are less than 497, data are missing. For this sample, $M = 43.8$ ($SD = 9.89$) for age.

Table 37

Student Demographics for GPA and Percent of Time in General Education Studies

Characteristic	n	%
Gender		
Male	380	55.0
Female	305	44.1
Race or Ethnicity		
Caucasian	475	68.7
African American	80	11.6
American Indian	60	8.7
Other Hispanic, Latino, or Spanish	50	7.2
Mexican, Mexican American, Chicano	31	4.5
Other	10	1.4
Number who chose 2 ethnicities	35	5.1
Number who chose 3 ethnicities	3	0.4
Number who chose none	6	0.9
Grade		
9^{th}	114	16.5
10^{th}	146	21.1
11^{th}	182	26.3
12^{th}	242	35.0
Primary Disability		
Specific Learning Disability	429	62.1
Intellectual Disability	86	12.4
Other Health Impairment	87	12.6
Emotional Disturbance	40	5.8
Autism	22	3.2
Multiple Disabilities	11	1.6
Orthopedic Impairment	5	0.7
Other	5	0.7
Speech or Language Impairment	5	0.7
Traumatic Brain Injury	4	0.6
Hearing Impairment	6	0.9
Deaf-Blindness	1	0.1
Receives Free or Reduced Lunch		
Yes	380	55.0
No	248	35.9
Missing	63	9.1

Note. When totals are less than 691, data are missing. Six participants did not complete demographic forms. For this sample, $M = 16.77$ ($SD = 2.38$) for age.

Table 38

Correlations Between TAGG Scores and Student GPA

Construct	TAGG-P		TAGG-F		TAGG-S	
	r	R^2	*r*	R^2	*r*	R^2
Strengths and Limitations	.018	.000	-.096*	.008	-.082*	.007
Disability Awareness	.041	.002	-.123**	.015	-.064	.004
Persistence	.103**	.011	-.029	.001	.030	.001
Proactive Involvement	.112**	.013	.059	.003	-.010	.000
Goal Setting and Attainment	.068	.005	-.111*	.012	.014	.000
Employment	.072	.005	-.054	.003	.018	.000
Involvement in the IEP	-.016	.000	-.102*	.010	-.091*	.008
Support Community	.080*	.006	-.079	.006	-.082*	.007
Total TAGG Score	.076	.006	-.101*	.010	-.045	.002

Note. ** Correlation is significant at the .01 level (2-tailed). * Correlation is significant at the .05 level (2-tailed).

Table 39

Correlations for Percent of Time in General Education and TAGG Scores

Construct	TAGG-P		TAGG-F		TAGG-S	
	r	R^2	*r*	R^2	*r*	R^2
Strengths and Limitations	.028	.001	.003	.000	.118**	.014
Disability Awareness	-.024	.001	-.005	.000	-.075	.006
Persistence	.113**	.013	.063	.004	.069	.005
Interacting with Others	.232**	.054	.176**	.030	.150**	.023
Goal Setting and Attainment	.094*	.009	.088	.008	.076	.006
Employment	.052	.003	.087	.008	.074	.005
Involvement in the IEP	.110**	.012	.091	.008	.035	.001
Support Community	.034	.001	.115*	.013	.118**	.014
Total TAGG Score	.102**	.010	.096*	.009	.091*	.008

Note. ** Correlation is significant at the .01 level (2-tailed). * Correlation is significant at the .05 level (2-tailed).