# Learning Disabilities and Challenging Behaviors

## Using the Building Blocks Model to Guide Intervention and Classroom Management

## Third Edition

by

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# About the Authors

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Dr. Mather is a professor at the University of Arizona in the Department of Disability and Psychoeducational Studies. She specializes in the areas of reading, writing, and learning disabilities. She has conducted numerous workshops and presentations both nationally and internationally on assessment, instruction, and issues that affect service delivery for individuals with learning disabilities. She has written many books and articles on topics and issues in the field. Dr. Mather is a coauthor, along with Dr. Fredrick A. Schrank and Dr. Kevin S. McGrew, of the Woodcock-Johnson IV Tests of Cognitive Abilities (WJ IV; Riverside, 2014). Dr. Mather has also coauthored two books on interpretation and application of the WJ IV: *Woodcock-Johnson IV: Recommendations, Reports, and Strategies* with Dr. Lynne E Jaffe (Wiley, in press) and *Essentials of WJ IV Tests of Achievement Assessment* with Barbara J. Wendling (Wiley, in press). In addition, she has coauthored *Essentials of Dyslexia: Assessment and Intervention* with Barbara J. Wendling (Wiley, 2012).

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Dr. Eklund is an assistant professor in the School Psychology Program at the University of Arizona. She received her doctorate in counseling, clinical, and school psychology from the University of California, Santa Barbara. Dr. Eklund has worked in public education for 14 years as a school administrator, school psychologist, and school social worker and is a Nationally Certified School Psychologist and licensed psychologist. Dr. Eklund has authored a number of publications on childhood risk and resiliency factors, including early identification and intervention for behavioral and emotional concerns, school climate, and positive psychology. Her teaching interests include school-based academic and behavioral interventions, crisis response and intervention, and school-based consultation and problem-solving skills.

This is not a typical introductory textbook about specific learning disabilities (SLD) and classroom behavior problems. Although various learning and behavior problems are explained and informal ways to assess these difficulties are described, the main focus of this text is on identifying the developmental, learning, and behavior skills of children and then determining the practical strategies and techniques that will be most effective in helping them succeed in school. As illustrated by the brief descriptions of these students, each child has an individual style of learning and a unique set of circumstances. Increased awareness and understanding of a child's unique profile of strengths and weaknesses can help educators improve school-related outcomes.
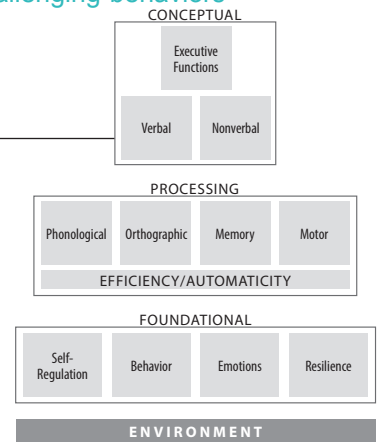
## BUILDING BLOCKS OF LEARNING

When a child struggles in school, teachers must first determine the underlying factors contributing to the learning or behavior problem, because when a child acts out, the reason may not be readily apparent. Similarly, when a child fails or refuses to complete work, it is rarely because of poor motivation. Lowered motivation in students is often a secondary symptom resulting from chronic failure and school difficulties. Over many years of working with students, school psychologists, special and general education teachers, and parents, we have developed and revised a simple framework for explaining why children experience learning and behavior problems in the classroom. This framework is called the Building Blocks of Learning (Goldstein & Mather, 1998). Although similar in intent to our original framework, this third edition contains an updated model and a revised questionnaire.

Our efforts to develop a working model of classroom problems and the reasons they occur, combined with our professional experiences, led us to conclude that the classroom behavior and learning problems of children could be represented using a three-level, triangular framework with the bottom of the triangle reflecting foundational skills, the middle of the triangle representing processing or perceptual skills, and the top of the triangle representing conceptual or thinking skills. The remainder of this chapter introduces the Building Blocks of Learning model. Chapter 2 reviews the theoretical foundations for the model.

Although the model has not yet undergone large-scale evaluation, we believe it is consistent with both past and present research and with the observations and reports from parents, teachers, and specialists throughout the years. The model offers a bridge between research and educational practice. Its intent is to help educators increase their understanding of the various reasons why children struggle in school and, more important, the ways in which professionals can help these students.

This model, presented in Figure 1.2, contains 12 Building Blocks stacked into the shape of a pyramid. At the base of the pyramid is the learning environment—an external variable that includes a child's home and classroom environments. The 12 blocks of the pyramid are divided into three distinct groups. At the base are the four Foundational blocks: *Self-Regulation, Behavior, Emotions,* and *Resilience.* The middle level contains a set of four Processing blocks: *Phonological, Orthographic, Memory,* and *Motor.* Underlying these four blocks is a support block: *Efficiency/Automaticity.* Automatic and easy processing facilitates all learning. The top level contains three Conceptual blocks: *Verbal,* for thinking with language; *Nonverbal,* for thinking with images and spatial reasoning; and *Executive Functions,* the top block, for thinking with strategies. The abilities in the Processing and Conceptual blocks affect different aspects of academic performance and learning.
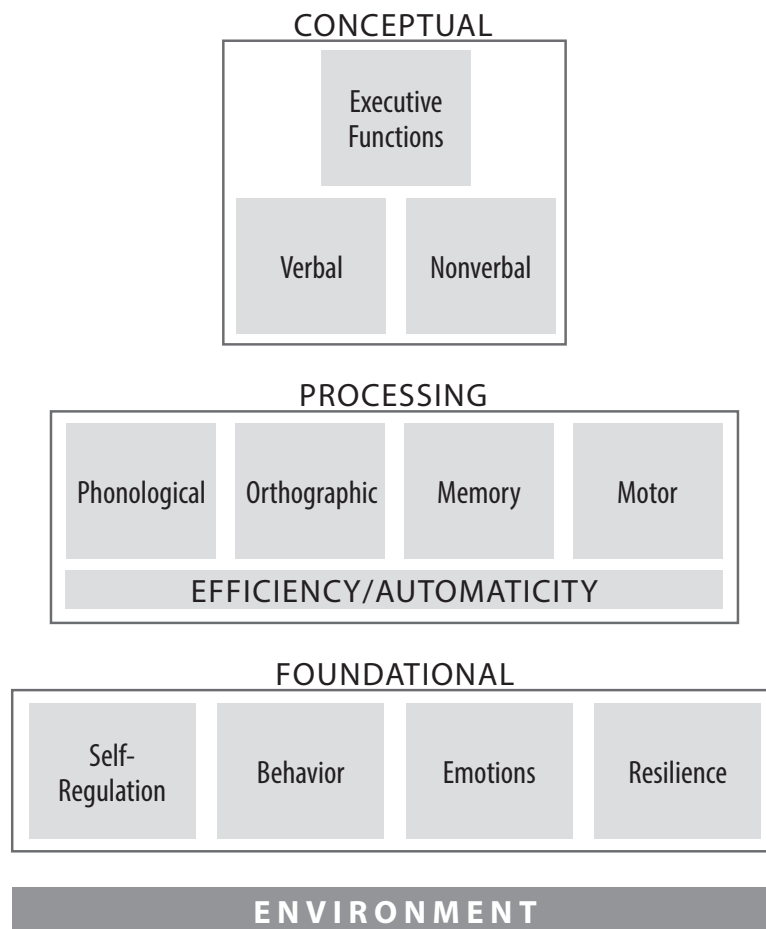
CONCEPTUAL

Executive
Functions

Verbal

Nonverbal

PROCESSING

Phonological

Orthographic

Memory

Motor

EFFICIENCY/AUTOMATICITY

FOUNDATIONAL

Self-
Regulation

Behavior

Emotions

Resilience

**ENVIRONMENT**

**Figure 1.2.**   The Building Blocks of Learning model.

Many of the most common classroom learning and behavior problems can be represented clearly, described, and subsequently understood through the use of this model. We acknowledge that not all important school abilities are accounted for in this model; we also recognize that these blocks are not discrete units but rather encompass interrelated factors and abilities. Certain abilities do not fit neatly into one block, and some degree of overlap exists among the abilities in different blocks. For example, aspects of morphology, the meaning units of language, are relevant to the Phonological and Orthographic blocks, such as the skills needed to decode multisyllabic words by breaking words apart into prefixes, roots, and suffixes. Other aspects of morphology are more related to the Verbal block, such as how knowledge of the meaning of word parts can influence vocabulary development. The Memory block really affects all types of learning and is involved in the Processing blocks, as well as extending into all the Conceptual blocks. Different demands are placed on memory depending on the nature of the task. Working memory is involved in the earlier perceptual processes but also in the network of executive functions (Gathercole & Holmes, 2014). For example, memory is involved in learning multiplication facts or following the series of steps in a long division problem (Processing blocks) but also involved in retelling a story or planning a strategy to solve a problem (Conceptual blocks). As another example, some overlap exists among

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CONCEPTUAL

Executive Functions

Verbal | Nonverbal

PROCESSING

Phonological | Orthographic | Memory | Motor

EFFICIENCY/AUTOMATICITY

FOUNDATIONAL

Self-Regulation | Behavior | Emotions | Resilience

ENVIRONMENT

The Building Blocks of Learning

the attentional demands within the Foundational block of Self-Regulation and the attentional control that is required in the Conceptual block of Executive Functions. As we explain the model, we will attempt to clarify these overlaps and distinctions. Although learning does not consist of isolated skills, identification of the unique affective, behavioral, cognitive, and linguistic variables that influence development and school performance can help educators understand a student's challenges and subsequently design appropriate behavioral and academic interventions.
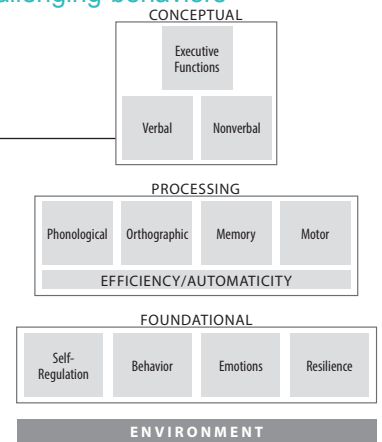
## The Learning Environment

Symbolically, the base of the pyramid is the learning environment. This includes the supports provided for the student in the home and school as well as any special services such as speech-language or occupational therapy that the student receives. Clearly, children's learning and behavior problems can be exacerbated by factors within the home and school settings. For example, lack of parental support coupled with chaos at home was having a significant effect on Mark's self-concept and his emotional availability to engage in academic tasks. Although Beto had a stable home environment, neither one of his parents spoke English. Thus, when he entered an English-only classroom, he was at a distinct disadvantage. Despite the fact that the home environment exerts a powerful influence on school adjustment, our focus in this book is on the learning environment at school. Classroom teachers have the primary responsibility for creating a nurturing class environment in which students feel respected, valued, and supported academically, socially, and emotionally.

## Foundational Blocks

The Foundational blocks provide the support system for all learning. Just as the foundation of a house must be strong enough to support the structure, these four blocks must be strong for efficient learning to occur. A brief description of the skills in the Foundational blocks follows.

### Self-Regulation

The Building Block of Self-Regulation includes a child's ability to pay attention, regulate behavior, and control impulses—all skills that are critical to learning. Mr. Chavez knew that the basis of many of Jeremy's attention and behavior difficulties stemmed from poor self-regulation and that his problems with impulse control prevented him from focusing on the relevant requirements of classroom learning tasks. Jeremy had trouble maintaining persistent effort and was easily distracted when attempting to pursue a goal. He had difficulty sticking with a plan for completing his assignments and rarely turned in work. He would often disturb other children.

### Behavior

The Building Block of Behavior includes a student's covert and overt actions, including social skills and compliance. Conduct disorder, oppositional defiant disorder, and insufficient anger control all are examples of externalizing disorders and behaviors that influence interactions with teachers and peers. Samuel's behavior caused negative reactions from his peers. He would often shove another student or, without provocation, knock a student's books onto the floor. Ms. Handler had tried

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to implement several interventions, including moving Samuel's desk away from other students or sending him to time-out, but his disruptive behaviors continued.

### Emotions

The Building Block of Emotions includes a child's general temperament as well as his or her moods. Problems in this block are sometimes called *internalizing disorders*—conditions such as depression, anxiety, and poor motivation. These disorders can significantly affect a child's availability to learn. Difficulties in school also affect attitude and performance. Ben had always struggled with reading and spelling, for example. These difficulties affected his attitude and his willingness to persevere on tasks requiring reading and writing.

### Resilience

In our model, the Building Block of Resilience focuses on how students perceive themselves and to what factors they attribute their successes and failures. These are learned attitudes, developed in part through feedback from parents, teachers, and peers. Resilience is a quality that reduces risk and vulnerability while simultaneously enhancing functioning and development.

Poor academic self-efficacy can affect a child's resilience and willingness to persist on difficult tasks. Maria, the sixth-grade student, wrote about this in her journal (see Figure 1.3). Clearly, her struggles with spelling and writing were affecting her self-concept and perceptions of self-efficacy. Because of these difficulties, Maria was beginning to believe that she was not good at anything at all.

To succeed in school, a child requires a supportive classroom environment, the ability to sustain attention, self-discipline, healthy emotions, and a positive view of self and school. Strengths in the Foundational blocks help a student compensate for other difficulties and learn to persevere even when faced with difficult tasks. Weaknesses in the Foundational blocks affect school performance, and adverse factors such as anxiety or depression reduce a student's mental availability for learning. Strong Foundational blocks do not, however, guarantee school success. Some children have support at home and school, pay attention, and are happy and well adjusted but struggle because of specific cognitive and/or linguistic weaknesses in the Processing or Conceptual blocks.

## Processing Blocks

The second level of the Building Blocks model involves the processing of information through the senses. The abilities in these blocks help children gain access to, produce, recall, and retrieve information about the symbolic aspects of language. Many terms have been applied to the deficient school achievement of this group, including SLD, underachievement, learning difficulty, dyslexia, and specific developmental disorders (Hinshaw, 1992).

In general, the abilities in the Processing blocks are conceptualized as secretarial in nature because these difficulties primarily affect basic skill development or the mastery of the coding systems of language: decoding (i.e., word identification), encoding (i.e., spelling), and motor coding (i.e., handwriting). Isaacson (1989) aptly distinguished between the roles of the secretary and the author in the writing process. The secretary manages the mechanical concerns of writing, such as spelling, punctuation, and handwriting (i.e., skills affected by strengths and weaknesses in the Processing blocks), whereas the author formulates, organizes,

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The Building Blocks of Learning

CONCEPTUAL

Executive Functions

Verbal    Nonverbal

PROCESSING

Phonological  Orthographic  Memory  Motor

EFFICIENCY/AUTOMATICITY

FOUNDATIONAL

Self-Regulation  Behavior  Emotions  Resilience

ENVIRONMENT

*I am so strace out with school*

*I can not write*

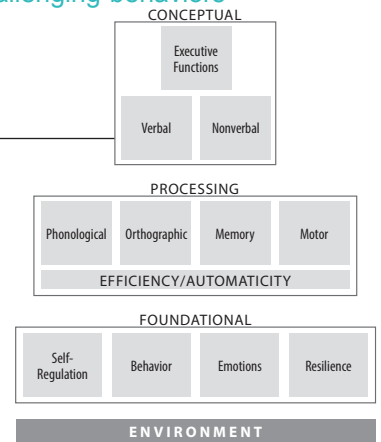*I feel like I am not go at enything and my self estem is very low!*

**Figure 1.3.** Maria's comments from her journal.

and expresses ideas (i.e., skills affected by strengths and weaknesses in the Conceptual blocks).

Some children have trouble with phonological processing tasks (e.g., rhyming words, identifying the discrete sounds in words). Other children have trouble with the orthographic or more visual aspects of learning to read and spell, such as remembering which way to write the letter *b* or how to spell the irregular element in a word. Certain children have trouble with aspects of memory, such as learning to say the months of the year in order or memorizing multiplication facts. Still others do poorly on the motor aspects of learning and, like Andy, have trouble cutting with scissors or learning to form letters. Eventually, these abilities become increasingly more automatic (with little thinking involved) as performance becomes more effortless and efficient. Children with marked weaknesses in these blocks are often diagnosed as having SLD. A brief description of the skills represented in these blocks follows.

### Phonological

This block encompasses phonological processing, an oral language ability that helps individuals to understand the sound structure of speech. Phonological awareness allows the individual to manipulate language sounds. As students learn an alphabetic language such as English, a critical first step in prereading is becoming aware that speech can be divided or sequenced into a series of discrete sounds, words, syllables, and phonemes, or the smallest units of sound. In most children, this awareness develops gradually during the preschool and early elementary years. Maria's

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difficulties with reading and spelling were caused by poor phonological awareness. She had trouble discriminating similar speech sounds and often would omit sounds when spelling a word or confuse certain sounds, such as writing *f* for the /v/ sound.

### Orthographic

The next block is orthographic processing. In a general sense, *orthography* refers to the writing system of a language, including the punctuation marks, capitalization rules, and spelling patterns. In a narrower sense, orthography refers to the perception and recall of letter strings and word forms. This ability, referred to as orthographic awareness, allows the individual to form a mental representation of the appearance of a letter or word. In addition, orthographic sensitivity helps one become aware of the common spelling patterns and word parts as well as the rules about legal letter strings or combinations that exist in a language. For example, most first-grade children quickly learn that the letters *ck* can be placed at the end of a word to make the /k/ sound but not at the beginning of a word.

### Memory

Several different types of memory can affect school learning. In reality, aspects of memory permeate all learning. Verbal short-term memory refers to the ability to repeat in a serial order information that has just been heard. This type of skill is needed to follow directions in a classroom or take notes during a lecture. Difficulty with memory is also associated with remembering rote information, such as learning the letters and their names or memorizing multiplication facts. This type of memory is often referred to as paired-associate learning or associative memory.

Some memory abilities are more complex and include aspects of two or more blocks, such as working memory. Working memory refers to the ability to apprehend information and then rearrange it in a specified way. A simple example would be to ask someone to listen to a series of digits and then ask him or her to say the digits back in a reversed order. This type of ability requires verbal short-term memory as well as the ability to visualize and rearrange the digits (nonverbal) and the ability to use strategies (executive functions). In some cases, a student's academic difficulties are primarily related to a weakness in some aspect of memory. In other cases, poor performance on tasks involving memory is more related to weaknesses in self-regulation or verbal ability.

### Motor

This block includes fine motor tasks—tasks involving small muscles such as those used in writing or drawing. Although it also includes gross motor skills, or skills involving the large muscles, such as jumping and running, fine motor skills are more related to school performance. Fine motor skills can be broken into two types: 1) symbol production (i.e., writing letters and numbers) and 2) artistic expression (i.e., drawing a picture). Some children can sketch or draw wonderful illustrations but are stymied by the production of symbols. This difficulty with producing the motor patterns needed for writing is sometimes referred to as dysgraphia. Andy possessed weaknesses in motor planning that made it difficult to perform most types of fine motor tasks with ease; however, he was an excellent artist.

The Building Blocks of Learning
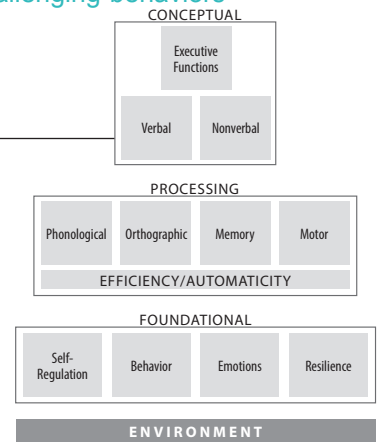
### *Efficiency/Automaticity*

This block, at the base of the Processing blocks, involves automatic and efficient retrieval, or the speed of recognition and production of letters, numbers, and words. This ability is needed to recall quickly basic sight vocabulary for both reading and spelling and to solve a page of math facts quickly. A child with initial weaknesses in this block is likely to have a slow reading rate and poor spelling in later years. In fact, Ben's major problems with reading and spelling were due to both his poor orthographic awareness and his slow speed of word perception. Often a student with a weakness in this block will have low scores on measures of processing speed or rapid automatized naming (RAN).

In general, as skills become increasingly automatic, students are more able to perform secretarial tasks such as accurately and fluently identifying words, taking notes, and memorizing math facts. Once a child has learned a task, which may require repeated practice, these skills become increasingly automatic, or *automatized,* and are performed with little thought and effort. For example, when a child has learned to read a word, the word is recognized instantly when it is encountered, and, as a child learns to write letters, the speed and ease of writing these symbols increase. The best way to become an expert is through practice—the more practice the better (Rosenshine, 2012).

Skills in the Processing blocks help children perform various tasks, but these skills alone do not guarantee school success. Some children have no difficulty learning to read, spell, write, and solve math computations. These children perform automatic processing tasks with ease; however, when the curriculum begins to accelerate and the children must read to learn, they may struggle because of weaknesses in language or reasoning skills. They may be capable of mastering basic mathematical processes but struggle with more complex mathematics because of difficulties with spatial reasoning and concept formation. In our model, these types of difficulties relate to the abilities of the Conceptual blocks.

## Conceptual Blocks

The top of the pyramid includes the Conceptual abilities: Verbal, Nonverbal, and Executive Functions. The abilities in the Conceptual blocks help students to understand meanings, comprehend relationships, visualize complex designs, apply previously acquired knowledge, and evaluate their performance as they engage in academic tasks.

### *Verbal*

The Verbal block includes tasks that involve thinking with language, such as understanding what is heard, comprehending written text, expressing ideas through speaking and writing, learning and using new vocabulary, and solving mathematical story problems. Students with strengths in language tend to speak easily and possess an expansive vocabulary. Students with weaknesses in language often have trouble with tasks involving both comprehension and production of text. Katy had weaknesses in language, and, consequently, her answers often missed the mark. One day, Ms. McGrew showed Katy a picture of four trees and then asked her, "Half of these trees would be how many?" As she drew a horizontal line across the trees, Katy asked, "You mean if you cut them this way?"

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### Nonverbal

The Nonverbal block includes tasks that involve thinking with images, such as the abilities involved in reproducing complex visual patterns and designs as well as understanding and judging spatial relationships. Some children have more difficulty with tasks of a nonverbal nature than with those involving language. These children tend to have particular difficulty grasping and acquiring mathematical concepts. They also may have trouble with developing social competence and recognizing, evaluating, and interpreting gestures and facial expressions. Stephanie had a lot of trouble interpreting facial expressions and could not readily assess how others were feeling. This block represents some problems associated with what is often referred to as nonverbal learning disabilities (NVLDs).

### Executive Functions

The top block on the model is Executive Functions. Executive functions encompass the abilities to monitor performance and act strategically to solve problems and complete tasks. These skills and abilities are used to direct all cognitive activities and include the abilities to plan, organize, monitor, evaluate, and reflect on one's own learning. This block is placed at the top of the model because of its importance to all learning and behavior. Strengths in this block help students to be purposeful and engage in goal-directed behavior. Ultimately, if students can be strategic, they are better able to maximize their performance while compensating or adjusting for weaknesses. This block includes thinking about thinking, or what is referred to as metacognition.

## How the Blocks Work Together

In thinking about the learning and behavior of students, one can understand the role that specific weaknesses in one or more of the Building Blocks can play in creating school difficulties. Ryan had weaknesses in the Processing blocks. These contributed to his reading difficulties and consequently affected his self-esteem. Katy had weaknesses in the Conceptual blocks, and she struggled to comprehend tasks that involved using language and reasoning. Jeremy struggled with weaknesses in the Foundational block of Self-Regulation. Although Ben could produce intricate sketches of machines and rebuild a motorcycle engine, he had trouble spelling even common words. Ben's weakness in orthography affected his ability to store and retrieve a mental image of the appearance of words. His marked difficulty with spelling contributed to a negative attitude toward all types of writing tasks. Mark came from a disadvantaged environment in which little support was provided for learning in the home. Marta had weaknesses in English but not in her native language.

When the blocks are stacked together as a model, it is easy to understand how a student's unique learning and behavior characteristics, as well as the child's support system and environment, can affect school success. When considering the unique characteristics of each student, the first goal is to identify specific strengths and how these abilities can be used to enhance performance; the second is to identify weaknesses so that appropriate accommodations and instructional plans can be developed and implemented.