

ASSESSMENT OF

Story Comprehension



MANUAL



Trina D. Spencer
Howard Goldstein

Assessment of Story Comprehension (ASC™)

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by

Trina D. Spencer, Ph.D., BCBA-D

and

Howard Goldstein, Ph.D., CCC-SLP

University of South Florida
Tampa

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Contents

About the Downloads.....	vii
About the Authors	ix
Acknowledgments	x
Chapter 1 Introduction to the Assessment of Story Comprehension.....	1
Language and Reading Comprehension	2
Purposes of the ASC and Curriculum-Based Measurement.....	5
Technical Adequacy.....	6
Organization of the ASC Manual.....	10
Chapter 2 Overview of the Assessment of Story Comprehension	13
What Is the ASC?.....	13
ASC Stories.....	13
ASC Questions	15
Chapter 3 Administering the Assessment of Story Comprehension	17
Qualifications and Training of Examiners	17
Frequency and Timing of the ASC	18
Materials and Setting	20
Building Rapport and Managing Behaviors.....	21
Specific Administration Guidelines	21
Chapter 4 Scoring the Assessment of Story Comprehension.....	27
Terms to Know	27
General Rules and Scoring Tips.....	29
Scoring Tips by Item	30
Frequently Asked Scoring Questions	32
Establishing and Maintaining Scoring Reliability.....	33
Appendix Extended Scoring Guides	35
Chapter 5 Using the Results of the Assessment of Story Comprehension.....	53
Interpretation of ASC Scores	53
Special Populations	53
Sharing Results	54
Linking to Intervention	55
Appendix A Basic Scoring Guides.....	61
Appendix B Fidelity Checklists	69
Appendix C Practice Sets 1 and 2.....	77
References.....	127
Index.....	131



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About the Authors

Trina D. Spencer, Ph.D., BCBA-D, Associate Professor, Rightpath Research and Innovation Center, Department of Child and Family Studies, University of South Florida, 13301 Bruce B. Downs Boulevard, MHC 1719, Tampa, FL 33612

Trina Spencer is Associate Professor at the University of South Florida in the Department of Child and Family Studies. She earned a specialist degree in school psychology and a Ph.D. in disability disciplines from Utah State University, with emphases in language and literacy and early childhood special education. She has been a Board-Certified Behavior Analyst since 2001. For more than 18 years, Dr. Spencer has worked with culturally, linguistically, and economically diverse children as well as children with disabilities, their teachers, and their families. She has published 37 articles in peer-reviewed journals; five book chapters; and 22 non-peer reviewed articles, briefs, or encyclopedia entries. Her publications and editorial service span a number of disciplines, including speech-language pathology, applied behavior analysis, early childhood education, special education, applied linguistics, and school psychology. Benefiting from strong collaborations with practitioners and other researchers, Dr. Spencer maintains a spirited research agenda to improve reading comprehension and academic outcomes of the nation's most vulnerable students. Specifically, she has developed dynamic screening, curriculum-based measurement, and intervention tools so that schools can implement an efficient multi-tiered system of language support to complement decoding efforts. Finally, Dr. Spencer promotes interdisciplinary, collaborative relationships among clinicians, educators, and researchers through an evidence-based practice framework.

Howard Goldstein, Ph.D., CCC-SLP, Associate Dean of Research and Professor of Communication Sciences and Disorders, University of South Florida, College of Behavioral and Community Sciences, 13301 Bruce B. Downs Boulevard, MHC 1121, Tampa, FL 33612

Howard Goldstein is Associate Dean of Research and Professor of Communication Sciences and Disorders in the College of Behavioral and Community Sciences at the University of South Florida in Tampa. He is a certified speech-language pathologist. His contributions to the field were recognized as a Fellow of the American Speech-Language-Hearing Association (ASHA) in 1989 and honors of ASHA in 2016. He has served ASHA as a member, site visitor, and trainer; he also has chaired a number of task forces and committees related to treatment efficacy, the Ph.D. shortage in the field, practice and policies related to developmental disabilities, academic issues and accreditation, and clinical practice research. Dr. Goldstein was ASHA Vice President for Science and Research, 2013–2015. He currently chairs the Clinical Research, Implementation Science, and Evidence-Based Practice committee and serves on the ASHA Journals Advisory Board.

Dr. Goldstein is a nationally known scholar for his research in the field of child language intervention. His research has sought to improve the communication and social skills of children with autism and other developmental disabilities. His recent work has sought to enhance the language and literacy development of students in high-poverty schools who are at high risk for language and reading disabilities. He has authored two books and more than 125 scholarly journal articles and book chapters. Dr. Goldstein has participated in more than 40 research and personnel preparation grants, and he has served as Principal Investigator for more than 30 sponsored projects and on numerous editorial boards and grant review panels.

CHAPTER 1

Introduction to the Assessment of Story Comprehension

Reading comprehension is one of the most important skills for success in school and relies on decoding and language comprehension (see Figure 1.1) (Gough & Tunmer, 1986; Hoover & Gough, 1990; Storch & Whitehurst, 2002; Tunmer & Hoover, 1992).

Decoding consists of sounding out words using phonics and whole word recognition strategies. Alphabet knowledge, print knowledge, and phonological awareness are the fundamental components that emerge in early childhood (Scarborough, 2001; Storch & Whitehurst, 2002). Language comprehension joins with decoding to ensure understanding of written material and depends on a number of interrelated skills, such as vocabulary knowledge, inference making, knowledge of syntax and grammar, and background knowledge (Scarborough, 2001; Storch & Whitehurst, 2002). Although most people are able to master decoding and decoding-related skills such as phonological awareness within a few years, the development of language comprehension begins at birth (and possibly earlier) and continues into adulthood. People are always learning new vocabulary and gaining experiences that enhance their understanding of various content, all of which sharpens their ability to make inferences that ultimately facilitate learning (Paris, 2005). Figure 1.2 shows how the different interrelated skills involved in decoding and language comprehension come together to make reading comprehension possible.

Unfortunately, too many children struggle to understand what they read. For example, more than 60% of fourth graders read below grade level, and the proportion of students performing poorly on national reading tests is closer to 80% for culturally and linguistically diverse subgroups (National Center for Education Statistics, 2015). Similar patterns of reading achievement have been present for decades, and only small gains in reading comprehension have been observed. Explicitly teaching alphabet knowledge, print concepts, and phonological awareness in early childhood settings so that children begin kindergarten ready to read (decode) is one strategy to improve reading outcomes among children in the United States. As a result, considerable attention has been given to the promotion of the foundational skills of decoding in early childhood (e.g., Baillet, Repper, Murphy, Piasta, & Zettler-Greeley, 2013; Haager, Klingner, & Vaughn, 2007; Hurry & Sylva, 2007; Koutsoftas, Harmon, & Gray, 2009; VanDerHeyden, Snyder, Broussard, & Ramsdell, 2008). An increase has occurred in the development of early childhood literacy curricula, intervention programs, and assessment tools, such as Blueprint for Early Literacy (Children's Literacy Initiative, 2017), Nemours Brightstart! (Baillet et al., 2013), PATH to Literacy (Goldstein, 2016), Individual Growth and Development Indicators (Wackerle-Hollman, Schmitt, Bradfield, Rodriguez, & McConnell, 2015), and PALS-PreK (Invernizzi, Sullivan, Meier, & Swank, 2004). The promotion of language comprehension, which is the other major component of reading comprehension, is also necessary. Very little explicit instruction on language comprehension has occurred compared with decoding in schools across the United States (Dickinson, Golinkoff, & Hirsh-Pasek, 2010). A balanced focus on both decoding and language comprehension is vital for many children, especially those who are culturally and linguistically diverse.

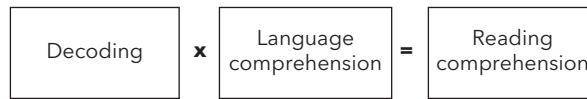


Figure 1.1. Both decoding and language comprehension are necessary components of reading comprehension. (Adapted with permission from Gough, P. and Tunmer, W. [1986]. Decoding, reading, and reading disability. *Remedial and Special Education*, 7, 6-10.)

Early childhood educators need intervention and assessment tools to help them fully embrace a balanced focus on language comprehension and decoding. A number of explicit oral language (including vocabulary and comprehension) programs have become available for use in early childhood classrooms, such as Story Friends™, Story Champs™, and Developing Talkers. The Assessment of Story Comprehension, or the ASC (pronounced “ask”), was designed to support the use of these and other oral language interventions and programs with preschoolers. The ASC measures children’s language comprehension abilities, and early childhood educators can make decisions about language interventions for young children like the ones shown in Figure 1.3. It is important to note that with appropriate and timely assessment, proper language interventions can be deployed in a manner to prepare children for the rigors of elementary school and prevent reading comprehension problems in middle childhood.

LANGUAGE AND READING COMPREHENSION

Because early language experiences are important for later reading comprehension (Dooley & Matthews, 2009), oral language promotion is an essential component of early childhood education (Dickinson, Golinkoff, & Hirsh-Pasek, 2010; Whitehurst & Lonigan, 1998). Reading comprehension cannot be the primary focus of instruction because preschool children are not yet readers. Research

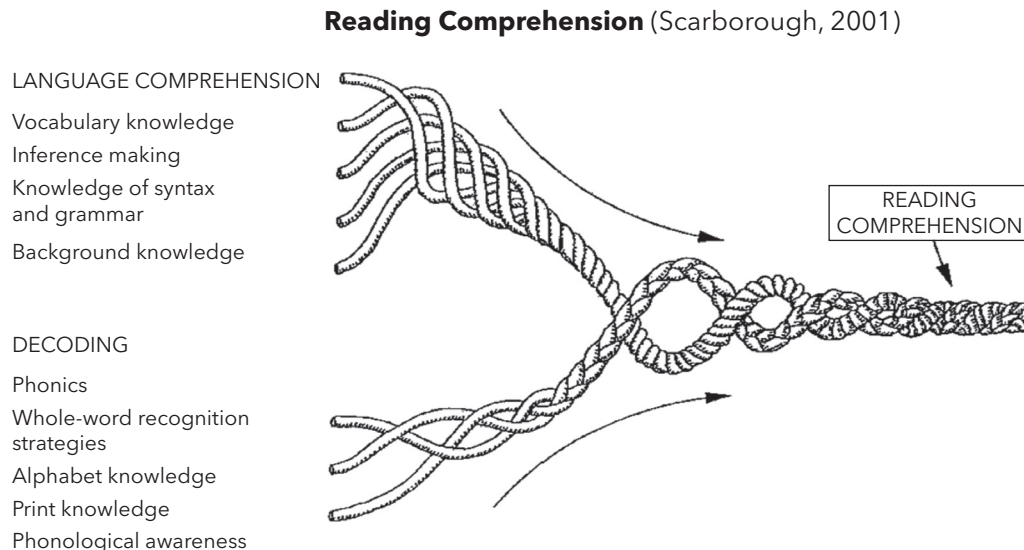


Figure 1.2. This figure is based upon Scarborough’s (2001) well-known Reading Rope model. It depicts the interrelated subskills involved in the two main components of reading comprehension—decoding and language comprehension. Decoding subskills include phonics and word recognition skills, which are grounded in alphabet knowledge, print knowledge, and phonological awareness. Language comprehension, which begins developing at birth, depends on several interrelated skills, such as vocabulary knowledge, inference making, knowledge of syntax and grammar, and background knowledge about a topic or concept. (Adapted with permission from Scarborough, H. [2001]. Connecting early language and literacy to later reading [dis]abilities: Evidence, theory and practice. In S. Newman & D. Dickinson [Eds.], *Handbook of Early Literacy Research* [pp. 97-110]. New York, NY: Guilford Press.)



Figure 1.3. Appropriate and timely assessment in the preschool years helps ensure that children will receive proper language interventions as needed to prepare them for elementary school and prevent later reading comprehension problems.

suggests, however, that language comprehension is an effective proxy of reading comprehension (Petersen, Spencer, Konishi, Sellars, & Robertson, 2018). Comprehension after listening to a story is essentially the same as comprehension after reading a story (see Figure 1.4). This means that early childhood educators who teach language comprehension are in essence also teaching reading comprehension. It is no surprise that skilled language comprehension is linked to school achievement (Bishop & Edmundson, 1987; Feagans & Appelbaum, 1986) and specifically predicts later reading comprehension (Catts, Fey, Tomblin, & Zhang, 2002; Dickinson & McCabe, 2001; Griffin, Hemphill, Camp, & Wolf, 2004).

As previously mentioned, language comprehension encompasses multiple elements, one of which is inferencing. Inferencing abilities are also central to reading comprehension (Cain & Oakhill, 1999; Cain, Oakhill, & Lemmon, 2004). Inferencing requires children to make connections between various parts of what is heard or read and connections between what is heard or read and what they know about the world (see Figure 1.5) (Cain & Oakhill, 1999; van den Broek, 1990). The numerous parts to connect make inferencing challenging, especially for children with language disabilities or cultural and linguistic differences. Children with poor language skills in early childhood are likely to have poor reading comprehension skills when they are older (Cain et al., 2004) because they struggle to make effective connections between the various parts of what they hear or read and between the various parts and their own experiences. In general, children with language disabilities have difficulty answering questions about a story (Bishop & Adams,

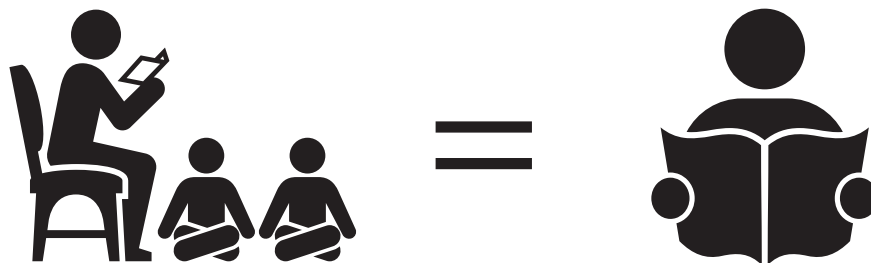


Figure 1.4. Comprehension is the same whether the child is listening to a story or reading a story.



Figure 1.5. Children make inferences—connections between various parts of what is heard or read and between what is heard or read and what they know about the world—when they listen to or read stories.

1992), but inferential questions are particularly challenging for them (Blank, Rose, & Berlin, 2003; Ford & Milsoky, 2003). Reading comprehension interventions with older children often include procedures for teaching them to make inferences. Storybook reading activities are commonly used to help younger children identify the relations between parts of the story and their knowledge of the world.

Preschool children like the ones in Figure 1.6 are often asked questions about stories. Adults use a range of literal and inferential questions to promote comprehension during reading activities with young children (van Kleeck, Gillam, Hamilton, & McGrath, 1997). Literal questions such as, *What is this?* and *What is he doing?* refer to content that is directly available in the story or illustrations. In contrast, inferential questions such as, *How do you think she feels?* *Why did he do that?* and *What do you think he will do next?* are designed to connect events in the story to information that is not directly available. Interventions with these types of questions have been shown to improve children's oral language abilities (Cain & Oakhill, 1999; Tompkins, Guo, & Justice, 2013; van Kleeck, 2008), even when parents deliver the questions (van Kleeck et al., 1997). This type of oral language promotion for younger children translates into stronger reading comprehension when they are older (Serpell, Baker, & Sonnenschein, 2005).

The development of vocabulary knowledge is also a common goal of storybook reading activities, and for good reason. Vocabulary knowledge strongly correlates with other oral language skills and specifically reading comprehension (Cunningham & Stanovich, 1997; Scarborough, 2001; Storch & Whitehurst, 2002; Tunmer & Chapman, 2012). To learn and understand a definition of a word sometimes requires using the clues available in the story and connecting them to one's own background experiences (Cain et al., 2004). Children draw from their own experiences and the information seen in pictures or heard in the story to figure out what a word means. The ability to learn new words from stories is associated with general language skills, and children with poor language skills do not readily use context and background information to acquire word meanings (Cain, Oakhill, & Elbro, 2003; Cain et al., 2004; Daneman & Green, 1986; Nippold, 2002).



Figure 1.6. Interventions in which adults ask children literal and inferential questions during reading help to promote young children's oral language development, which, in turn, leads to stronger reading comprehension.

PURPOSES OF THE ASC AND CURRICULUM-BASED MEASUREMENT

Proper assessment and regular monitoring are essential components of an effective intervention program. Assessment results help educators identify children who would benefit from additional instruction, make adjustments when needed, and determine how a child is progressing in relation to the intervention. Curriculum-based measurement (CBM) is one category of assessments that is well suited to help educators link assessment to intervention (Deno, 2003; Deno, Mirkin, & Chiang, 1982; Missall & McConnell, 2004). CBM is often used to assist educators in making data-based decisions in response to intervention (RTI) or multi-tiered system of supports (MTSS) educational models, which are becoming more common in early childhood settings (Greenwood et al., 2011, 2014). The specific functions of CBM include 1) identifying which students may benefit from additional intervention, 2) monitoring students' progress once intervention has begun, and 3) determining when curricular objectives have been achieved (Deno, 2003; Fuchs, Fuchs, Hamlett, Phillips, & Bentz, 1994). CBM is commonly used to assess decoding (Christ, Zopluoglu, Long, & Monaghan, 2012), math (Foegen, Jiban, & Deno, 2007), and writing (McMaster & Espin, 2007) and is now being applied to oral language (see Bradfield et al., 2014; Petersen & Spencer, 2012; Wackerle-Hollman, Rodriguez, Bradfield, Rodriguez, & McConnell, 2015).

Assessments must be designed in a certain way to fulfill the purposes of CBM. First, assessment tools need to measure something that society deems important. In this case, comprehension is considered a critical skill that all children need. Second, assessment tools need to have strong reliability and validity, which means they measure what they intend to measure (validity) and the assessment can be repeated with the same result (reliability). Third, assessment tools need to be time efficient and easy to use. Otherwise, the tools would not be useful to busy preschool teachers. Fourth, several parallel forms of the assessment are required. This characteristic is important because the assessment has to be repeated to monitor children's progress. If repeated testing did not result in consistent scores, then it would be impossible to attribute improvements to learning. Fifth, assessment tools need to be sensitive to the effects of an intervention and children's development. The assessment tool should be able to detect improvement in children's skills (Deno, 2003; Deno et al., 1982; Missall & McConnell, 2004). The use of several parallel forms helps make that

possible, and they can do the job quite well as long as they are valid and reliable. Research indicates that students do better in school when teachers employ CBM in their classrooms because educators are more likely to identify students in need of intervention and adjust instruction to meet students' needs (Fuchs, Deno, & Mirkin, 1984; Fuchs & Fuchs, 2007). The following characteristics are linked to CBM:

- Measures socially and academically important outcomes
- Reliable and valid
- Time efficient and easy to use
- Includes several parallel forms
- Sensitive to growth

As a CBM tool, the ASC serves three major purposes:

1. Identify children who can benefit from supplemental language intervention.
2. Monitor children's progress regularly.
3. Determine when children's language comprehension improves to a meaningful degree.

First, the ASC is designed to help educators determine which children need supplemental and intensive language intervention. Because the ASC is time efficient and easy to use, educators can assess all of the children in the class three times a year. Once all children have a score, the children who perform low on the ASC should be given supplemental language instruction. Those who receive a high ASC score do not need intervention. The second purpose is to monitor children's progress once they begin language intervention, especially if the intervention teaches vocabulary, answering questions about stories, and inference-making skills. Because there are six parallel ASC forms, one can be administered every 4–6 weeks to the children who receive intervention. Regular monitoring will help educators know if children are making progress and if instruction needs to be adjusted to maximize its effectiveness. Last, the ASC will help educators know when children's language has improved to a meaningful degree. Because the ASC is sensitive to the effects of intervention, children's scores will improve over time if the intervention is potent enough. High scores on the ASC suggest that children are ready for the language demands of kindergarten.

TECHNICAL ADEQUACY

We examined the ASC's validity and reliability with 237 preschool children. Children in this study had a mean age of 3 years, 8 months and were ethnically and racially diverse (34% Caucasian, 31% Latino/Hispanic, 18% Native American, 3% African American, 1%, Asian American, 10% Multiethnic, and 3% Other). English was the dominant language for 84% of the children, and 5% were bilingual. Nine percent of the children had an individualized education program (IEP).

The ASC had to conform to the CBM characteristics because it was intended to help identify children who need supplemental language comprehension and vocabulary intervention and monitor children's progress over time. The characteristics that are discussed next serve as an organization for the ASC's technical properties.

1. *The ASC measures an authentic and socially important outcome.* The ASC measures children's ability to comprehend stories. Children must be able to do the following to do well on the ASC: 1) understand the words and linguistic composition of the story, 2) understand the question asked, and 3) integrate background knowledge and information from the story to make inferences. The use of stories in preschools, whether presented orally or via book reading, is a common method for fostering listening comprehension and other oral language skills (e.g., vocabulary, syntax). The

interesting fact, however, is that stories are seldom used in the formative assessment of language comprehension, despite their authenticity. One-word receptive or expressive vocabulary tasks are used most often in preschool classrooms to estimate oral language growth and help identify which children need supplemental intervention (Hoffman, Teale, & Paciga, 2014). Although vocabulary is a good index for identification, it is not sufficiently sensitive to change over time and may not detect growth related to language interventions, especially those directed at broad oral language skills (as opposed to just vocabulary).

The ASC was developed to fill this need for progress monitoring of language comprehension in preschool classrooms. Careful attention was given to creating an assessment tool that was authentic and did not test language separate from child-relevant contexts. There is good evidence of concurrent validity for the ASC. We correlated the ASC with the Clinical Evaluation of Language Fundamentals: Preschool–Second Edition (CELF:P-2; Wiig, Secord, & Semel, 2004), which is a well-established, standardized norm-referenced test of general language skills. The correlation between the CELF:P-2 total raw score and the child's best ASC score was strong ($r = .81, p < .001$), suggesting that the ASC and the CELF:P-2 measure similar constructs.

2. *The ASC has multiple parallel forms for repeated sampling.* Figure 1.7 shows the parallel forms of the ASC. Parallel form reliability was examined using Pearson correlations among all forms of the ASC, which initially included nine forms. Moderate to large correlations among ASC forms ($r = .65-.83$) were observed. Examining the correlation between the best scores from three different ASC sessions for a single child close in time is another way to assess reliability. This yielded a variation of test–retest reliability, which resulted in a mean correlation of .78. The mean correlation was .78 when parallel form reliability was examined for forms that were administered within the same session, albeit a random selection of forms.

Cronbach's alphas were calculated to examine the internal consistency among all items within each form, individual items across forms, and for all items in all forms. The alpha coefficients according to ASC forms and ASC items indicate high internal consistency. The mean coefficient across the forms was .83 (range .79–.86). The mean coefficient for the eight items was .81 (range .71–.89). The overall alpha coefficient when considering all items in all forms was .83, but the alpha coefficient was .96 when totals from each of the forms were used as items. Altogether, these Cronbach's alpha statistics indicate high consistency within and across forms.

Although relative scores were consistent across forms according to Cronbach's alpha, paired samples t tests indicated that some form scores differed significantly after accounting for the repeated sampling of children across forms. Three forms that were statistically different from the others were eliminated to create a more balanced pool of six forms. There were a few differences within the remaining six ASC forms. For example, ASC Form 1 produced higher scores than ASC Forms 2 and 4, and ASC Form 3 produced higher scores than ASC Form 2. There were no statistically significant differences among the other ASC forms, indicating they are parallel. Forms that appeared to be easier (evidenced by t tests) are strategically paired with forms that may be more challenging in the final version of the ASC. Hence, the 1–2, 3–4, 5–6 grouping for fall, winter, and spring.

3. *The ASC has standardized administration and scoring procedures.* The ASC was designed to be extremely simple and easy to use. Each form has a one-page (front and back) administration protocol. Scoring is done using specific scoring guides, and results are a simple raw score calculation (see Figure 1.8). Administration of one ASC takes approximately 3–4 minutes, and scoring requires another 2–4 minutes. The fidelity of administration has been extremely high (mean = 99.6%; range = 78.6%–100%) in our empirical investigations of the ASC, indicating that it is easy to use. Scoring reliability has been examined a number of ways. First, a simple scoring agreement, which is described in the Establishing and Maintaining Scoring Reliability section in Chapter 4, has been consistently above 90% (mean = 92%; range = 52%–100%). Kappa coefficients were calculated for each of the items specifically to examine whether some items were more difficult to score reliably than others. Overall, the range of coefficients was from .60 to .94, suggesting moderate to high scoring reliability. The inferential questions had the lowest reliability coefficients, with the exception of Item 3 (causal

The figure displays six parallel forms of the Assessment of Story Comprehension (ASC) manual, arranged in a 3x2 grid. Each form is designed for repeated sampling and contains the following components:

- Form Header:** Includes the title of the story and a table for recording answers to 10 questions. The table has columns for the question number and the answer (0, 1, 2).
- Story Text:** A short story is provided for each form. The stories are:
 - Form 1: Carlos and the Big Hill** - Carlos is riding his horse back home on the sidewalk. He rides up and down the sidewalk in front of his house.
 - Form 2: Lina and Her Noisy Friend** - Lina's friend Michelle kept talking to her during naptime. What happened next?
 - Form 3: Hannah and Her Favorite Toy** - Hannah found her dad's car. She said, "My engine is damaged. It is broken." Hannah's dad said, "Don't worry. There is some glue to fix your broken toy." Hannah carefully glued the toy wing back onto her plane.
 - Form 4: Jamal and the Nice Picture** - Jamal was painting a picture of a horse. He was painting a horse that was brown and white. He was painting a horse that was brown and white.
 - Form 5: Tony and His Messy Things** - Tony was playing in a messy room. He was playing in a messy room. He was playing in a messy room.
 - Form 6: Rosa and the Shiny Slide** - Rosa was playing on a shiny slide. She was playing on a shiny slide. She was playing on a shiny slide.
- Comprehension Questions:** A series of 10 questions are provided for each story, designed to assess the child's understanding of the story. The questions are:
 - What was the story about?
 - What was the story about?
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 - What was the story about?
 - What was the story about?
- Examiner Notes:** A section for the examiner to provide feedback and notes on the child's performance.
- Scoring Table:** A table for recording the total score for each form. The table has columns for the question number and the total score.

Figure 1.7. The Assessment of Story Comprehension (ASC) has six parallel forms to allow for repeated sampling.

Introduction to the Assessment of Story Comprehension

9

1 Carlos and the Big Hill				Basic Scoring Guide			
Questions	Score	Description	Examples	Questions	Score	Description	Examples
1 What do you think will happen?	2 =	Plausible, complete, and clear	He will get hurt; he will have fun; he will climb up a hill	1 What do you think will happen?	2 =	Plausible, complete, and clear	Noisy friend will annoy her; they'll get loud; friend will be noisy
	1 =	Plausible but incomplete or unclear	Fall; fun		1 =	Plausible but incomplete or unclear	Noisy girl; be loud; she talks lots
	0 =	Unrelated or implausible	Go shopping; watch TV		0 =	Unrelated or implausible	Gonna fall; walk with sister
2 What was Carlos doing in this story?	2 =	Correct, complete, and clear	Riding his bike; playing on bike	2 What was Lina doing in this story?	2 =	Correct, complete, and clear	Trying to sleep; sleeping; taking a nap
	1 =	Correct but incomplete or unclear	Bike; falling; going down street		1 =	Correct but incomplete or unclear	Lie down; being quiet; want her friend to stop
	0 =	Incorrect; not a "where" answer	Running; crying; mad; play		0 =	Incorrect; not a "where" answer	Covered with blanket; talking
3 In this story, Carlos was sad. Why was Carlos sad?	2 =	Correct, complete, and clear	Fell off his bike; out his arm; he got hurt; him elbow bleed	3 In this story, Lina was mad. Why was Lina mad?	2 =	Correct, complete, and clear	Friend was talking; friend woke her up; somebody pulled her blanket
	1 =	Correct but incomplete or unclear	Bump; crash; bleed; hurt		1 =	Correct but incomplete or unclear	Can't sleep; it was noisy; she talked
	0 =	Incorrect	Cry; riding bike		0 =	Incorrect	Friend wouldn't talk; teacher mean
4 Carlos fell off his bike and cut his arm. What happened next?	2 =	Correct, complete, and clear	Willed home; told his mom; got a bandage	4 Lina's friend Michelle kept talking to her during naptime. What happened next?	2 =	Correct, complete, and clear; action by main character	Asked teacher to move; moved her mat; went to a dark corner
	1 =	Correct but incomplete or unclear; action by secondary character	Ran away; home; bandage; told her; mom gave a bandage		1 =	Correct but incomplete or unclear; action by secondary character	She couldn't sleep; moved it; asked teacher
	0 =	Incorrect	Cry; bleed; ride bike		0 =	Incorrect	Sleeping; talking; got mad
5 Why do you think Carlos's mom gave him a hug?	2 =	Plausible answer that incorporates story and background knowledge	Help him feel better; she loves him; moms help their kids	5 Why do you think Lina did not want to talk to Michelle?	2 =	Plausible answer that uses story and background knowledge	She was sleepy and needs rest; it's against the rules; she might get in trouble
	1 =	Answer that is in the story or includes background knowledge; characteristic	He got hurt; she's nice; he's sad		1 =	Plausible answer that uses story or background knowledge but is incomplete or unclear; characteristic	Her was sleeping; Michelle's noisy; doesn't like her
	0 =	Implausible or not an answer to the question	He was naughty; happy		0 =	Implausible or not an answer to the question	She was mad; moved to corner
6 What happened at the end of the story?	2 =	Correct, complete, and clear	He rides his bike; mom watched	6 What happened at the end of the story?	2 =	Correct, complete, and clear	Went to sleep; fell asleep; had nice dreams
	1 =	Correct but incomplete or unclear	Hill; bike again; clapped; cheered; didn't fall again		1 =	Correct but incomplete or unclear	It was dark; silent again
	0 =	Incorrect	Fall; get hurt; got a bandage		0 =	Incorrect	Talk to her friend; he fell; moved
7 The next time Carlos rides his bike, do you think he will go down a big hill? Why/why not?	2 =	Plausible answer that incorporates story or background knowledge	He will get hurt; it's fun to go fast; he will fall again; going down big hills is scary	7 Do you think Lina will put her mat next to Michelle at the next naptime? Why/why not?	2 =	Plausible answer that uses story or background knowledge	They best friends; she woke her up; she will sleep in dark side; she's too loud
	1 =	Plausible answer that uses clues from the story or background knowledge but is incomplete or unclear	Fall; he likes it; he's scared		1 =	Plausible answer that uses story or background knowledge but is incomplete or unclear; characteristic	Didn't sleep; noisy; she likes her; 'cause she mean
	0 =	Implausible or unrelated; not a "why" answer	Ride his bike; visit the neighbor		0 =	Implausible or unrelated; not a "why" answer	She sleeps too; it's dark; 'cause she want to
8a What does injure mean?	3 =	Fully accurate, synonym, definition in example	To get hurt; get cut; when you fall and get hurt	8a What does silent mean?	3 =	Fully accurate, synonym, definition in example	Quiet; be quiet and calm
	2 =	Related to story, example without definition			2 =	Related to story, example without definition	
	1 =	Correct			1 =	Correct	
	0 =	Incorrect			0 =	Incorrect	
8b Does injure mean to cook something or to hurt something?	1 =	Correct			1 =	Correct	
	0 =	Incorrect			0 =	Incorrect	

2 Lina and Her Noisy Friend				Basic Scoring Guide			
Questions	Score	Description	Examples	Questions	Score	Description	Examples
1 What do you think will happen?	2 =	Plausible, complete, and clear	Noisy friend will annoy her; they'll get loud; friend will be noisy	1 What do you think will happen?	2 =	Plausible, complete, and clear	Paint a pretty picture
	1 =	Plausible but incomplete or unclear	Noisy girl; be loud; she talks lots		1 =	Plausible but incomplete or unclear	Draw; paint
	0 =	Unrelated or implausible	Gonna fall; walk with sister		0 =	Unrelated or implausible	Play outside
2 What was Lina doing in this story?	2 =	Correct, complete, and clear	Trying to sleep; sleeping; taking a nap	2 What was Jamal doing in this story?	2 =	Correct, complete, and clear	Painting; doing art at school
	1 =	Correct but incomplete or unclear	Lie down; being quiet; want her friend to stop		1 =	Correct but incomplete or unclear	Pictures; fire truck; spelling
	0 =	Incorrect; not a "where" answer	Covered with blanket; talking		0 =	Incorrect; not a "where" answer	Say sorry; crying
3 In this story, Lina was mad. Why was Lina mad?	2 =	Correct, complete, and clear	Friend was talking; friend woke her up; somebody pulled her blanket	3 In this story, Jamal was sad. Why was Jamal sad?	2 =	Correct, complete, and clear	Messed up her picture; spilled on somebody else's painting
	1 =	Correct but incomplete or unclear	Can't sleep; it was noisy; she talked		1 =	Correct but incomplete or unclear	Spill; messed up; it's ruined
	0 =	Incorrect	Friend wouldn't talk; teacher mean		0 =	Incorrect	Cry; bint; bad
4 Lina's friend Michelle kept talking to her during naptime. What happened next?	2 =	Correct, complete, and clear; action by main character	Asked teacher to move; moved her mat; went to a dark corner	4 Jamal spilled paint on Angie's painting. What happened next?	2 =	Correct, complete, and clear; action by main character	He said sorry; put his head down; gave her his picture
	1 =	Correct but incomplete or unclear; action by secondary character	She couldn't sleep; moved it; asked teacher		1 =	Correct but incomplete or unclear; action by secondary character	Fire truck; didn't know what to do
	0 =	Incorrect	Sleeping; talking; got mad		0 =	Incorrect	Keep painting; fell bad; she cried
5 Why do you think Lina did not want to talk to Michelle?	2 =	Plausible answer that uses story and background knowledge	She was sleepy and needs rest; it's against the rules; she might get in trouble	5 Why do you think Jamal gave Angie his fire truck painting?	2 =	Plausible answer that uses story and background knowledge	Make her feel better; that's the rule
	1 =	Plausible answer that uses story or background knowledge but is incomplete or unclear; characteristic	Her was sleeping; Michelle's noisy; doesn't like her		1 =	Plausible answer that uses story or background knowledge; characteristic	He ruined hers; she's sad; he is nice; she likes them
	0 =	Implausible or not an answer to the question	She was mad; moved to corner		0 =	Implausible or not an answer to the question	He was mean; painting is fun
6 What happened at the end of the story?	2 =	Correct, complete, and clear	Went to sleep; fell asleep; had nice dreams	6 What happened at the end of the story?	2 =	Correct, complete, and clear	Made her feel better; thanked him; painted another bird
	1 =	Correct but incomplete or unclear	It was dark; silent again		1 =	Correct but incomplete or unclear	Painted; fun together; did picture
	0 =	Incorrect	Talk to her friend; he fell; moved		0 =	Incorrect	Spilled paint; said
7 Do you think Lina will put her mat next to Michelle at the next naptime? Why/why not?	2 =	Plausible answer that uses story or background knowledge	They best friends; she woke her up; she will sleep in dark side; she's too loud	7 Do you think Angie will paint with Jamal again? Why/why not?	2 =	Plausible answer that uses story or background knowledge	He apologized; they are friends
	1 =	Plausible answer that uses story or background knowledge but is incomplete or unclear; characteristic	Didn't sleep; noisy; she likes her; 'cause she mean		1 =	Plausible answer that uses story or background knowledge but is incomplete or unclear; characteristic	Picture is good; she's supposed to; messed it up; they have fun
	0 =	Implausible or unrelated; not a "why" answer	She sleeps too; it's dark; 'cause she want to		0 =	Implausible or unrelated; not a "why" answer	She's happy; she will paint; 'cause
8a What does injure mean?	3 =	Fully accurate, synonym, definition in example	To get hurt; get cut; when you fall and get hurt	8a What does apologize mean?	3 =	Fully accurate, synonym, definition in example	To say sorry; sorry when you mess something up and say you're sorry
	2 =	Related to story, example without definition			2 =	Related to story, example without definition	Talk to friends; said
	1 =	Correct			1 =	Correct	To say sorry
	0 =	Incorrect			0 =	Incorrect	To ask a question
8b Does injure mean to cook something or to hurt something?	1 =	Correct			1 =	Correct	
	0 =	Incorrect			0 =	Incorrect	

3 Hannah and Her Favorite Toy				Basic Scoring Guide			
Questions	Score	Description	Examples	Questions	Score	Description	Examples
1 What do you think will happen?	2 =	Plausible, complete, and clear	She will break her toy; play with the toy; go to toy store	1 What do you think will happen?	2 =	Plausible, complete, and clear	Paint a pretty picture
	1 =	Plausible but incomplete or unclear	Play; have toy; have fun		1 =	Plausible but incomplete or unclear	Draw; paint
	0 =	Unrelated or implausible	Find a mouse; ride bike		0 =	Unrelated or implausible	Play outside
2 What was Hannah doing in this story?	2 =	Correct, complete, and clear	Packing up; getting ready for school; packed folders and pencils	2 What was Jamal doing in this story?	2 =	Correct, complete, and clear	Painting; doing art at school
	1 =	Correct but incomplete or unclear	Going to school; putting books; pack; breaking things		1 =	Correct but incomplete or unclear	Pictures; fire truck; spelling
	0 =	Incorrect; not a "where" answer	Assemble got broke; play with toy		0 =	Incorrect; not a "where" answer	Say sorry; crying
3 In this story, Hannah was sad. Why was Hannah sad?	2 =	Correct, complete, and clear	Her airplane broke; the wing broke off; book broke her plane	3 In this story, Jamal was sad. Why was Jamal sad?	2 =	Correct, complete, and clear	Messed up her picture; spilled on somebody else's painting
	1 =	Correct but incomplete or unclear	Was her favorite; crunched it; wanted to make her plane; broke it		1 =	Correct but incomplete or unclear	Spill; messed up; it's ruined
	0 =	Incorrect	Didn't want to go to school; sad		0 =	Incorrect	Cry; bint; bad
4 Hannah's favorite toy broke. What happened next?	2 =	Correct, complete, and clear; action by main character	Put the glue on; asked her dad; fixed the wing	4 Jamal spilled paint on Angie's painting. What happened next?	2 =	Correct, complete, and clear; action by main character	He said sorry; put his head down; gave her his picture
	1 =	Correct but incomplete or unclear; action by secondary character	Got fixed; told him; said it broke; dad gave her glue; got help		1 =	Correct but incomplete or unclear; action by secondary character	Fire truck; didn't know what to do
	0 =	Incorrect	Go to school; packed a book; run		0 =	Incorrect	Keep painting; fell bad; she cried
5 Why do you think Hannah's dad helped her fix her toy?	2 =	Plausible answer that uses story and background knowledge	She couldn't fix herself; dad's like to help; to make her feel better	5 Why do you think Jamal gave Angie his fire truck painting?	2 =	Plausible answer that uses story and background knowledge	Make her feel better; that's the rule
	1 =	Plausible answer that uses story or background knowledge; characteristic	It was damaged; wanted to take it to school; he's nice; he knows how to; she was sad		1 =	Plausible answer that uses story or background knowledge; characteristic	He ruined hers; she's sad; he is nice; she likes them
	0 =	Implausible or not an answer to the question	With some glue; he wanted to		0 =	Implausible or not an answer to the question	He was mean; painting is fun
6 What happened at the end of the story?	2 =	Correct, complete, and clear	Put it on the dresser; let the glue dry; it was like new	6 What happened at the end of the story?	2 =	Correct, complete, and clear	Made her feel better; thanked him; painted another bird
	1 =	Correct but incomplete or unclear	Put so it dries; it's fixed		1 =	Correct but incomplete or unclear	Painted; fun together; did picture
	0 =	Incorrect	She glue; told her dad; happy		0 =	Incorrect	Spilled paint; said
7 Do you think Hannah will still take her toy plane her school? Why/why not?	2 =	Plausible answer that uses story or background knowledge	The wing has to dry; the glue will be dry; she will break it again; it's fixed; it's her favorite	7 Do you think Angie will paint with Jamal again? Why/why not?	2 =	Plausible answer that uses story or background knowledge	He apologized; they are friends
	1 =	Plausible answer that uses story or background knowledge but is incomplete or unclear; characteristic	It's okay; likes it; wants to show it; it's cool; she's careful; she has to		1 =	Plausible answer that uses story or background knowledge but is incomplete or unclear; characteristic	Picture is good; she's supposed to; messed it up; they have fun
	0 =	Implausible or unrelated; not a "why" answer			0 =	Implausible or unrelated; not a "why" answer	She's happy; she will paint; 'cause
8a What does injure mean?	3 =	Fully accurate, synonym, definition in example	To get hurt; get cut; when you fall and get hurt	8a What does apologize mean?	3 =	Fully accurate, synonym, definition in example	To say sorry; sorry when you mess something up and say you're sorry
	2 =	Related to story, example without definition			2 =	Related to story, example without definition	Talk to friends; said
	1 =	Correct			1 =	Correct	To say sorry
	0 =	Incorrect			0 =	Incorrect	To ask a question
8b Does injure mean to cook something or to hurt something?	1 =	Correct			1 =	Correct	
	0 =	Incorrect			0 =	Incorrect	

4 Jamal and the Nice Picture				Basic Scoring Guide			
Questions	Score	Description	Examples	Questions	Score	Description	Examples
1 What do you think will happen?	2 =	Plausible, complete, and clear	Paint a pretty picture	1 What do you think will happen?	2 =	Plausible, complete, and clear	Paint a pretty picture
	1 =	Plausible but incomplete or unclear	Draw; paint		1 =	Plausible but incomplete or unclear	Draw; paint
	0 =	Unrelated or implausible	Play outside		0 =	Unrelated or implausible	Play outside
2 What was Jamal doing in this story?	2 =	Correct, complete, and clear	Painting; doing art at school	2 What was Jamal doing in this story?	2 =	Correct, complete, and clear	Painting; doing art at school
	1 =	Correct but incomplete or unclear	Pictures; fire truck; spelling		1 =	Correct but incomplete or unclear	Pictures; fire truck; spelling
	0 =	Incorrect; not a "where" answer	Say sorry; crying		0 =	Incorrect; not a "where" answer	Say sorry; crying
3 In this story, Jamal was sad. Why was Jamal sad?	2 =	Correct, complete, and clear	Messed up her picture; spilled on somebody else's painting	3 In this story, Jamal was sad. Why was Jamal sad?	2 =	Correct, complete, and clear	Messed up her picture; spilled on somebody else's painting
	1 =	Correct but incomplete or unclear	Spill; messed up; it's ruined		1 =	Correct but incomplete or unclear	Spill; messed up; it's ruined
	0 =	Incorrect	Cry; bint; bad		0 =	Incorrect	Cry; bint; bad
4 Jamal spilled paint on Angie's painting. What happened next?	2 =	Correct, complete, and clear; action by main character	He said sorry; put his head down; gave her his picture	4 Jamal spilled paint on Angie's painting. What happened next?	2 =	Correct, complete, and clear; action by main character	He said sorry; put his head down; gave her his picture
	1 =	Correct but incomplete or unclear; action by secondary character	Fire truck; didn't know what to do		1 =	Correct but incomplete or unclear; action by secondary character	Fire truck; didn't know what to do
	0 =	Incorrect	Keep painting; fell bad; she cried		0 =	Incorrect	Keep painting; fell bad; she cried
5 Why do you think Jamal gave Angie his fire truck painting?	2 =	Plausible answer that uses story and background knowledge	Make her feel better; that's the rule	5 Why do you think Jamal gave Angie his fire truck painting?	2 =	Plausible answer that uses story and background knowledge	Make her feel better; that's the rule
	1 =	Plausible answer that uses story or background knowledge; characteristic	He ruined hers; she's sad; he is nice; she likes them		1 =	Plausible answer that uses story or background knowledge; characteristic	He ruined hers; she's sad; he is nice; she likes them
	0 =	Implausible or not an answer to the question	He was mean; painting is fun		0 =	Implausible or not an answer to the question	He was mean; painting is fun
6 What happened at the end of the story?	2 =	Correct, complete, and clear	Made her feel better; thanked him; painted another bird	6 What happened at the end of the story?	2 =	Correct, complete, and clear	Made her feel better; thanked him; painted another bird
	1 =	Correct but incomplete or unclear	Painted; fun together; did picture		1 =	Correct but incomplete or unclear	Painted; fun together; did picture
	0 =	Incorrect	Spilled paint; said		0 =	Incorrect	Spilled paint; said
7 Do you think Angie will paint with Jamal again? Why/why not?	2 =	Plausible answer that uses story or background knowledge	He apologized; they are friends	7 Do you think Angie will paint with Jamal again? Why/why not?	2 =	Plausible answer that uses story or background knowledge	He apologized; they are friends
	1 =	Plausible answer that uses story or background knowledge but is incomplete or unclear; characteristic	Picture is good; she's supposed to; messed it up; they have fun		1 =	Plausible answer that uses story or background knowledge but is incomplete or unclear; characteristic	Picture is good; she's supposed to; messed it up; they have fun
	0 =	Implausible or unrelated; not a "why" answer	She's happy; she will paint; 'cause		0 =	Implausible or unrelated; not a "why" answer	She's happy; she will paint; 'cause
8a What does apologize mean?	3 =	Fully accurate, synonym, definition in example	To say sorry; sorry when you mess something up and say you're sorry	8a What does apologize mean?	3 =	Fully accurate, synonym, definition in example	To say sorry; sorry when you mess something up and say you're sorry
	2 =	Related to story, example without definition	Talk to friends; said		2 =	Related to story, example without definition	Talk to friends; said
	1 =	Correct	To say sorry		1 =	Correct	To say sorry
	0 =	Incorrect	To ask a question		0 =	Incorrect	To ask a question
8b Does apologize mean to cook something or to hurt something?	1 =	Correct		8b Does apologize mean to cook something or to hurt something?	1 =	Correct	
	0 =	Incorrect			0 =	Incorrect	

5 Tony and His Messy Things				Basic Scoring Guide			
Questions	Score	Description	Examples	Questions	Score	Description	Examples
1 What do you think will happen?	2 =	Plausible, complete, and clear	He will have to clean up	1 What do you think will happen?	2 =	Plausible, complete, and clear	She will slide and climb
	1 =	Plausible but incomplete or unclear	A mess; his things get messy		1 =	Plausible but incomplete or unclear	Play on it; get hurt
	0 =	Unrelated or implausible	Ride a bike; read a story		0 =	Unrelated or implausible	It will get dark
2 Where did Tony want to play?	2 =	Correct, complete, and clear	His house	2 Where did Rosa and her friend Shane go in this story?	2 =	Correct, complete, and clear	Playground; park
	1 =	Correct but incomplete or unclear	Friend's house; with the racetrack		1 =	Correct but incomplete or unclear	To a little slide place; playing outside
	0 =	Incorrect; not a "where" answer	Friend had to leave; more was mean		0 =	Incorrect; not a "where" answer	Home; pushed her
3 In this story, Tony was mad. Why was Tony mad?	2 =	Correct, complete, and clear	He didn't want to clean up; his mom said to clean; his friend couldn't come over	3 In this story, Rosa was mad. Why was Rosa mad?	2 =	Correct, complete, and clear	He gave her a big push; she barged her knees
	1 =	Correct but incomplete or unclear	Friend had to leave; more was mean		1 =	Correct but incomplete or unclear	Got hurt; he stomped her; he didn't listen to her
	0 =	Incorrect	His friend was mean; he was teased		0 =	Incorrect	Yelled at him; she cried
4 Tony's mom told him to put away his things. What happened next?	2 =	Correct, complete, and clear; action by main character	Picked up his things; decided clean room is fun; cleaned	4 Rosa banged her knees on the ground. What happened next?	2 =	Correct, complete, and clear; action by main character	She yelled at her friend; said "it's not nice to push"; talked friend to give little push
	1 =	Correct but incomplete or unclear; action by secondary character	Harmed; helped his mom; he did it		1 =	Correct but incomplete or unclear; action by secondary character	Yelled; said to him; said he didn't mean to
	0 =	Incorrect	Got mad; showed his racetrack		0 =	Incorrect	Fell on ground; mad; cried
5 Why do you think Tony's mom told him to clean his room first?	2 =	Plausible answer that uses story and background knowledge	Supposed to keep your room clean; you should clean up when someone comes over	5 Why do you think Rosa told Shane not to shove?	2 =	Plausible answer that uses story and background knowledge	Pushing hurts people; she doesn't want to fall; it's dangerous to push hard
	1 =	Plausible answer that uses story or background knowledge; characteristic	Friend coming over; room was messy; she likes it to be clean		1 =	Plausible answer that uses story or background knowledge; characteristic	It was mean; she was mad; he pushed her too hard; didn't like it; she always yells
	0 =	Implausible or not an answer to the question	He likes to clean; made him mad; he wanted to; she wanted him to		0 =	Implausible or not an answer to the question	She was going fast; they are friends
6 What happened at the end of the story?	2 =	Correct, complete, and clear	His friend came over; his room was all clean; played with racetrack	6 What happened at the end of the story?	2 =	Correct, complete, and clear	

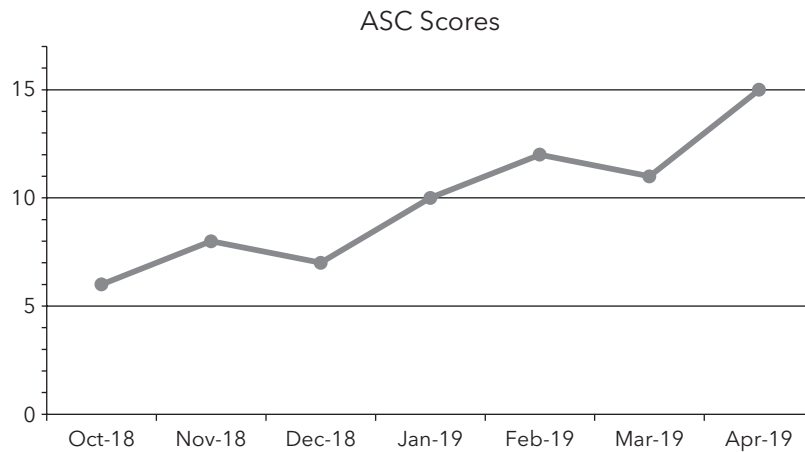


Figure 1.9. An example of how a child's scores on successive administrations of the Assessment of Story Comprehension (ASC) might improve following an intervention.

relationship between problem and feeling), whereas the definitional vocabulary item had the highest coefficient. Intraclass correlation coefficients (ICCs) show that, on average, 86% of the variation between item scores was due to differences between children, as opposed to differences between raters. Ranging from 75% for Item 5 to 94% for Item 8b, these high ICCs indicate the ASC is reliably measuring child behaviors.

4. *The ASC is sensitive to growth related to language intervention.* Two intervention studies have shown effects on the ASC related to a story-based supplemental language intervention with preschoolers. The *Story Friends* curriculum was used in one study (Kelley, Goldstein, Spencer, & Sherman, 2015), and the statistically significant outcome was detected, but only for the inferential questions of the ASC. This is not surprising because the *Story Friends* curriculum explicitly targets how to answer inferential questions but not recall questions. A narrative retelling intervention in a second study was delivered in whole-class, small-group, and individual arrangements within classrooms for approximately 7 months. The ASC was administered in the fall before language interventions began and again in the winter and spring. Students in the treatment classrooms scored significantly better than the students in the control classrooms on the ASC in the winter and spring assessment waves with medium effect sizes (Spencer, Weddle, Petersen, & Adams, 2018). Figure 1.9 shows an example of how a child's scores on successive administrations of the ASC might improve following an intervention.

ORGANIZATION OF THE ASC MANUAL

The remainder of this manual is designed to help educators learn the core features of the ASC, how to administer it, how to score children's answers to the questions, and how to interpret and use the results to link to intervention. Chapter 2 focuses on the construction of the ASC stories and questions, which had to be developed with great care to properly assess language comprehension. A description of these major features and how they were constructed is included. The standardized administration procedures are detailed in Chapter 3. It is essential that the ASC is delivered consistently; otherwise, it is impossible to know if children's scores are accurate. The administration is straightforward, and examiners use the provided scripts to make sure every story is read accurately and the questions are delivered exactly the way they were intended. Fidelity checklists are included in Appendix B of this manual so that the ASC administration can be trained and monitored. Chapter 4 covers the scoring procedures. Scoring children's responses to questions can be a bit challenging because they do not always give clear answers. We have developed a number of scoring guides

to assist examiners, including basic and extended scoring guides. The extended scoring guides are included in the Chapter 4 appendix. With some time and practice, however, examiners may no longer need the extended scoring guides. Therefore, basic scoring guides are included in Appendix A of the manual to serve as a quicker reference when needed. Chapter 5 includes guidelines for interpreting and using the results of the ASC to inform instruction. We have included a few case examples to illustrate the way in which the ASC can be used in preschool classrooms.

As previously noted, the Chapter 4 appendix and Appendixes A and B of the manual provide extended scoring guides, basic scoring guides, and fidelity checklists. In addition, Appendix C of the manual includes two sets of practice ASCs. These are ASCs that have been administered but not scored and are intended to help train new examiners to score the ASC reliably. Practice Set 1 is designed for use in training new examiners who have no prior experience with the ASC. It includes all six forms with sample child responses for use in practicing scoring; it also includes a key showing how a trained examiner would score these responses and an explanation for difficult-to-score responses. Practice Set 2 is intended for training new examiners who have previously completed Practice Set 1 and includes the sample child responses and key but not the additional explanations for difficult-to-score items.



Strong listening comprehension during shared storybook reading is a foundational skill—and an indicator that children are ready for the language demands of kindergarten. With the **Assessment of Story Comprehension (ASC™)**, pre-K programs can now measure the story comprehension of children ages 3–5, identify children who may need language intervention, monitor progress, and determine when comprehension has meaningfully improved. Sensitive to even small gains that young learners make as the school year progresses, the ASC—**with its 3-minute administration time**—is the quick, reliable check programs need to assess comprehension.

Highly valid and reliable, the ASC is the key to assessing and improving an essential building block of reading success and school readiness. Use it on its own as a fast, efficient check—or in tandem with the other products in the MILLIE™ (Multitiered Interventions for Language & Literacy in Early Childhood) family.

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—Timothy Shanahan, Ph.D., Chair, National Early Literacy Panel, Distinguished Professor Emeritus, University of Illinois at Chicago



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This book is your comprehensive guide to the ASC. You'll get

- An introduction to the tool, its development, and its supporting research
- Detailed administration guidelines, including sample schedules for administering the ASC
- General and item-specific scoring guidelines
- Fidelity checklists and guidance on establishing and maintaining reliability
- A guide to interpreting scores, including typical score ranges for children ages 3–4 and 4–5
- Two practice sets of materials for use in training examiners

Learn more about **ASC** at

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ABOUT THE **ASC** DEVELOPERS:



Trina D. Spencer, Ph.D., BCBA-D, is Associate Professor at the University of South Florida in the Department of Child and Family Studies. For more than 18 years, Dr. Spencer has worked with culturally, linguistically, and economically diverse children as well as children with disabilities, their teachers, and their families.



Howard Goldstein, Ph.D., CCC-SLP, is Associate Dean of Research and Professor of Communication Sciences and Disorders in the College of Behavioral and Community Sciences at the University of South Florida in Tampa. Dr. Goldstein is a nationally known scholar for his research in the field of child language intervention.

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