VideoAssessmentTools

IMPACT

Language

Rating Scale

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About the Author

Adriana Lavi, PhD, CCC-SLP is a licensed speech-language pathologist and a pioneer in the development of speech and language video-based assessment tools. She is the creator and author of the Clinical Assessment of Pragmatics (CAPs), as well as Video Assessment Tools, an online assessment platform that features the Articulation and Phonology Video Assessment Tool, the IMPACT Social Communication Rating Scale, the IMPACT Articulation and Phonology Rating Scale, etc. Additionally, Dr. Lavi is the creator of the Video Learning Squad, an online therapy platform that features the Social Squad and Stutter Squad.

For over a decade, Dr. Lavi owned Go2Consult where she supervised 35+ speech-language pathologists and clinical fellows across Southern California. Dr. Lavi has also served as an Assistant Professor at the Department of Communicative Disorders at Loma Linda University, and is the founder of the Lavi Institute for Research and Professional Development. She earned a master's degree in speech-language pathology from California State University at Sacramento and a PhD degree in Rehabilitation Sciences with an emphasis in speech-language pathology from Loma Linda University. Dr. Lavi was one of three students selected by the Bureau of Educational and Cultural Affairs of the US Department of State from the country of Moldova to study in the US in 2000. She has lived through and understands the culture of poverty. Her professional career has always focused on service delivery for students from low-income backgrounds. Dr. Lavi is the proud mother of four young, highly energetic boys.

Technical Publications Writer

Charlotte Granitto is a licensed speech-language pathologist and technical publications writer. She works as part of the Lavi Institute team and focuses on the research and development of video-based assessments and treatments for individuals with speech and language disorders. Charlotte also has experience working in a clinic, hospital, and school setting as a rehabilitation therapist and speech-language pathologist. She earned a Bachelor of Art's degree in Psychology with a focus in research from Wilfrid Laurier University and earned a Master's degree in Education specializing in speech-language pathology from the State University of New York at Buffalo State.

Consultant and Editor on Neurodiversity Topics

Tiffany Waddington, M.S. CCC-SLP, is a neurodivergent mother of 2 autistic kids. She has a passion for working with high school and transition aged students, with a focus on helping these students become as independent as possible.

During the school year, she works with high school and transition students in the Everett School District. She has worked previously with Aspiring Youth, running D&D games and social groups in multiple cities, as well as providing 1:1 mentoring with a variety of young adults.

Most recently, she has been working on a video series for neurodivergent friendships and is looking forward to running more sustainable groups to help teens and young adults thrive.

Acknowledgements

Sincere appreciation is extended to the families and children who generously offered their time and effort. Additional thanks goes to the expert panel and speech-language pathologists who field-tested the children.

Chapter

1

Overview of the Rating Scale

IMPACT Language Functioning Rating Scale Description

The *IMPACT Language Functioning Rating Scale* is a norm-referenced spoken language comprehension and spoken language rating scale for children and young adults ages 3 through 21 years old. It is composed of 45 test items, and has three separate forms to be completed by clinician, parent(s), and teacher(s). It is an accurate and reliable assessment tool that provides valid results on informal observations of spoken language, language processing and integration, and social interactions in the school and home environment. Normative data of this test is based on a nationally representative sample of 1431 (typically developing) children and young adults in the United States.

The IMPACT Model

The IMPACT model was developed based on current literature and examination of real-world challenges faced by individuals with speech and language impairments such as school demands and social interactions. This model was designed to analyze the real-life authentic observations of teachers, parents, and clinicians. The IMPACT model uses a contextualized, whole language approach to see the impact and the outcome of a speech and/or language impairment on education and social interactions.

IMPACT Language Functioning Rating Scale Areas

The test is composed of five areas: spoken language comprehension, oral expression, language processing and integration, literacy, and social language skills.

Testing Format

The IMPACT Language Functioning Rating Scale is composed of 45 test items. The test uses a series of items that asks the rater to score on a 4-point scale ("never," "sometimes," "often," and "typically"). The

rating scale yields an overall percentile and standard score. While completing this checklist, examinees are able to watch videos that will guide them by providing specific examples of what each question is asking. The videos are there to help examiners along if they have any questions regarding the skill that they are assessing.

Administration Time

Administration time for the rating scale takes approximately 30 to 35 minutes.

IMPACT Language Functioning Rating Scale Uses and Purpose

Clinicians, parents, and teachers can provide valuable information regarding a student's understanding of spoken language, expressive language, language integration, literacy, and social language abilities. This information can help determine what areas the child has deficits in and how deficits in these areas may impact the child in both the classroom and in the home environment. *The IMPACT Language Functioning Rating Scale* should be used to evaluate children or young adults who have a suspected or previous diagnosis of a language disorder. This tool will assist in the identification or continued diagnosis of a spoken language comprehension and/or expressive language disorder. Additionally, this rating scale will help determine if there are any educational or personal impacts. The results of the *IMPACT Language Functioning Rating Scale* provide clinicians information on children and young adult's ability to comprehend spoken language and use spoken language. By utilizing the *IMPACT Language Functioning Rating Scale*, we are able to develop a better understanding as to how a student's language abilities may impact their academic performance, progress in school, and social interactions.

Code of Federal Regulations – Title 34: Education

34 C.F.R. §300.7 Child with a disability. (c) Definitions of disability terms. (11) Speech or language impairment means a communication disorder, such as stuttering, impaired articulation, a language impairment, or a voice impairment, that adversely affects a child's educational performance.

The Individual's with Disabilities Act (IDEA, 2004) states that when assessing a student for a speech or language impairment, we need to determine whether or not the impairment will negatively impact the child's educational performance. In order to determine whether a language impairment exists, we can collect a language sample of the individual, and analyze language abilities and the impact of the impairment on academic success.

Importance of Observations and Rationale for a Rating Scale

When evaluating an individual's language abilities, the evaluation should include systematic observations and a contextualized analysis that involves multiple observations across various

environments and situations (Westby et al., 2003). According to IDEA (2004), such types of informal assessment must be used in conjunction with standardized assessments. Section. 300.532(b), 300.533 (a) (1) (I, ii, iii); 300.535(a)(1) of IDEA states that, "assessors must use a variety of different tools and strategies to gather relevant functional and developmental information about a child, including information provided by the parent, teacher, and information obtained from classroom-based assessments and observation." By using both formal and informal assessments, clinicians are able to capture a larger picture of a student's language abilities. By observing a child's language via informal observation, examinees (i.e., clinician, teacher, and parent) can observe how the child understands language and uses language (e.g., express needs and wants, make requests, converse with peers/friends, etc.), as well as the potential impact a language disorder may have on a child's academic and social life.

When we consider a formal spoken language comprehension and/or spoken language assessment, it may be difficult for clinicians to observe and gauge the impact that these deficits may have on a student's everyday life. Parent and teacher input can be beneficial at this time because it allows for the observations to take place in an authentic everyday setting. Additionally, the examiners are already familiar with the child and may know what to look for which will help create a true representation of the child's language abilities. *The IMPACT Language Functioning Rating Scale* provides us with clinician, parent, and teacher observations and perspectives of a child's understanding and use of language. When given the guidelines of what to look for, parents will be able to provide numerous examples of their child's language abilities and the impact these deficits may have on a child. Difficulties in the various parts of language may not be so easily observed during clinical assessment and observation. Furthermore, it can be important to obtain information on how a child engages with their family, friends, and peers during common tasks in order to obtain ecologically and culturally valid information on how a child functions and communicates on a daily basis (Jackson, Pretti- Frontczak, Harjusola-Webb, Grisham-Brown, & Romani, 2009; Westby, Stevens, Dominguez, & Oetter, 1996).

During assessment and intervention planning, it is important to consider how spoken language comprehension and spoken language abilities may adversely affect educational performance and a child's social interactions. When compared to typically developing peers, children with language impairments are rated by their kindergarten teachers as being significantly less prepared in areas such as literacy, math, pro-social communication, and behavioral competence (Justice, Bowles, Pence Turnbull, & Skibbe, 2009). Previous research has suggested that language disorders can be detrimental to a child's development and children whose language falls behind their peers are at an increased risk of academic failure (Durkin, Conti-Ramsden, & Simkin, 2012; Johnson, Beitchman, & Brownlie, 2010), behavioral and psychiatric problems (Conti-Ramsden, Mok, Pickles, & Durkin, 2013, Snowling & Hulme, 2006), unemployment, economic disadvantage, (Parsons, Schoon, Rush, & Law, 2011), and social impairment (Clegg, Hollis, Mawhood, & Rutter, 2005).

Chapter

2

Theoretical Background of the IMPACT Language Functioning Rating Scale

Spoken language comprehension and oral expression, refers to the understanding and the use of spoken language across various contexts and social situations. Approximately 7% of children have deficits in language comprehension or language use and these difficulties can persist into the school-age years and interfere with communication, academics, and social interactions (Tomblin, Records, Buckwalter, Zhang, Smith, & O'Brien, 1997). Longitudinal studies have revealed that language impairments that persist into school age remain in adolescence (Conti-Ramsden & Durkin 2007) and adulthood (Johnson, Beitchman, & Brownlie, 1999; Clegg, Hollis, Mawhood, & Rutter, 2005), often with accompanying literacy deficits (Clegg, Hollis, Mawhood, & Rutter, 2005, Snowling & Hulme, 2000). Lindsay and Dockrell (2012) conducted a longitudinal study with adolescents who were identified as having specific language impairment (SLI) during the early primary grades. This study assessed the behavioral, emotional, and social difficulties of students in relation to self-concept, language, and literacy abilities over time. Participants were followed from 8 years old to 17 years old. Lindsay and Dockerell (2012) found that poor language and literacy skills continued, and peer and conduct problems were found to increase over this age range. Joffee and Black (2012) explored behavioral, emotional, and social difficulties in young adolescents who, based on teacher report, were identified as having low language skills and/or poor academic achievement. These students had not been clinically diagnosed as having a language disorder. Results of Joffee and Black's (2012) study indicate that even students with subtle language problems can negatively impact school and social interactions. The researchers emphasized the need to identify and treat language weakness in all students so that all children can be properly supported.

There is a clear need for formal and informal assessment tools that aid in the identification of language disorders because without appropriate assessment and intervention, there can be serious negative impacts to a child's development, education, and social interactions. Observations of students' language abilities in his/her natural educational environment, as well as teacher and parent observations of language functioning in educational settings are fundamental when determining eligibility. Bishop and McDonald (2009) emphasize that when assessing children for language impairment, it is important to use both language test scores and parental report in order to provide complementary information to the evaluation. Spoken language comprehension and spoken language disorders can have adverse effects on

various aspects of language development, as well as academic performance, and peer relationships. For example, a child who has difficulty with their ability to understand spoken language may find it difficult to follow along during classroom instruction and fall behind in their classwork. Additionally, a child who has trouble understanding or using spoken language may have difficulty developing meaningful peer relationships and friendships, which could lead to a variety of other difficulties such as behavioral and emotional problems. By assessing students with the *IMPACT Language Functioning Rating Scale*, speech-language pathologists, teachers, and parents can observe children in their natural environments and identify those individuals who have a suspected or an existing diagnosis of a language disorder and the impact the language disorder may have on the child.

Contextual Background for Rating Scale Areas

Language impairment involves difficulty in the understanding and/or use of spoken, written, and/or other symbol systems. The disorder may involve: "(1) the form of language (phonology, morphology, syntax); (2) the content of language (semantics); and/or (3) the function of language in communication (pragmatics) in any combination" (ASHA, 2016). Listening comprehension is a high-order skill that involves both language and cognitive abilities (Florit, Roch, & Levorato, 2013; Kim & Phillips, 2014; Lepola, Lynch, Laakkonen, Silven, & Niemi, 2012). Specifically, listening comprehension refers to one's ability to comprehend spoken language (e.g., conversations, stories/narratives) by extracting and constructing meaning. Research has showed that listening comprehension is critical to reading comprehension (Foorman, Koon, Petscher, Mitchell, & Truckenmiller, 2015; Kim, 2015; Kim, Wagner, & Lopez, 2012; Kim & Wagner, 2015). When children present with reading comprehension deficiencies, there is a heavy focus on word recognition difficulties, including dyslexia and learning disabilities. Difficulties with word recognition are linked to weakness in the phonological domain of language and are often identified early on in the pre-school years (Catts, Fey, Zhang, & Tomblin, 2001). On the other hand, some children demonstrate reading comprehension difficulties despite adequate word reading abilities (Catts, Adlof, & Ellis Weismer, 2006; Nation, Clarke Marshall, & Durand, 2004). This group of individuals is known as poor comprehenders. Poor comprehenders are able to read text accurately and fluently at age-appropriate levels, however, they have difficulty understanding what they are reading (Cain & Oakhill, 2007; Nation, 2005). For example, when reading, poor comprehenders have weaknesses in the areas of semantics, syntax (Catts, Adlof, & Ellis Weismer, 2006; Nation & Snowling, 1998; Nation, Snowling, & Clarke, 2007) and more complex parts of language such as idioms, inferencing, comprehension monitoring, and knowledge of text structure (Oakhill, 1984; Cain & Towse, 2008; Cain, Oakhill, & Bryant, 2004; Oakhill & Yuill, 1996). Additionally, when we consider narrative comprehension, children with language disorders are less likely to provide correct answers to literal or inferential questions about stories that have been read to them (Gillam, Fargo, & Robertson, 2009; Laing & Kamhi, 2002). Since reading comprehension takes time to develop, it is difficult to demonstrate reading comprehension deficits in children before they are able to read accurately and fluently. Thus, these students' reading comprehension deficits may go unnoticed until later grades. As such, it is critical that language deficits are identified as early on in development as possible.

There is also a strong relationship between oral language abilities and reading ability (Hulme & Snowling, 2013). Nation, Clarke, Marshall, and Durand (2004) investigated poor compehenders' spoken language skills. The results of this study found that these students were less skilled than those in the typically developing group on semantic tasks (e.g., vocabulary and word knowledge), morphosyntax

(e.g., past tense inflection, sentence comprehension) and aspects of language use (e.g., understanding figurative language). Research also suggests that students with expressive language difficulties are four to fives times more likely than their peers to present with reading difficulties (Catts, Fey, Zhang, & Tomblin, 2001). For example, Zielinkski, Bench, and Madsen (1997) explored expressive language delays in preschoolers and found that these children were more likely to have difficulties with reading performance. Poll and Miller (2013) also reported that when children are 8 years old, expressive language delays could be a significant risk factor for poor oral language and reading comprehension. Furthermore, Lee (2011) discovered that expressive language development predicts comprehension of reading passages in both third and fifth grade students. Vocabulary can also play an important role early on in development as was demonstrated in Duff, Reen, Plunkett, and Nation's (2015) study that found infant vocabulary between 16 and 24 months is predictive of reading comprehension early on in school instruction years. Additionally, Pysridou, Eklund, Poikkeus, and Torppa's study (2018) found that expressive language ability at age 2–2.5 years old is associated with reading comprehension in ages 8–16 years old.

Listening comprehension and oral language abilities can also be important when we consider writing development (Kim, Al Otaiba, Wanzek, & Gatlin, 2015; Hulme & Snowling, 2013). Children with language impairments have been found to show grammatical errors (Gillam & Johnston, 1992; Scott & Windsor, 2000; Windsor, Scott, & Street, 2000) and spelling errors in their written texts. The spelling errors are similar to those found in children with dyslexia (Puranik, Lombardino, & Altmann, 2007), however, an individual's ability to create and think of new ideas appears to be specific to difficulties within the language system (Bishop & Clarkson, 2003; Puranik, Lombardino, & Altmann, 2007). Numerous studies have explored the difficulties that school-age children with language impairment have with telling stories. For example, when compared to typically developing children, children with language deficits tend to compose stories that contain fewer words and utterances (Moyano & McGillivray, 1988 [as cited in Hughes, McGillivray, & Schmidek, 1997]), fewer story grammar components (Paul, 1996), reduced sentence complexity (Gillam & Johnston, 1992), fewer complete cohesive ties (Liles, 1985), increased grammatical errors (Liles, Duffy, Merritt, & Purcell, 1995; Norbury & Bishop, 2003), and poorer overall story quality (Gillam, McFadden, & van Kleeck, 1995; McFadden & Gillam, 1996).

Over the last thirty years, there has been an abundance of research demonstrating that children with specific language impairment (SLI) are at a disadvantage when it comes to peer relationships (Durkin & Conti-Ramsden, 2010). Individuals with SLI engage less in active conversation interactions, enter less frequently into positive social interactions, demonstrate poorer discourse skills, are more likely to provide inappropriate verbal responses, and are less likely to influence others successfully (Hadley and Rice, 1991; Craig, 1993; Craig and Washington, 1993; Grove, Conti-Ramsden, & Donlan, 1993; Guralnick, Connor, Hammond, Gottman, & Kinnish, 1996; Brinton, Fujiki, & McKee 1998; Vallance, Im, & Cohen 1999). Children with SLI also tend to score lower in the areas of social skills, social cognitive abilities, and may have trouble with behavioral and emotion regulation (Cohen, Barwick, Horodezky, Vallance, & Im, 1998; Fujiki, Brinton, & Clarke, 2002; Marton, Abramoff, &Rosenzweig, 2005; Lindsay, Dockrell, & Strand, 2007). Additionally, children with language impairments are at higher risk of academic failure, social exclusions, behavioral and emotional difficulties, and are more vulnerable to being bullied (Conti-Ramsden, Durkin, Simkin, & Knox, 2009; St Clair, Pickles, Durkin, & Conti-Ramsden, 2011). Lastly, children with language disorders are also at a heightened risk of

exhibiting externalizing problems and antisocial conduct disorders (Beitchman, Wilson, Johnson, et al., 2001; Conti- Ramsden & Botting, 2004).

IMPACT Language Functioning Rating Scale Area Descriptions

Spoken Language Comprehension

The *spoken language comprehension* rating scale items look at how well an individual understands spoken language. For example, rating scale items look at a child's ability to understand grade level stories, vocabulary, narratives, and his/her ability to answer questions regarding a given story. Additional test items in this area look at an individual's ability to follow along with a conversation, lecture, or discussion, and the ability to recognize when something he/she hears does not make sense.

Sample Spoken Language Comprehension Item: After listening to a lesson, discussion, or story, is the student able to answer who, what, where, and when questions? For example, is the student able to recall the characters, setting, time, place, and what was happening in the story?

Oral Expression

The *oral expression* rating scale items look at how well an individual is able to use spoken language. For example, test items investigate if the individual is able to appropriately ask and answer questions, initiate conversations, use narrative storytelling, grade level vocabulary, correct word order, and grammar. Additional test items in this area look at an individual's ability to add comments and questions to a conversation, maintain the topic, form thoughts and ideas, problem solve, negotiate, and use critical thinking skills.

Sample Oral Expression Item: Does the student experience difficulty asking or answering questions in class? For example, does he/she have trouble responding to teacher or peer comments during classroom activities?

Language and Literacy

The *language and literacy* rating scale items look at an individual's ability to comprehend and understand what he/she is reading, to distinguish between the main idea and supporting details, and to use his/her own experiences to predict what might happen in grade-level stories. Additionally, literacy rating scale items look at an individual's writing abilities.

Sample Language Processing and Integration Item: Does the student demonstrate an understanding of grade level stories and literature? For example, is the student able to follow along with stories that are read in class and is he/she able to comprehend what is going on in the story?

Language Processing and Integration

The *language processing and integration* rating scale items look at how an individual follows multi-step instructions, understands figurative language, analogies, and inferences, and sequences details or events. Additionally, rating scale items look at whether an individual's ability to comprehend and use spoken language impacts his/her reading abilities.

Sample Language Processing and Integration Item: Does the student have a difficult time making inferences/implied meaning from given information? For example, does the student have a difficult time "reading between the lines," making connections, or drawing conclusions?

Social Interactions

The *social interactions* rating scale items look at how spoken language comprehension and use may impact an individual's social interactions. For example, rating scale items may look at whether an individual is aware of his/her language deficits and how he/she expresses their feelings towards their language disorder. Additionally, rating scale items investigate an individual's confidence regarding his/her communication and how this impacts their participation in conversations and activities with peers, friends, and family.

Sample Language Processing and Integration Item: Does the student's ability to understand and use language make it difficult for him/her to participate fully in school related clubs or activities? For example, does the student's language skills hold them back from joining drama club or yearbook club?

The *spoken language comprehension* rating scale items look at how well an individual understands spoken language. For example, rating scale items look at a child's ability to understand grade level stories, vocabulary, narratives, and his/her ability to answer questions regarding a given story. Additional test items in this area look at an individual's ability to follow along with a conversation, lecture, or discussion, and the ability to recognize when something he/she hears does not make sense.

Chapter

3

Administration and Scoring Procedures

The following testing guidelines represent specific administration and scoring procedures for the *IMPACT Language Functioning Rating Scale.* These procedures are considered best professional practice required in any type of rating scale as described in the Standards for Educational and Psychological Testing (American Educational Research Association, American Psychological Association, & National Council on Measurement in Education [AERA, APA, and NCME], 2014).

Examiner Qualifications

Professionals who are formally trained in the ethical administration, scoring, and interpretation of assessment tools and who hold appropriate educational and professional credentials may administer the *IMPACT Language Functioning Rating Scale.* Qualified examiners include speech-language pathologists and school psychologists. It is a requirement to read and become familiar with the administration, recording, and scoring procedures before using this rating scale and asking parents and teachers to complete the rating scales.

Confidentiality Requirements

As described in Standard 6.7 of the Standards for Educational and Psychological Testing (AERA et al., 2014), it is the examiner's responsibility to protect the security of all testing material and ensure confidentiality of all testing results.

Target Population for Testing

The standardization process undertaken by the *IMPACT Language Functioning Rating Scale* allows it to

be used for individuals between the ages of 3-21. The *IMPACT Language Functioning Rating Scale* provides information regarding an individual's spoken language comprehension, expressive language, language integration, literacy, and social skills. Students with these difficulties will be brought to the attention of speech-language pathologists, school psychologists, teachers, parents, reading specialists and others who are involved with the academic and social impact of language impairments.

The IMPACT Language Functioning Rating Scale can be used alongside a formal assessment tool to help aid in the eligibility criteria needed for special education services or can be used to provide a description of current language skills. The target populations for this rating scale are provided below.

The IMPACT Language Functioning Rating Scale should be used alongside a formal language assessment for students who have been previously diagnosed or are suspected of having a spoken language comprehension or expressive language disorder (also known as specific language impairment, developmental language disorder, speech or language impairment, or language learning disability). This rating scale can help provide criteria for a language impairment diagnosis and/or eligibility.

The IMPACT Language Functioning Rating Scale should be used alongside a formal language assessment for students suspected of having a learning disability in the area of oral or written language (also known as specific learning disability, language-based learning disability, or language learning disability). This rating scale can help provide criteria for language impairment diagnosis and/or eligibility.

The IMPACT Language Functioning Rating Scale should be used for students with known diagnoses, such as intellectual disability, autistic spectrum disorder, intellectual disorder, and traumatic brain disorder. This rating scale can help provide a description of current language skills.

The IMPACT Language Functioning Rating Scale should be used for students with known difficulty of language, literacy, or social communication skills that have not met criteria for a formal diagnosis but are receiving support services. This rating scale can help provide a description of current language skills.

Students in any of the above groups, who have been previously assessed with *The IMPACT Language Functioning Rating Scale,* can also benefit with a follow-up of the rating scale for the purpose of tracking progress. Note: Follow-up assessments should take place at least 6-months or later after the previous assessment date.

Testing Time

Administration of the clinician, teacher, and parent rating scale takes approximately 30 minutes respectively.

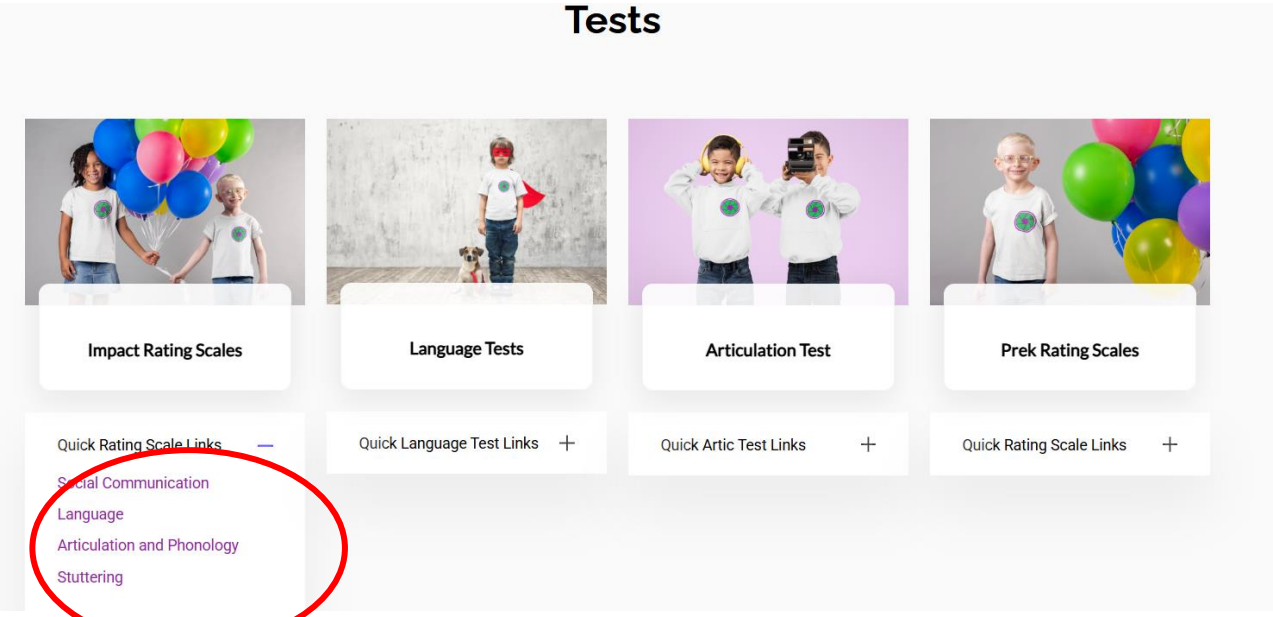
Test Materials

The *IMPACT Language Functioning Rating Scale* consists of three observational rating scales, one for clinician, one for parent, and one for the teacher. All rating scales and scale converting software is available on the *Video Assessment Tools* website at: www.vidoassessmenttools.com

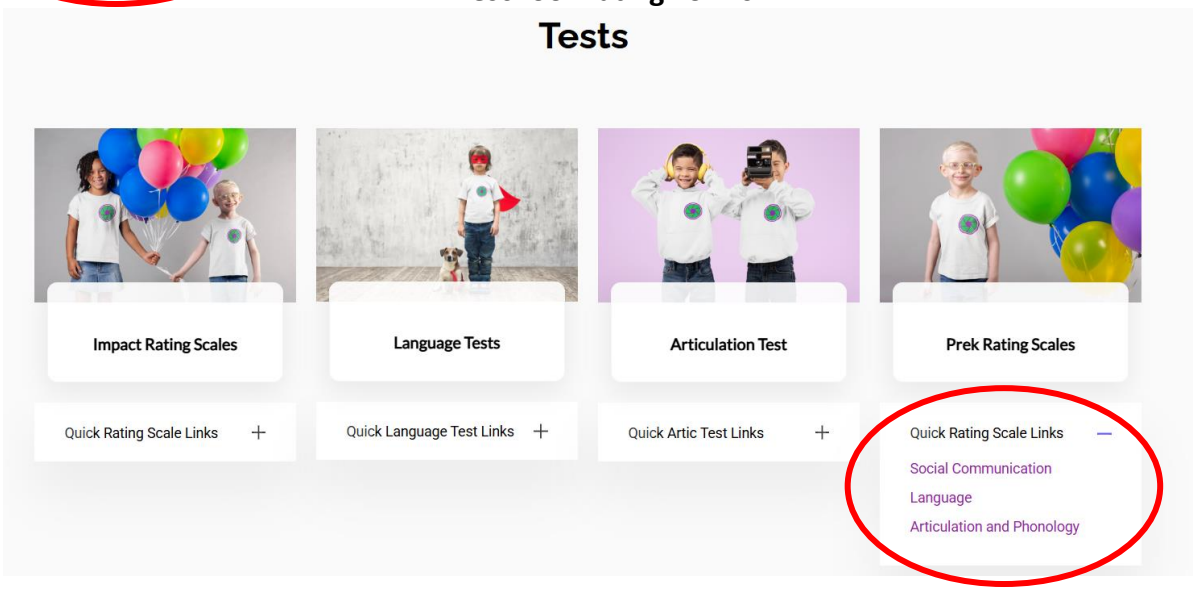
Accessing Clinician, Parent, and Teaching Rating Forms online

Begin by logging onto your account at www.slpplatform.com and select "Administer Tests". Select the *IMPACT Language Rating Scale* as shown below,

School-Age Rating Forms

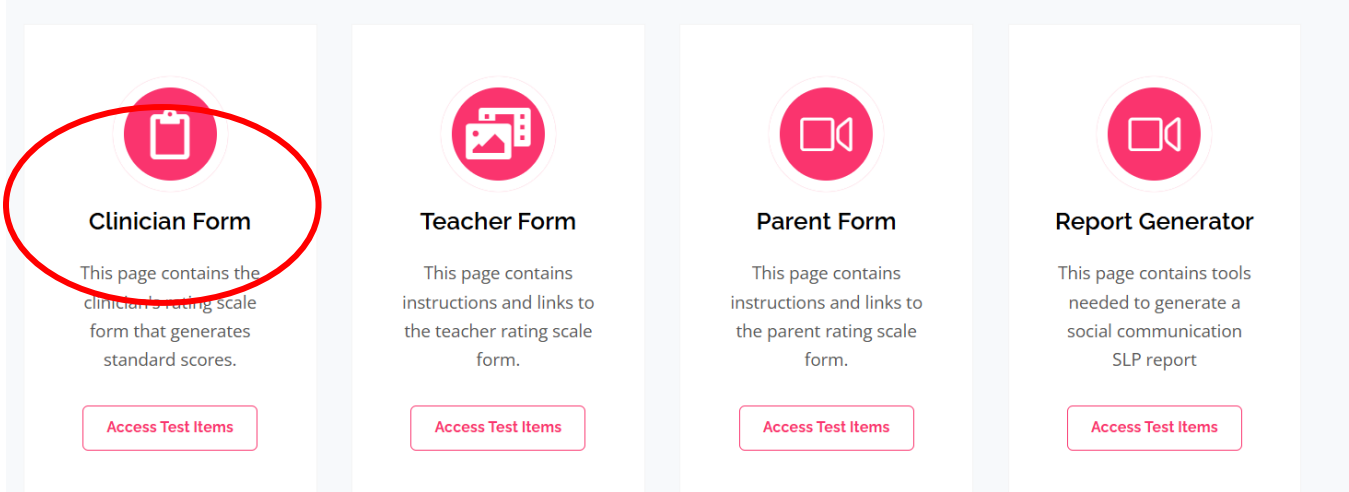


Preschool Rating Forms



Administration Instructions

Step 1/Clinician Form: Complete the Clinician Rating Scale. Please be sure to review the videos on the page to improve your understanding of what each test item is asking.



When you are finished filling out the form, click on the "Submit" button. The system will generate a scored protocol that contains standard scores and percentile ranks. Enter your own (the examiner's) email address to receive a copy of the protocol and report by email.

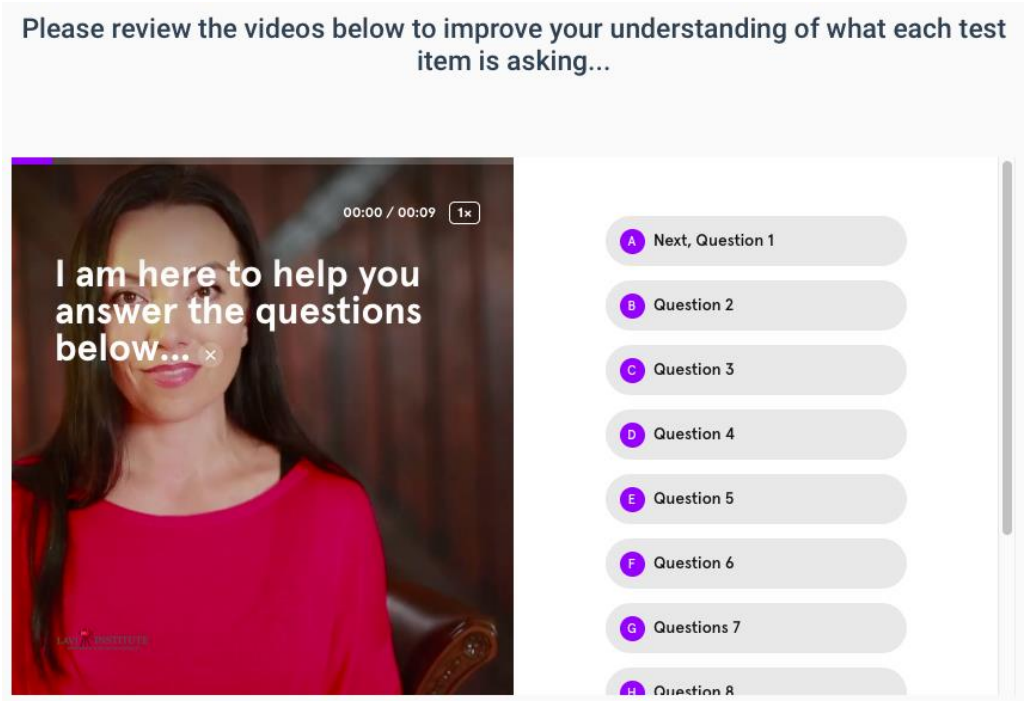
Step 2/Teacher Form: Send an email/text message to the student's teacher with the link to the "Teacher Rating Scale" that can be completed online. Explain to the teacher (a template of the email with the explanation is provided in step 2) that there are accompanying videos that he/she can watch that will provide examples of what each question is asking. After completing the rating scale, ask the teacher to type in your email address in the provided box (at the bottom of the form). Once the teacher completes the form, the system will generate and email you a scored protocol that contains standard scores and percentile ranks.

Step 3: Send an email/text message to the student's parent(s) with the link to the "Parent Rating Scale" that can also be completed online. Explain to the parent (a template of the email with the explanation is provided in step 3) that there are accompanying videos that he/she can watch that will provide examples of what each question is asking. After completing the rating scale, ask the parent to type in your email address in the provided box (at the bottom of the form.
Once the parent completes the form, the system will generate and email you a scored protocol that contains standard scores and percentile ranks.

Step 4: Use the optional report generator to assist you in writing the pragmatic language write-up portion of your evaluation.

Rating Scale Item Clarification

The clinician, parent, and teaching rating scale forms are accompanied with videos to clarify test items if there is uncertainty over what each test item is evaluating. Clinicians are asked to remind parents and teachers to review the videos on the website if they need clarification or examples of what each test item is addressing.



Chapter

4

Development, Standardization and Normative Information

This section describes the procedures followed in developing test items, implementing the pilot and normative study, and selecting the items for the final version of the test. This section also details the normative samples obtained to standardize and validate the IMPACT Language Rating Scale. All test development and standardization project procedures were reviewed and approved by IntegReview IRB (now known as Advarra), a fully AAHRPP-accredited independent review board that provides ethical review for all phases of industry-sponsored and federally funded research in the U.S. Additionally, all test development and standardization methodology was based on best practices in research, and conducted in compliance with complex regulatory requirements, frameworks, and guidelines set forth by the Standards for Educational and Psychological Testing (American Educational Research Association, American Psychological Association, & National Council on Measurement in Education [AERA, APA, and NCME], 2014).

Test Item Development

Selection of the test items began with an extensive review of research and theory related to the development of language, defining characteristics of successful communication, specific communication abilities and patterns required in the educational setting as well as an analysis of which communication behaviors are most predictive of language impairment for specific age groups. The literature reviewed consisted of research articles, textbooks, diagnostic tests and the diagnostic criteria for communication disorder (language impairment) from IDEA (2015). This analysis resulted in identification of 98 specific behaviors presumed to impact educational progress and to be indicative of language deficits. Next, the test items were reviewed and edited for clarity and face validity for use by clinicians, teachers and parents. The systematic review of the test items was completed by a panel of 12 experts in the area of speech pathology (specifically, social communication). The panel also included 11 teachers and 16 parents of children diagnosed with language impairment. After receiving their feedback, some items were rewritten, dropped or rephrased.

The test was developed in three phases: pilot study, normative study, and national standardization. The procedures for each phase are detailed below.

Pilot Study

The pilot study was conducted to determine the appropriateness of questions and to review all test instructions. The pilot study included 92 children from the ages of 5:0 to 12:11. The sample was 21% Hispanic, 10% African American, 51% White, 5% Asian and 13% other ethnicities (60% males and 40% females). The pilot study included 75% typically developing children and 25% children with identified social communication disorder.

The rating scale responses were coded. These data were factor analyzed. From the results of this analysis, a scale of seven factors containing 40 items was produced. Cronbach's coefficient alphas were computed and results indicated the alphas were sufficiently large to provide support for the test reliability. The results of the pilot study were found to be effective for test item selection.

Normative Study

Following the pilot study, a normative study was conducted to establish norms for IMPACT Language Rating Scale by testing typically developing children representative of the general U.S. population. A clinical group was included for validation purposes. Additional goals of the normative study included investigation of optimal weighted scoring system/criteria as well as optimal test administration time. The study reviewed administrative and scoring procedures preliminary to national standardization. The test content was evaluated both qualitatively and quantitatively for bias.

The normative study included 202 children from the ages of 5:0 to 15:11. The sample was 12% Hispanic, 11% African American, 56% White, 7% Asian and 16% other ethnicities (60% males and 40% females). The pilot study included 88% typically developing children and 12% children with identified social communication disorder (clinical group). The mean for the outcome variables were compared between the clinical and the typically developing groups of examinees using Kruskal Wallis analysis of variance (ANOVA). Further comparisons in mean scores between the groups were examined using Mann- Whitney U test. The level of significance was set at $p \leq 0.05$. Further comparisons using Mann- Whitney U test showed that there was a significant difference among all the study groups ($p < 0.001$).

Based on the feedback of all examinees, some test items were modified, while others were removed altogether. The test directions and scoring procedures were fine-tuned. Suggestions of the field test examiners were thoroughly reviewed prior to the national standardization.

National Standardization

One of the ways we can tell if an assessment is a strong test, is if it includes adequate norms. Norm-referenced testing is a method of evaluation where an individual's scores on a specific test are compared to scores of a group of test-takers (e.g., age norms) (AERA, APA, and NCME, 2014). Previous research has suggested that utilizing a normative sample can be beneficial in the identification of a disability. Additionally, research has suggested that the inclusion of children with disabilities in the normative sample may negatively impact the test's ability to differentiate between children with disorders and

children who are typically developing (Peña, Spaulding, & Plante, 2006). When reviewing a test's normative sample, it is important to consider size, gender, race and ethnicity, age, geographic location, and whether individuals with disabilities were included in the normative sample.

The national standardization consisted of 2 phases. The first phase of the normative data collection for the IMPACT Language Rating Scale was based on the performance of 1431 examinees across 11 age groups (shown in Table 4.1) from 17 states across the United States of America (Arizona, California, Colorado, Nevada, Idaho, Illinois, Iowa, Kansas, Ohio, Minnesota, Florida, New York, Pennsylvania, Florida, South Carolina, Texas, Washington).

The second phase of the normative data collection for the IMPACT Language Rating Scale was based on the test performance of additional 102 examinees ages 3:0 through 4:11 years old (shown in Table 4.3) in 5 states (California, Ohio, Illinois, New York, Florida).

Table 4.1
Representation of the Sample, by Age Group

Age Group	Age	*N*	%
1	5-0 to 5-11	132	8
2	6-0 to 6-11	126	9
3	7-0 to 7-11	141	10.5
4	8-0 to 8-11	116	11
5	9-0 to 9-11	125	9.5
6	10-0 to 10-11	137	8
7	11-0 to 11-11	111	9
8	12-0 to 12-11	140	9
9	13-0 to 13-11	129	8
10	14-0 to 14-11	108	8
11	15-0 to 21-0	166	10
Total Sample		1431	100%

The data was collected throughout the 2016-2020 school years by 34 state licensed speech-language pathologists (SLPs). The SLPs were recruited through Go2Consult Speech and Language Services, a speech-language pathology services and nonpublic agency certified by the CA Department of Education in conjunction with the Lavi Institute, an ASHA approved CE provider. All standardization project procedures were reviewed and approved by IntegReview IRB (now known as Advarra), a fully AAHRPP-accredited independent review board that provides ethical review for all phases of industry-sponsored and federally funded research in the U.S. To ensure representation of the national population, the *IMPACT Language Functioning Rating Scale* standardization sample was selected to match the US Census data reported in the ProQuest Statistical Abstract of the United States (ProQuest, 2017). The sample was stratified within each age group by the following criteria: gender, race or ethnic group, and geographic region. The demographic table below (Table 4.2) specifies the distributions of these characteristics and shows that the normative sample is nationally representative.

Table 4.2			
Demographics of the Normative Sample vs. US Population			
Normative Sample Size = 1431			
Demographic	*N* Normative Sample	% Normative Sample	% US Population
Gender			
Male	709	49.5%	49%
Female	722	50.5%	51%
Total	1431	100%	100%
Race			
White	873	61%	77%
Black	215	15%	13%
Asian	100	7%	4%
Hispanic	171	12%	12%
Other	72	5%	6%
Total	1431	100%	100%
Clinical Groups			
	none	none	none
US Regions			
Northeast	243	17%	16%
Midwest	301	21%	22%
South	515	36%	38%
West	372	26%	24%
Total	1431	100%	100%
Parents' Educational Level			
Four years of college or more	415	29	31%
Some college	415	29	27%
High school graduate	444	31	30%
Less than high school graduate	157	11	12%
Total	1431	100%	100%

Table 4.3: Demographics of the Normative Sample (age group 3:0-4:11) vs. US Population

Normative Sample Size = 94

Demographic	N Normative Sample	% Normative Sample	% US Population
Gender			
Male	59	60%	49%
Female	43	40%	51%
Total	102	100%	100%
Race			
White	64	65%	77%
Black	10	10%	13%
Asian	6	5%	4%
Other	9	8%	6%
Hispanic	13	12%	12%
Total	102	100%	100%
Clinical Groups			
	none	none	none
US Regions			
Northeast	11	11%	16%
Midwest	24	23%	22%
South	36	36%	38%
West	31	30%	24%
Total	102	100%	100%
Parents' Educational Level			
Four years of college or more	31	30%	31%
Some college	31	30%	27%
High school graduate	30	29%	30%
Less than high school graduate	10	11%	12%
Total	102	100%	100%

Criteria for inclusion in the normative sample

A strong assessment is one that provides results that will benefit the individual being tested or society as a whole (American Educational Research Association, American Psychological Association, & National Council on Measurement in Education [AERA, APA, and NCME], 2014). One way we can tell if an assessment is strong, is if the test includes adequate norms. Previous research has suggested that utilizing a normative sample can aid in the identification of a disability. Research has also suggested that the inclusion of children with disabilities may negatively impact the test's ability to differentiate between children with disorders and children who are typically developing (Peña, Spaulding, & Plante,

2006). Since the purpose of the *IMPACT Language Functioning Rating Scale* is to help to identify students who present with language disorders, it was critical to exclude students from the normative sample who have diagnoses that are known to influence language abilities (Peña, Spaulding, & Plante, 2006). Students who had previously been diagnosed with spoken language comprehension and/or spoken language disorders, auditory processing disorders, and articulation or phonological impairments were not included in the normative sample. Further, students were excluded from the normative sample if they were diagnosed with autism spectrum disorder, intellectual disability, hearing loss, neurological disorders, or genetic syndromes. In order for students to be included in the normative sample for this assessment tool, students must have met criteria of having typical language development, and show no evidence of language deficits. Thus, the normative sample for the *IMPACT Language Functioning Rating Scale* provides an appropriate comparison group (i.e., a group without any known disorders that might affect language abilities) against which to compare students with suspected disorders.

The *IMPACT Language Functioning Rating Scale* is designed for students who are native speakers of English and/or are English language learners (ELL) who have demonstrated a proficiency in English based on state testing scores and school district language evaluations. Additionally, students who were native English speakers and also spoke a second language were included in this sample.

Norm-referenced testing is a method of evaluation where an individual's scores on a specific test are compared to scores of a group of test-takers (e.g., age norms) (AERA, APA, and NCME, 2014). Clinicians can compare clinician, teacher, and parent ratings on the *IMPACT Language Functioning Rating Scale* to this normative sample to determine whether a student is scoring within normal limits or, if their scores are indicative of a language disorder. Administration, scoring, and interpretation of the *IMPACT Language Functioning Rating Scale* must be followed in order to make comparisons to normative data. This manual provides instructions to guide examiners in the administration, scoring, and interpretation of the rating scale.

Chapter

5

Validity and Reliability

This section of the *IMPACT Language Functioning Rating Scale* manual provides information on the psychometric characteristics of validity and reliability. Validity helps establish how well a test measures what it is supposed to measure and reliability represents the consistency with which an assessment tool measures a certain ability or skill. The first half of this chapter will evaluate content, construct, criterion, and clinical validity of the *IMPACT Language Functioning Rating Scale*. The latter half of the chapter will review the consistency and stability of the *IMPACT Language Functioning Rating Scale* scores, in addition to test retest and inter-rater reliability.

Validity

Validity is essential when considering the strength of a test. Content validity refers to whether the test provides the clinician with accurate information on the ability being tested. Specifically, content validity measures whether or not the test actually assesses what it's suppose to. According to McCauley and Strand (2008), there should be a rationalization of the methods used to choose content, expert evaluation of the test's content, and an item analysis.

Content-oriented evidence of validation addresses the relationship between a student's learning standards and the test content. Specifically, content-sampling issues look at whether cognitive demands of a test are reflective of the student's learning standard level. Additionally, content sampling may address whether the test avoids inclusion of features irrelevant to what the test item is intended to target.

Single-cut Scores

It is common to use single cut scores (e.g., -1.5 standard deviations) to identify disorders, however, there is evidence that advises against using this practice (Spaulding, Plante, & Farinella, 2006). When using single cut scores (e.g., -1.5 SD, -2.5 SD, etc.), we may under identify students with impairments on tests for which the best-cut score is higher and over identify students' impairments on tests for which the best-cut score is lower. Additionally, using single cut scores may go against IDEA's (2004) mandate, which states assessments must be valid for the purpose for which they are used.

Inclusion/Exclusion Criteria for the Discriminant Analysis and the Group Differences Study

Typically developing participants were selected based on the following criteria: 1) exhibited hearing sensitivity within normal limits; 2) presented with age-appropriate speech and language skills; 3) successfully completed each school year with no academic failures; and 4) attended public school and placed in general education classrooms.

Inclusion criteria for the spoken language comprehension group was: 1) having a current diagnosis of spoken language comprehension impairment (based on medical records and/or school-based special education eligibility criteria); 2) being enrolled in the general education classroom for at least 4 hours per day; and 3) exhibited hearing sensitivity within normal limits.

Finally, the inclusion criteria for the expressive language impairment group was: 1) having a current diagnosis of a spoken language impairment or delay (based on medical records and/or school-based special education eligibility criteria); 2) being enrolled in the general education classroom for at least 4 hours per day; and 3) exhibited hearing sensitivity within normal limits.

Sensitivity and Specificity

Table 5.1 shows the cut scores needed to identify language disorders within each age range. Additionally, this table demonstrates the sensitivity and specificity information that indicates the accuracy of identification at these cut scores. Sensitivity and specificity are diagnostic validity statistics that explain how well a test performs. Vance and Plante (1994) set forth the standard that for a language assessment to be considered clinically beneficial, it should reach at least 80% sensitivity and specificity.

Thus, strong sensitivity and specificity (i.e., 80% or stronger) is needed to support the use of a test in its identification of the presence of a disorder or impairment. Sensitivity measures how well the assessment will accurately identify those who truly have a language disorder (Dollaghan, 2007). If sensitivity is high, this indicates that the test is highly likely to identify the language disorder, or, there is a low chance of "false positives." Specificity measures the degree to which the assessment will accurately identify those who do not have a language disorder, or how well the test will identify those who are "typically developing" (Dollaghan, 2007).

Table 5.1 IMPACT Language Functioning Rating Scale sensitivity, specificity and likelihood ratios

Clinician Rating Scale

Age group	Cut score	Sensitivity	Specificity	Positive likelihood ratio	Negative likelihood ratio
3:0-3:11	77	.83	.81	5.17	.17
4:0-4:11	78	.86	.91	4.33	.19
5:0-5:11	76	.83	.79	3.48	.14
6:0-6:11	77	.81	.80	3.92	.09
7:0-7:11	78	.84	.79	4.34	.11
8:0-8:11	78	.80	.83	5.13	.21
9:0-9:11	77	.82	.80	3.32	.12
10:0-10:11	77	.83	.81	5.17	.17
11:0-11:11	76	.82	.84	4.16	.09
12:0-12:11	77	.88	.91	5.11	.08
13:0-13:11	78	.91	.88	5.13	.18
14:0-14:11	78	.86	.91	4.33	.19
15:0-15:11	78	.82	.79	5.87	.21
16:0-21:0	77	.86	.88	6.21	.13

Teacher Rating Scale

Age group	Cut score	Sensitivity	Specificity	Positive likelihood ratio	Negative likelihood ratio
3:0-3:11	78	.85	.92	4.18	.11
4:0-4:11	77	.84	.84	6.11	.11
5:0-5:11	77	.88	.83	4.18	.12
6:0-6:11	77	.83	.87	3.82	.14
7:0-7:11	77	.84	.80	4.17	.15
8:0-8:11	78	.91	.91	4.11	.17
9:0-9:11	77	.89	.84	3.42	.13
10:0-10:11	78	.91	.86	4.16	.18
11:0-11:11	77	.94	.89	6.11	.15
12:0-12:11	77	.86	.93	4.17	.06
13:0-13:11	78	.85	.92	4.18	.11
14:0-14:11	78	.82	.89	4.31	.07
15:0-15:11	78	.91	.80	4.14	.15
16:0-21:0	77	.84	.84	6.11	.11

Note: Age groups 16:0-21:0 are reported together as there were no age-related changes detected after the age of 16. Total N=2827; typically developing group n=1431; clinical group=1396

Table 5.1 IMPACT Language Functioning Rating Scale sensitivity, specificity and likelihood ratios

Parent Rating Scale

Age group	Cut score	Sensitivity	Specificity	Positive likelihood ratio	Negative likelihood ratio
3:0-3:11	78	.91	.82	4.23	.06
4:0-4:11	78	.83	.91	4.23	.19
5:0-5:11	78	.91	.81	4.16	.16
6:0-6:11	77	.84	.86	4.73	.21
7:0-7:11	77	.94	.84	4.13	.09
8:0-8:11	78	.91	.82	4.23	.06
9:0-9:11	77	.80	.86	4.11	.11
10:0-10:11	77	.83	.91	5.32	.16
11:0-11:11	77	.91	.94	4.45	.19
12:0-12:11	78	.89	.87	4.11	.09
13:0-13:11	77	.91	.92	4.45	.08
14:0-14:11	77	.87	.86	4.11	.16
15:0-15:11	78	.83	.91	4.23	.19
16:0-21:0	77	.92	.83	4.41	.11

Note: Age groups 16:0-21:0 are reported together as there were no age-related changes detected after the age of 16. Total N=2827; typically developing group n=1431; clinical group=1396

Content Validity

The validity of a test determines how well the test measures what it purports to measure. Validity can take various forms, both theoretical and empirical. This can often compare the instrument with other measures or criteria, which are known to be valid (Zumbo, 2014). For the content validity of the test, expert opinion was solicited. Thirty-one speech language pathologists (SLPs) reviewed the *IMPACT Language Functioning Rating Scale*. All SLPs were licensed in the state of California, held the Clinical Certificate of Competence from the American Speech-Language-Hearing Association, and had at least 5 years of experience in assessment of children with spoken language comprehension, spoken, and social language disorders. Each of these experts was presented with a comprehensive overview of the rating scale descriptions, as well as rules for standardized administration and scoring. They all reviewed 6 full-length administrations. Following this, they were asked 35 questions related to the content of the rating scale and whether they believed the assessment tool to be an adequate measure of language functioning. For instance, their opinion was solicited regarding whether the questions and the raters' responses properly evaluated the impact of language disorders on educational performance and social interaction. The reviewers rated each rating scale on a decimal scale. All reviewers agreed that the *IMPACT Language Functioning Rating Scale* is a valid informal observational measure to evaluate language skills and to determine the impact on educational performance and social interaction, in students who

are between the ages of and 21 years old. The mean ratings for the Clinician, Teacher, and Parent rating scales were 30.8±0.7, 28.8±0.8, 27.6±0.9, respectively.

Construct Validity

Developmental Progression of Scores

Spoken language comprehension and spoken language is developmental in nature and skills change with age. Mean raw scores for examinees should increase with chronological age, demonstrating age differentiation. Mean raw scores and standard deviations for the *IMPACT Language Functioning Rating Scale* are divided into eleven age intervals displayed in Table 5.2 below.

Table 5.2 Normative Sample's mean raw scores and standard deviations on the *IMPACT Language Functioning Rating Scale*

	Rating Scales		
Age Group	Clinician	Teacher	Parent
3:0-3:11	39 (3.3)	39 (4.7)	33 (3.1)
4:0-4:11	39 (3.0)	39 (4.4)	34 (3.8)
5:0-5:11	39 (3.1)	40 (4.1)	31 (3.2)
6:0-6:11	39 (3.3)	41 (2.8)	31 (2.6)
7:0-7:11	39 (3.2)	42 (1.9)	32 (3.4)
8:0-8:11	41 (2.1)	42 (4.1)	32 (2.7)
9:0-9:11	41 (3.4)	42 (3.1)	32 (2.8)
10:0-10:11	41 (3.3)	42 (3.7)	33 (1.7)
11:0-11:11	42 (3.2)	43 (3.4)	33 (3.6)
12:0-12:11	42 (2.4)	43 (1.7)	33 (3.1)
13:0-13:11	43 (3.4)	43 (3.1)	33 (3.8)
14:0-14:11	43 (3.8)	43 (3.1)	34 (3.9)
15:0-15:11	44 (2.8)	44 (2.4)	34 (2.6)
16:0-21:0	44 (3.3)	44 (3.6)	34 (3.7)

Criterion Validity

In assessing criterion validity, a correlation analysis was not possible for the IMPACT Language Functioning Rating Scale when compared to the current body of rating scales. The IMPACT Language Functioning Rating Scale is unique in its content and design. This rating scale cannot be compared to the existing body of rating scales because of its unique focus which is not available within other rating scales.

Group Differences

Since a language assessment tool is designed to identify those examinees with spoken language and spoken language comprehension impairments, it would be expected that individuals identified as likely

to exhibit spoken and spoken language comprehension impairments would score lower than those who are typically developing. The mean for the outcome variables (Clinician, Teacher, and Parent ratings) were compared among the two clinical groups and the typically developing group of examinees using Kruskal Wallis analysis of variance (ANOVA). The level of significance was set at $p \leq 0.05$. Table 5.4 reviews the ANOVA, which reveals a significant difference between all three groups.

Table 5.4: Clinician, Teacher, and Parent Rating Scale Comparison across Clinical and Typically-Developing groups (N=488)

	SLC Impairment group (n=164)	EL Impairment group (n=153)	TD group (n=171)	p-value*
Clinician [a,b,c]	112(3.2)	110(4.3)	152(3.4)	<.001
Teacher [a,b,c]	111(3.8)	113(3.2)	148(4.1)	<.001
Parent [a,b,c]	84(4.1)	84(3.7)	151(3.6)	<.001

Abbreviation: SLC, Spoken language comprehension; EL, Expressive Language; and TD, Typically Developing
**Kruskal-Wallis Analysis of Variance test*
[a] *significant difference between SLC and TD groups*
[b] *significant difference between EL and TD groups*
[c] *significant difference between SLC and EL groups*

Standards for fairness

Standards of fairness are crucial to the validity and comparability of the interpretation of test scores (AERA, APA, and NCME, 2014). The identification and removal of construct-irrelevant barriers maximizes each test- taker's performance, allowing for skills to be compared to the normative sample for a valid interpretation. Test constructs and individuals or subgroups of those who the test is intended for must be clearly defined. In doing so, the test will be free of construct-irrelevant barriers as much as possible for the individuals and/or subgroups the test is intended for. It is also important that simple and clear instructions are provided.

Response Bias

A bias is defined as a tendency, inclination, or prejudice toward or against something or someone. For example, if you are interviewing for a new employer and asked to complete a personality questionnaire, you may answer the questions in a way that you think will impress the employer. These responses will of course impact the validity of the questionnaire.

Responses to questionnaires, tests, scales, and inventories may also be biased for a variety of reasons. Response bias may occur consciously or unconsciously, it may be malicious or cooperative, self-

enhancing or self-effacing (Furr, 2011). When response bias occurs, the reliability and validity of our measures is compromised. Diminished reliability and validity will in turn impact decisions we make regarding our students (Furr, 2011). Thus, psychometric damage may occur because of response bias.

Types of Response Biases

Acquiescence Bias ("Yea-Saying and Nay-Saying") refers to when an individual consistently agrees or disagrees with a statement without considering what the statement means (Danner & Rammstedt, 2016).

Extremity Bias refers to when an individual consistently over or underuses "extreme" response options, regardless of how the individual feels towards the statement (Wetzel, Lüdtke, Zettler, & Bohnke, 2016).

Social desirability Bias refers to when an individual responds to a statement in a way that exaggerates his or her own positive qualities (Paulhus, 2002).

Malingering refers to when an individual attempts to exaggerate problems, or shortcomings (Rogers, 2008). *Random/careless responding* refers to when an individual responds to items with very little attention or care to the content of the items (Crede, 2010).

Guessing refers to when the individual is unaware of or unable to gage the correct answer regarding their own or someone else's ability, knowledge, skill, etc. (Foley, 2016).

In order to protect against biases, balanced scales are utilized. A balanced scale is a test or questionnaire that includes some items that are positively keyed and some items that are negatively keys. For example, the *IMPACT Language Functioning Rating Scale* items are rated on a 4-point scale ("never," "sometimes," "often," and "typically"). Now, imagine if we ask a teacher to answer the following two items regarding one of their students:

1. The student appears confident when asking and answering questions in the classroom.

2. The student does not appear to experience difficulty when asking and answering questions in class.

Both of these items are positively keyed because a positive response indicates a stronger level of confidence in language ability. To minimize the potential effects of acquiescence bias, the researcher may revise one of these items to be negatively keyed. For example:

1. The student appears confident when asking and answering questions in the classroom.

2. The student appears to experience difficulty when asking and answering questions in class.

Now, the first item is keyed positively and the second item is keyed negatively. The revised scale, which represents a balanced scale, helps control acquiescence bias by including one item that is positively keyed and one that is negatively keyed. If the teacher responded highly on both items, the teacher may be viewed as an acquiescent responder (i.e., the teacher is simply agreeing to items without regard for the content). If the teacher responds high on the first item, and responds low on the second item, we know that the teacher is reading each test item carefully and responding appropriately.

For a balanced scale to be useful, it must be scored appropriately, meaning the key must accommodate the fact that there are both positively and negatively keyed items. To achieve this, the rating scale must keep track of the negatively keyed items and "reverse the score." Scores are only reversed for negatively keyed items. For example, on the negatively keyed item above, if the teacher scored a *1* ("never") the score should be converted to a *4* ("typically") and if the teacher scored a *2* ("sometimes") the score should be converted to a *3* ("often"). Similarly, the researcher recodes responses of *4* ("typically") to *1* ("never") and *3* ("often") to *2* ("sometimes"). Balanced scales help researchers differentiate between acquiescent responders and valid responders. Therefore, test users can be confident that the individual reporting is a reliable and valid source.

Inter-rater Reliability

Inter-rater reliability measures the extent to which consistency is demonstrated between different raters with regard to their scoring of examinees on the same instrument (Osborne, 2008). For the *IMPACT Language Functioning Rating Scale,* inter-rater reliability was evaluated by examining the consistency with which the raters are able to follow the test scoring procedures. Two clinicians, two teachers, and two caregivers simultaneously rated students. The results of the scorings were correlated. The coefficients were averaged using the z-transformation method. The resulting correlations for the subtests are listed in Table 5.5.

Table 5.5 Inter-rater Reliability Coefficients, IMPACT Language Functioning Rating Scale

Rating Scale	*Reliability*
Clinician (N=31)	*.83*
Teacher (N=27)	*.89*

Test-Retest Reliability

This is a factor determined by the variation between scores or different evaluative measurements of the same subject taking the same test during a given period of time. If the test proves to be a strong instrument, this variation would be expected to be low (Osborne, 2008). The *IMPACT Language Functioning Rating Scale* was completed with 68 randomly selected examinees, ages 5-0 through 21-0 over two rating periods. The interval between the two periods ranged from 12 to 20 days. To reduce recall bias, the examiners did not inform the raters at the time of the first rating session that they would be rating again. All subsequent ratings were completed by the same examiners who administered the test the first time. The test-retest coefficients for the three rating scales were all greater than .80 indicating strong test-retest reliability for the *IMPACT Language Functioning Rating Scale.* The results are listed in Table 5.6.

Table 5.6						
Test - Retest Reliability						
		1st Test		2nd Test		Correlation Coefficient
Age Groups	N	Mean	SD	Mean	SD	
1,2, & 3	32					
Clinician		39	2	40	2	0.89
Teacher		38	1	39	1	0.86
Parent		31	2	32	2	0.82
4,5, & 6	29					
Clinician		41	1	40	1	0.79
Teacher		40	2	41	1	0.84
Parent		33	1	34	2	0.80
7, 8, 9, 10 & 11	34					
Clinician		44	2	44	2	0.84
Teacher		44	1	43	1	0.86
Parent		34	1	34	1	0.83

Internal Consistency

Internal consistency ensures that all items within the scale are measuring the same construct (i.e., social communication behavior as it relates to educational performance), and that they are related to each other and consistently contribute to the overall score, thereby providing a reliable and accurate representation of the attribute being measured. Table 5.7 shows the results for each of the samples.

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Table 5.7						
Internal Consistency						
	Clinician		Teacher		Parent	
Age Groups	n	Alpha	n	Alpha	n	Alpha
3:0-4:11	71	.87	49	.84	69	.88
5:0-6:11	65	.91	78	.91	66	.90
7:0-8:11	88	.94	80	.94	54	.94
9:0-10:11	84	.95	81	.96	81	.93
11:0-11:11	91	.91	67	.97	82	.91
12:0-15:11	78	.90	49	.93	56	.94
16:0-21:0	80	.94	61	.90	63	.97

Chapter

6

Highlights of the IMPACT Language Functioning Rating Scale

The results of the *IMPACT Language Functioning Rating Scale* provide information on the spoken language comprehension and expressive language skills that children and adolescents require to succeed in school and social situations. This rating scale is particularly valuable to individuals who have delays in spoken language comprehension, expressive language, language integration, literacy, and social interactions. Data obtained from the *IMPACT Language Functioning Rating Scale* is useful in determining eligibility criteria for a student with a language impairment.

Strong Psychometric Properties

The *IMPACT Language Functioning Rating Scale* was normed on a nationwide standardization sample of 1064 examinees. The sample was stratified to match the most recent U.S. Census data on gender, race/ethnicity, and region. Please refer to Chapter 4 for more information of the standardization process.

The *IMPACT Language Functioning Rating Scale* areas have strong sensitivity and specificity (above 80%), high internal consistency, and test-retest reliabilities. Criterion-related validity studies were conducted during standardization, with over 1064 participants. Please refer to Chapter 5 for more information on the summary results of the reliability and validity studies.

The contextual background and theoretical background sections described in Chapters 1 and 2 provide construct validity of the *IMPACT Language Functioning Rating Scale*. Additionally, please refer to chapter 1 for descriptions of each language skill observed and literature reviews to support this type of measurement included in the *IMPACT Language Functioning Rating Scale*.

Ease and Efficiency of Administration and Scoring

The *IMPACT Language Functioning Rating Scale* consists of three observational rating scales, one for clinician, one for parent, and one for the teacher. All *IMPACT* rating scales and scale converting software is available on the *Video Assessment Tools* website. Rating scale item clarification videos are also provided on this website. Additionally, an instructional email with a link to the website and rating form is prepared for your convenience to send to teacher and parents. Please review Chapter 3 for more information on the easy and effective administration process.

Chapter

7

Case Studies

This section will provide examples of how clinicians and intervention teams can use the results from *The IMPACT Language Functioning Rating Scale* to develop treatment plans for each individual student. We will review two case studies; the first two case studies will review students with a primary diagnosis of language disorder, specifically in the area(s) of spoken language comprehension and expressive language impairment. Next, we will present a case study of a student who has an autism spectrum disorder diagnosis. For the first and second case study only, the rating scale will aid in the diagnosis and for the third case study, the rating scale will act only to provide information to the intervention team. In order to protect the identities of our participants, all names used in the manual are pseudonyms, and minor details have been changed. All data for the *IMPACT Language Functioning Rating Scale* was gathered under a research protocol reviewed and approved by IntegReview IRB, an accredited and certified independent institutional review board. Parent permission and student consent was provided to share these case studies.

Case Study One: Fourth grade student with spoken language comprehension impairment

"Mario" is a 9-year-old boy in the fourth grade. His teacher recommended a comprehensive speech and language evaluation in order to determine what support, accommodations, and/or services would be the most effective to assist Mario with his language development. Mario's teacher had concerns in the areas of listening and reading comprehension.

As part of the comprehensive speech and language evaluation, the SLP included the *IMPACT Language Functioning Rating Scale* to evaluate the potential effects that Mario's language difficulties may have on his academics and social interactions. Specifically, the rating scale focuses on the following areas of language: (a) spoken language comprehension, (b) oral expression, (c) language integration, (d) literacy, and (e) social interactions. The speech-language pathologist, Mario's teacher (Mrs. Yang), and Mario's mother completed *The IMPACT Language Function Rating Scale*.

Clinician Observations while completing the rating scale

The clinician observed Mario on four separate occasions - in his classroom (two times), during physical education (PE) class, and at lunch. During the first classroom observation, the clinician observed Mario and his classmates reading the novel *Holes* (Louis Sachar, 1998). The class took turns reading, and as Mario's turn came closer, he was seen shuffling in his seat. When the teacher said, "Mario, it's your turn to continue," Mario looked up at the teacher and said, "I lost where we are." The teacher then pointed to

the paragraph is his book and Mario cleared his throat and began to read his two paragraphs. The teacher reminded Mario to take his time while he read and she helped him sound out four words. After chapter 4 reading was complete, the teacher went around the room and asked questions about chapter 3 and chapter 4. Mario did not raise his hand to volunteer any answers and shifted his eyes away from his classmates. Mario was also observed looking down at his desk and not engaging with his classmates. When called upon by his teacher, Mario was unable to answer "wh-" questions that involved characters or setting, and he was unable to answer "why" questions. His answers contained words such as "thing" or "stuff." It appeared he did not have the correct vocabulary words to describe what he wanted to, so he overused these words instead.

Later on that day, the clinician observed Mario playing a game of kickball with his friends during PE class. He seemed relaxed and comfortable with his group of friends. Mario was observed initiating and continuing conversations with his peers, smiling, laughing, and enjoying the game with his friends.

The next day, the clinician stopped by the classroom during a science lesson. Mario appeared lost and confused. The teacher checked in with Mario and a few other students and encouraged the whole class to ask questions as the lesson continued. After explaining a concept, the teacher asked all the students to make a prediction based off the information she provided. Mario was unable to offer an appropriate prediction.

The next observation took place at lunchtime. Mario was observed ordering his lunch meal and meeting his friends at the table they sit at. Mario engaged in this routine behavior very easily. When he got to the lunch table, he was able to talk to his friends and appeared to look comfortable and relaxed.

The last of the observations took place in the SLP's office. The SLP completed formal assessments with Mario and delves a little deeper into some of the questions on the rating scale. She asked Mario how he liked the novel they were reading in Mrs. Yang's class. Mario explained he was having difficulty understanding what was happening. Some parts were making sense but other parts he felt confused and lost. Mario said he felt like his peers were "getting it" and he was not. He didn't know why he doesn't understand, he said, he pays attention, listens and reads along the best he can.

Results of the IMPACT Language Functioning Rating Scale

The SLP gathered the *IMPACT Language Functioning Rating Scale* data from Mrs. Yang and Mario's mother and inputted her own rating scale observations on the *Video Assessment Tools* website. The IMPACT calculator indicated that there was a significant impact, meaning that Mario's language impairment is indicative of/significant enough to affect everyday communication, academic performance, and social interactions.

Intervention Planning

Mario has qualified for speech and language services and his SLP is preparing potential goals to address in therapy. After reviewing the results of her formal assessments and results from the *IMPACT Language Functioning Rating Scale*, the SLP knows that there needs to be a focus on vocabulary and spoken language comprehension (listening and reading). The SLP is now better prepared to create potential goals and present an intervention plan to Mario's IEP team members. With the help of the *IMPACT Language Functioning Rating Scale*, the SLP is able to explain Mario's strengths and weaknesses, as well as how his weaknesses impact his academics and social interactions in the classroom.

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