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RACE, ETHNICITY, CLASS, AND GENDER

Race has been recognized as being scientifically nonexistent, yet socially real. Some have argued that genetic evidence (e.g., DNA) indicates that most physical variation occurs within so-called *groups*. Hence, there is more recognized *within* racial group variation than *between* racial group variation. Contemporary scholars argue the term *race* was invented in the 18th century to refer to the populations brought together in colonial America. The term was originally tied to the theorem of the Great Chain of Being (Armelagos & Goodman, 1998). The "scientific" research and the popular culture of the time supported, justified, and expanded fictitious beliefs about the various populations. These ideas became deeply embedded in American thought and eventually spread to other areas of the world. The early emphasis placed on race and the supposed related meanings gave way to racism. It has been said that if race is not a sufficient cause of racism, it is a necessary cause. Consequently, it has also been argued that the concept of *race* is a prime example of how politics can be embedded in science (Armelagos & Goodman, 1998).

Race enters into psychotherapy in ways that parallel its operation in society. Therefore, biases held by either the client or therapist can affect the assessment and treatment of those seeking psychological counseling. Many concepts of psychological assessment work from a European (or Western)-based system of understanding and treatment of problems. A major departure from what can be called European psychology is Black psychology, which focuses on understanding and treating clients from an African perspective that may also be more helpful to those who commonly employ an African/African American worldview (Wilson, 1993). An ability to relate to individuals who may process information differently can lead to better intervention and counseling by preventing misattribution caused by unfamiliarity with a person's worldview.

In many situations, the term *race* has been synonymous with *ethnicity*. Ethnicity can be seen as a subset of race in some instances. For example, throughout the African continent there are numerous ethnic groups (sometimes called tribes) such as the Ashanti, the Igbo (or Ibo), the Zulu, and the Yoruba, just to name a few. All of the ethnic groups would be in the same racial category—Black—but have more or less differing worldviews, customs, rituals, and practices. Thus, ethnicity can be contained within the race categorization and also be synonymous with race as a descriptor (e.g., African American).

One common theme in the ethnic discourse is the notion of culture, or shared history of a given people. It is this shared history, with common rituals, worldviews, philosophies, speech/language, mode of dress, and/or music, that bind individuals to a particular group. It can be said that the more one has in common and identifies in these various areas, the more one is part of this group.

Issues of race and ethnicity have been addressed in the field of education. The growth in multicultural initiatives is evidence of the push for including historical representation of ethnic minorities in the curriculum. Some have argued that academic success among ethnic minority students in the United States has been under-realized because in some instances students

have resisted a school culture that attempts to make everyone fit mainstream American values (Fordham, 1988). Others have argued that many of the problems associated with ethnic minorities have come as a result of being inadequately educated, or educated away from one's own self-interest for the benefit of the status quo. As a result of the inadequate education, many problem behaviors have developed in these communities and they persist (Akbar, 1998).

It is not the race of the client, therapist, student, or teacher that should be of most concern. It should, however, be acknowledged, addressed, and resolved that race and ethnicity, as real and unreal as they may be, often have definite implications and outcomes. In addition, one's culture should be taken into account to adequately teach and treat those in need (Wilson, 1993).

Class structure in a capitalist society such as the United States refers to the social ranking of individuals, families, and other groups according to their economic status. For example, the terms underclass, working class, middle class, and upper class denote a stratification of society that is based on income and social standing in a particular community (Bottomore, 1991). During the latter half of the 20th century, critics of class structure pointed to a number of radical social movements that resisted the notion of limits being placed on a person's mobility because of class or any number of other identity markers (e.g., gender, race, ethnicity, sexual orientation). However, with the rise of newer communication technologies and global capitalism has come a new class divide—one that separates people into two groups: a group that has access to these newer technologies and the jobs they create, and a group that has little or no such access.

An examination of some of the assumptions underlying class structure reveals a society's influence on young people's self-perceptions and identity formations. For example, individuals who perceive themselves (and are perceived by others) as being low-achieving students often end up the recipients of what Finn (1999) calls a "domesticating" education—that is, an education that stresses "functional literacy, literacy that makes a person productive and dependable, but not troublesome" (pp. ix-x). It is a second-rate kind of educational arrangement that typically leads to lower expectations and to social and economic inequalities. This cycle of inequalities continues as part of a pattern in which young people learn to identify with others in their culture who may be working class or poor like themselves. Because these identities

form early in life, it is important for educators to attempt to understand young people's history and background and avoid generalizing about "what works" for one class of people as opposed to another. Interventions that challenge traditional notions of learning within developmental psychology must also look for richer and more diverse assessments of young people's learning than are available in the current climate of high-stakes testing, with its emphasis on factual rather than higher-order thinking.

Gender denotes the attributes that are culturally ascribed to men and women. It is not a synonym for one's biological sex status (male or female). Scholars of late argue that gender is culturally and socially constructed through language (Payne, 1996). That is, the very things that seem to draw attention to one's maleness or femaleness are, in effect, not innate, but rather acquired through the cultural and social contexts in which we learn to speak, read, write, act, dress, and so on. The point of arguing for a culturally constructed notion of gender is that it is thought to facilitate a disruption of the traditional view of men and women in which the male is dominant and the female is subordinate—a condition that historically has led to social injustices and economic inequities. By disrupting the traditional view, feminists seek to make people more aware of how language has played a role in constituting male privilege throughout the centuries.

Issues of gender bias and prejudice in schools affect group dynamics within instructional contexts. For example, the research literature on student-led discussion groups in grades 6 through 12 demonstrates that peers, acting as "more knowledgeable others" (e.g., more academically capable students tutoring peers who are struggling to read), can facilitate meaningful interpretation of texts. However, what is less well understood is how the potential for stereotyping on the basis of gender can create situations in which some students' voices are valued over others. For example, studies conducted on girls' loss of voice, resiliency, and self-esteem as they approach adolescence suggest that many young women go through a process in which they begin to see themselves as the stereotypical female that society seemingly defines for them. In some instances, preadolescent females may begin to voice their opinions less in class discussions because a strong female voice is deemed unfeminine. Interventions aimed at changing this process point to the need for instructional strategies that better position young women to join in peer-led discussion groups with confidence and ease.

In summary, race, ethnicity, class, and gender are anything but "neutral" concepts. Each is socially, historically, and culturally embedded in a wide array of patterned behaviors, beliefs, and attitudes that give these concepts their meanings. More than simply theoretical constructs, race, ethnicity, class, and gender are capable of producing material effects that can have real consequences on people's everyday lives, whether in school or in clinical settings.

—Donna E. Alvermann and Preston Hughes, IV

See also Ability Grouping; Americans with Disabilities Act; Bias (Testing); Friendships; Intelligence; Multicultural Education; Resilience and Protective Factors

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RADIO/MUSIC. *See* COMPUTER TECHNOLOGY; MEDIA AND CHILDREN

REACTIVE ATTACHMENT DISORDER OF INFANCY AND EARLY CHILDHOOD

The essential feature of a reactive attachment disorder (RAD) is a marked disturbance in social relatedness that begins before age five years (in most contexts) and is associated with gross pathological care, which is presumed to be the cause of the disturbed social relatedness (*Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition* [*DSM-IV*], American Psychiatric Association, 1994). Gross pathological care includes a persistent disregard for the child's basic emotional and/or physical needs—a condition associated with child maltreatment. It can also include a lack of opportunity for the child to form a stable attachment with a primary caregiver, a circumstance that is associated with orphanages and multiple moves in the foster care system. However, gross pathological care does not always result in the development of RAD.

The *DSM-IV* delineates two subtypes of RAD: an *inhibited type* in which the child "shows a pattern of excessively inhibited, hypervigilant, or highly ambivalent responses" to the caregiver; and a *disinhibited type* in which the child "exhibits indiscriminate sociability or a lack of selectivity in the choice of attachment figures" (p. 116). Children with the inhibited type tend to be withdrawn and constricted in their behavior, whereas children with the disinhibited type show no fear of strangers and will often treat new acquaintances in an inappropriately friendly and intimate manner. RAD is distinct from children with mental retardation or autism in that children with mental retardation develop appropriate attachments, and in autism, there is typically no gross pathological care. Autism and other pervasive developmental disorders also involve a qualitative impairment in communication and stereotyped patters of behavior. Contemporary studies of attachment disorders in Romanian orphans (O'Connor & Rutter, 2000; Zeanah, 2000) provide some prevalence data. In a Canadian study (Zeanah, 2000) of 56 children ages three to five years who were adopted from Romania, secure attachment was initially found in only 30% of the children, while insecure, controlling attachment was observed in 42% of the children. Parent-reported attachment security increased significantly as the children became older (11 to 39 months), but there was no change in the level of indiscriminant friendliness toward nonfamily members. In a British study (O'Connor & Rutter, 2000) of 165 children ages four to six years adopted from Romania (144 were from institutions), the investigators found that only seven of the children exhibited marked/pervasive signs of attachment disorder. Duration of deprivation was linearly related to the number of signs of attachment disorder;, however, more than 80% of the children

adopted from Romanian institutions exhibited no marked/severe signs of attachment disorder at either age four or six years. The fundamental assumption underlying the development of RAD is that a child's attachment to a primary caregiver is biologically based and that only in extreme circumstances will the child not develop an attachment to his or her primary caregiver (Bowlby, 1969, 1982). The developmental course of RAD varies depending upon the age of the infant when he or she experienced gross pathological care, the amount and frequency of disruptions in the attachment relationship, the duration and severity of deprivation, the quality of the parent-infant relationship before and after the deprivation, and the implementation of any interventions. Many children who receive consistent, sensitive, and responsive caregiving following a period of gross pathological care will attain normal development, whereas those who do not will continue to exhibit symptoms of RAD (Howe, 1998).

The majority of treatment approaches have focused on early infancy, with interventions designed to improve the infant-parent relationship. The interventions center on addressing the child's emotional and behavioral difficulties and improving the parents' ability to understand and respond appropriately to their child's underlying needs for security and safety. Some interventions have included parent education on developmental issues relevant to the child's problems and direct "coaching" of the parent while the parent is interacting with the child in contrived situations. These interventions have been implemented in order to directly modify both the parents' and child's behavior and to improve parent-child communication, negotiation, and interaction (Greenberg & colleagues, 1997). This approach has also been modified and used with school-age children in the school setting.

Educational outcomes for children with RAD vary depending upon the nature and severity of the neglect that the child has experienced. These children may have physical problems associated with neglect such as poor dental hygiene, poor nutrition, and retarded growth. They may experience academic difficulties because of understimulation and/or nonattendance in school, and impaired peer relationships because of withdrawn behavior or indiscriminate friendliness (Crosson-Tower, 2002).

—*Linda Webster*

See also Autism Spectrum Disorders; *DSM-IV;* Infant Assessment; Mental Retardation; Preschoolers

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READING INTERVENTIONS AND STRATEGIES

Children experience difficulties in learning to read for a variety of reasons, including cognitive factors such as decoding (ability to pronounce written words) problems, psychological reasons such as lack of interest and motivation, and environmental differences such as inadequate facilities at home as well as in the classroom. The school psychologist must consider all these potential sources of impediment to acquiring reading skills and then develop a plan to address the cause(s). The existing policy—diagnosing poor readers who have a learning disability (LD) and poor readers who do not have a learning disability by administering an intelligence test and a reading achievement test—is not helpful in identifying the source of the reading problem, nor does it help in devising appropriate remedial procedures (Aaron, 1997). A more serious problem is that, so far, there is no convincing evidence that labeling children as LD and placing them in special education resource rooms produces any improvement in their reading achievement (Bentum & Aaron, 2003).

An uncomplicated way to understand the nature of the reading deficit is to organize the potential sources of reading difficulties into a coherent model and then

proceed with the diagnosis by following the model. On the basis of the theories of reading and research of experts as well as our own, we (Aaron & Kotva, 1999; Joshi & Aaron, 2000) have developed a model of reading acquisition called the Component Model.

THE COMPONENT MODEL OF READING

A component, as applied to psychological phenomena, is a mental process that is independent of other psychological processes. The failure of any one of the processes in the Component Model of reading can result in reading difficulties. For example, decoding (the ability to pronounce the written word) is one such operation; linguistic comprehension is an example of another operation. A child may not be able to decode written text but can listen and comprehend spoken language much better. He or she will, nevertheless, be a poor reader because the weak decoding process can affect reading independent of the comprehension process. Conversely, an individual who can decode written words fairly well but has weak linguistic comprehension skills will also be a poor reader. These two operations, decoding and comprehension, are part of the Cognitive Module of the reading Component Model. The Component Model of reading contains three modules that are relatively independent of each other. Each module, in turn, contains several operations. Table 1 gives the three modules and their operations.

THE COGNITIVE MODULE: ITS CONSTITUENTS

The Cognitive Module of the reading Component Model has five operations, which are classified under two major constituents: word recognition and comprehension.

Word Recognition

The ability to recognize the written word is a prerequisite for reading. Word recognition subsumes two related skills, decoding and sight-word reading.

Decoding. The basic speech sound, which can alter the meaning of a word, is a phoneme. A letter of the alphabet or a group of letters that represent a single phoneme is called a grapheme. Initial stages in reading involve transforming graphemes into phonemes and is also referred to as decoding.

Table 1   The Constituents of the Component Model of Reading

Cognitive module:		
	Word Recognition:	Decoding, Sight-word reading
	Comprehension:	Vocabulary, Sentence comprehension and Passage comprehension
Psychological module:	Motivation & interest	
	Locus of control	
	Learned helplessness	
	Learning styles	
	Teacher expectation	
	Gender differences	
Ecological module:	Home environment	
	Culture & parental involvement	
	Classroom environment	
	Peer influence	
	Dialect	
	English as second language	

What is the advantage of grapheme–phoneme conversion and decoding the print? The sound format of words is the best way to keep words in short-term memory. Thus, decoding is an essential skill for sentence comprehension. After the reading experience of two or three years, children become proficient decoders and subsequently become sight-word readers.

Sight-Word Reading. Contrary to what one may think, sight-word reading does not involve processing the word as a single unit, or a single picture. During sight-word reading, individual letters in the written word are processed, but they are processed all at once, in parallel. Eye movement studies provide the best support for the view that when we read, we process all the letters in a word (Just & Carpenter, 1987). Recognizing a written word by sight is very much like facial recognition. It is quick, simultaneous, and automatic; it is also not attention demanding.

Since sight-word reading involves processing the letters in the words, it is essential that the beginning reader posses letter knowledge. Without such knowledge, the child cannot decode the words smoothly. It follows then, that decoding skills are a prerequisite for sight-word reading.

Comprehension

Because language is expressed mainly in two forms, spoken and written, the term *comprehension* refers to an understanding of both spoken and written language. Beyond the modality difference, the same brain mechanisms are involved in comprehending spoken and written language. This is supported by research studies, which show that the correlation between listening comprehension and reading comprehension can be as high as .80. Comprehension of written text requires three elements:

1. Knowledge of words (vocabulary)
2. Understanding sentences
3. Understanding passages

Knowledge of Words. Vocabulary knowledge and reading comprehension are highly related to each other, the correlation being as high as .80. In general, people who read more have a high level of vocabulary. Children who have a rich vocabulary tend to read more because they enjoy reading; this leads to greater vocabulary knowledge. Children who have limited vocabulary avoid reading as much as they can, and their vocabulary knowledge stagnates. This results in an ever-widening gap between good readers and poor readers. Eventually, this results in the so-called *Matthew Effect*, taken from the Bible and applied to the reading–vocabulary symbiosis: "For everyone who has, more will be given; he will have abundance; but from him who does not have, even what he has will be taken away" (The Gospel according to St. Matthew, Chapter 25, verse 29).

Understanding Sentences. Having a large vocabulary itself does not guarantee the comprehension of sentences and connected texts. To understand sentences, the reader should, first of all, be able to interpret the sentence correctly. Some of the sentences children encounter in upper grades do not state the meaning explicitly. The child has to infer the information that is not given. A knowledge of syntax (grammar) is also essential for understanding sentences, because written sentences are complex in the sense they have many embedded clauses in them.

Understanding Passages. Just as sentences are more than a collection of words, text is not a mere aggregation of sentences. Linguists describe connected texts as having their own grammar. That is, they have a beginning, a message, and an end. This is referred to as the grammar of the story. Understanding the grammar of the story facilitates comprehension.

THE PSYCHOLOGICAL MODULE: ITS CONSTITUENTS

Psychological aspects related to learning are also important for the acquisition of reading skills. If a child is not interested in learning to read, no amount of instruction can make him or her a good reader.

Motivation and Interest

Motivation is defined as the process of initiating, sustaining, and directing one's own activity. Motivation leads children to read. Reading becomes an alluring activity when children find it interesting. Psychologists classify motivation broadly as extrinsic and intrinsic. External factors that motivate children to read are simple rewards such as gold stars, candy, and verbal praise by the teacher. Intrinsic motivation is a desire to read that comes from within the child.

Locus of Control

Julian Rotter, who introduced the concept of *locus of control* into the psychological literature, classified it into two discrete categories, external and internal. When a person feels that life's events are the result of chance, luck, fate, or control by others, he or she feels the location of control is external; when a person feels that the outcomes of events are the consequences of his or her own actions, the locus is said to be internal. This variable is said to have significant influence on children's learning.

Learned Helplessness

After repeated failure, a child will not try to learn; he or she will just give up. In other words, the child has learned to be helpless. Behaviorally, this can lead to a lack of interest and effort on the part of the child. In the long term, the child expects to fail and fulfills this prophecy by failing.

Learning Styles

Learning styles are described as reasonably stable patterns of behavior that indicate learning preferences. According to Marie Carbo (1983), who is the leading

proponent of learning styles, the concept of learning styles has four dimensions:

1. Cognitive: Includes factors such as modality preferences (auditory vs. visual)

2. Affective: Includes personality characteristics such as anxiety level, expectancy, and level of motivation

3. Physiological: Includes gender differences, daily rhythms (morning vs. afternoon person), and "left-brain" or "right-brain" proclivity

4. Psychological: Includes factors such as self-concept, locus of control, and sociability (loner vs. group person)

The instructional implication is that matching the method of instruction with the learning style of the child should reduce learning difficulties.

There are several problems associated with the concept of learning styles. For one thing, we have no reliable instruments to assess the learning styles of children. For instance, it is not an easy matter to decide who is left-brained and who is right brained. Nor is it easy to determine if a child is an auditory learner or a visual learner. It is also well-known that optimal learning occurs when the child can see, hear, and touch what he or she has to learn. In spite of the many claims, the findings of research on the effectiveness of matching teaching with learning styles is equivocal.

Teacher Expectation

The concept of teacher (or parent) expectation refers to inferences that teachers make about the future behavior and achievement of a child, based on what the teacher knows about the child now. These expectations affect learning outcomes because teachers, either consciously or unconsciously, tend to behave in conformity with their expectations and children respond accordingly and fulfill these expectations. Teachers themselves may not be conscious of their expectations and actions and, for the most part, are unaware of their own behavior. The school psychologist can be of much help here.

Gender Differences

As early as 1919, Hinshelwood, a British physician, reported that more boys than girls have reading difficulties. Since then, a gender difference has been observed by many other investigators. Although the higher incidence of reading disability in boys is frequently encountered, the reason for the observed gender difference is disputed. Two explanations theorized are constitutional and environmental. The constitutional explanation of a gender difference in reading ability is linked to cerebral hemispheric differences in the brains of the two sexes.

The environmental explanation is equally viable. The explanation goes something like this: in American culture, there seems to be an ethos that reading, writing, and other literacy pursuits are "girlish" things; math and athletics are "boyish" thing. It is also pointed out that boys, being aggressive and restless, are likely to attract the attention of teachers more often than girls. The net result is that more boys are referred for diagnostic evaluation.

THE ECOLOGICAL MODULE: ITS CONSTITUENTS

The importance of home in the acquisition of literacy skills by children is succinctly expressed by statements such as "home is the first school" and "family is the nation's smallest school." Needless to say, several environmental factors associated with home, school, and culture affect the acquisition of reading and writing skills.

Home Environment, Culture, and Parental Involvement

Describing the family as the nation's smallest school, Paul Burton estimated that 90% of the differences in academic achievement seen among students and their schools could be explained by five factors:

1. The presence of two parents in the home

2. Quantity and quality of reading materials in the home

3. Number of hours spent watching TV

4. Number of days absent from school

5. Number of pages read for homework

Activities such as joint storybook reading, playing word games, and visiting libraries promote reading skills. Children tend to do what they see, particularly

what they see their parents do. Another factor is a potential difference between the school culture and the home culture. For example, the teacher expects the child to do well at school, but doing well in school is not at the top of the list of parental expectations for the child. Remedial strategies and interventions cannot be planned without taking the home environment into account. The school psychologist can play an important role in bridging the gap between home and school.

Classroom Environment

Young children are quite active; they become restless and lose concentration if they are required to sit in one place for more than a few minutes. For this reason, the classroom has to be arranged in such a way that it provides plenty of opportunities for movement, action, and interaction with peers and the teacher.

A classroom environment that is rich in literacy materials is an important factor in promoting literacy learning among children. Researchers report that space allocation and arrangement, and accessibility of materials and learning tools have a positive influence on children's literacy learning.

For optimal learning–teaching outcomes, seating of the children can be arranged in a semicircle so that the distance between the teacher and the child is the same for all children. The result is that no child sits always in the front part of the classroom and no child is cast away to the rear of the classroom. Wild departures from these ideal environmental conditions can result in reading difficulties.

Peer Influence

The influence of peers on children's behavior is well recognized in psychological literature. It is a powerful factor. Peer influence can operate both positively and negatively on a child. Positive peer influences can be exploited by setting up many learning experiences for the children through organizing them into small groups in which learning occurs.

Dialect

Dialect is a regionally or socially distinctive variation of language characterized by a particular accent, set of words, and even grammar. Even though it is relatively easy to distinguish between a dialect and a language, the difference is largely a matter of degree. People are said to speak different languages when they do not understand each other; they are said to speak dialects if they can understand each other, even though not perfectly. A single dialect, usually spoken by a majority of people, comes to predominate as the official or standard form of the language. Thus, the English spoken by a majority of people (and not because it possesses some singular linguistic feature that sets it apart from other dialects) becomes Standard English (SE).

In the United States, many dialects are spoken, including Black English (BE), which is also known as Vernacular Black English or Ebonics. Many African American children and students can speak both BE and SE and can switch the two as the situation demands. BE can vary from SE in phonology and grammar.

English as a Second Language

Bilingualism exists in degrees. A child may come from a home where only a language other than English is spoken or from a home where both English and another language are used. It is understandable that reading and writing pose special difficulties for a child from a home where English [is used] as a second language (ESL). Learning to read and write in a second language is especially difficult for an ESL child with reading difficulties.

ASSESSMENT OF THE COGNITIVE, PSYCHOLOGICAL, AND ECOLOGICAL ELEMENTS OF READING

Assessment of Decoding Skills

Almost all standardized tests of reading achievement have a subtest for assessing decoding skills. Also known as "word attack" tests, these tests contain a list of nonwords (such as *daik* and *birk*). Because the child has not encountered such nonwords before, word familiarity is controlled.

It has to be pointed out that not all nonwords are alike. A nonword such as *dake* is said to be "friendly" because it has many neighbors (e.g., make, bake, rake, etc.). A child can successfully read *dake* simply by substituting the first letter in the word and read it by analogy. In contrast, words such as *daik*, do not have many neighbors and, therefore, cannot be read by

analogy. A list of such "unfriendly" nonwords, is, therefore, a better test than the ones used by many standardized tests.

Another problem with standardized word attack tests is that many of them are not timed. Experience shows that some poor decoders, given sufficient time, can decode many nonwords. The results obtained from such untimed tests can be misleading. In the classroom, the teacher (or the school psychologist) can construct his or her own list of nonwords. If care is taken to include only "unfriendly" nonwords and administration of the list as a timed test, an objective measure of decoding skills can be obtained.

Assessment of Sight-Word Reading Skills

Sight-word reading is an automatic process resulting in the very fast naming of a word. We've known for more than 100 years that skilled readers can name a written word as fast as they can name a written letter. This is possible because all the letters in a word are processed simultaneously and in parallel. Therefore, when a child names a written word as fast as he or she can name a written letter, we know the child has read that word by sight. To assess sight-word reading skills, the teacher can make a list of 20 common words already taught in the classroom and ask the child to name them and note the time. Subsequently, the teacher can also record how much time it takes the child to name a list of 20 letters of the alphabet. When letter-naming time and word-naming time are close to each other, the child can be considered to have read those words by sight.

Assessment of Vocabulary Knowledge

There are two ways of assessing vocabulary knowledge. One is informal and the other is formal. It should be understood that children know more words than they use in their day-to-day conversation. Therefore, mere sampling of speech will not provide a reliable measure of a child's vocabulary knowledge. The informal way of assessing vocabulary is to construct a vocabulary inventory by selecting words from the textbook the child uses in the classroom. Curriculum-based assessment uses this approach. The child can then be asked "what does that word mean?" or to embed the word in a sentence to make it meaningful.

Formal assessment of vocabulary relies on standardized tests. The most frequently used test is the Peabody Picture Vocabulary Test. In this test, four pictures of objects, animals, or actions are presented. The child is given one word and is asked to point to the one picture that matches the target word. An advantage of this test is that no verbal response is required; it also can be administered to very young children as well as to adults.

Assessment of Comprehension of Sentences and Written Passages

As it is in the case of vocabulary, assessment of comprehension can be carried out in two ways: informal and formal. Informally, the child can be asked to read a passage from his or her textbook and then answer some questions. In addition to the number of questions answered correctly, the behavior of the child during oral reading can also provide important clues about the child's reading skills. When the child makes an oral error and goes back and corrects the mistake, it shows that the child is monitoring his or her own comprehension and takes corrective action. Children whose comprehension is not up to the mark are likely to rush through the text without correcting their own reading mistakes.

All standardized tests of achievement have a subtest of reading comprehension. However, these tests have adopted different strategies to assess comprehension. The Woodcock Language Proficiency Battery-Revised subtests are in the cloze format in which a word is deleted from the sentence and the reader has to supply the word. The Stanford Diagnostic Reading Test (SDRT) and the Gates-McGinitie tests require the child to read a paragraph and answer multiple-choice questions. The Peabody Picture Vocabulary Test presents a choice of four pictures from which the reader chooses the one that fits the written sentence.

It is apparent that tests differ in the ways they assess comprehension and are, therefore, not likely to yield identical results. The Woodcock Language Proficiency Battery, made up mostly of sentences, does not put much stress on memory. The Stanford Diagnostic Reading Test, which uses a paragraph format, is closer to real-life reading, and, therefore, ecologically more valid. The Peabody Individual Achievement Test involves much reasoning and has many features of a test of reasoning and intelligence. It is important that the school psychologist pays attention to which test was used for assessing reading comprehension.

Assessment of Spelling Skills

It is a widely held belief that spelling is a visual memorization task. However, developmental studies of spelling indicate that it is more closely related to phonological skills than to rote visual memory (Treiman, 1993). As a result, spelling errors committed by children often reflect their efforts to "phoneticize" English words (e.g., "girl" spelled as *gal* and "light" spelled as *lite*).

Standardized tests of spelling ability (e.g., the Wide Range Achievement Test) use a list of words to assess spelling skills. It is possible that the list contains words with which the child is not familiar. The child will phonetically spell many of these unfamiliar words, which will lead to errors. Under such circumstances, should we conclude that the child has a spelling weakness or that his or her vocabulary knowledge is limited? The best way to assess spelling performance is by using words with which the child is familiar.

There is another point to be made here. Consider two third graders who were given a spelling test that consisted of words such as "horse," "school," "book," and "leaf." Child *A* spelled them as "house," "scool," "bok," and "leef" whereas child *B* spelled these words as "ose," "oolcs," "koo," and "lf." Both children receive a zero on the test. Such a quantitative evaluation places both children on the same level and is of little instructional value. Instead, qualitative analysis of spelling provides a more accurate view of the child's spelling skills in addition to giving hints for spelling instruction.

IDENTIFYING THE SOURCE OF A READING PROBLEM (DIFFERENTIAL DIAGNOSIS)

The main purpose of the diagnostic procedure is to identify the source of reading difficulty. With reference to the Cognitive Module, this can be accomplished by administering a standardized test of reading comprehension and a test of listening comprehension.

Decoding Problems

If listening comprehension is within average range but reading comprehension is below average, then weak word recognition skills are the source of reading difficulty. This diagnosis can be further confirmed by a low word-attack score, poor spelling performance, and slow naming of written words. Remedial instruction would then focus on improving word recognition skills.

Comprehension Problems

In contrast, if the child performs at a below-average level on both reading and listening comprehension, the remedial instruction will focus on improving comprehension skills. Word recognition skills of these children should also be assessed. Standardized batteries such as Woodcock Language Proficiency Battery and Wechsler Individual Achievement Test have subtests of reading and listening comprehension.

Attention Deficit Hyperactivity Disorder

The combination of a higher listening comprehension score and a lower reading comprehension score is the most frequently encountered pattern seen in children with reading disability. Occasionally, the opposite pattern—higher reading comprehension score and lower listening comprehension score—is seen. This is often indicative of attentional problems (Aaron & colleagues, 2002; Aaron & colleagues, 2004).

Assessment of the constituents of the Psychological Module and the Ecological Module are carried out through observation and interview procedures.

INSTRUCTIONAL PROCEDURES

Remedial Approaches: The Cognitive Module

Instructional Procedures for Improving Word Recognition Skills: Decoding

In general, remedial methods attempt to deal with two main problem areas in reading, word recognition skills and comprehension skills. Other areas of concern to teachers are vocabulary development, fluency development, and spelling development.

Awareness of units in spoken language develops as early as nursery school. First, children are able to recognize and repeat rhyming words. Subsequently, by age three or four years, they can identify syllables in multisyllabic words. Finally, some (but not all) children can identify phonemes. Phonemes are not as easily recognizable as rhymes or syllables because in speech, phonemes overlap each other much like the shingles on a roof. In recent times, sensitivity to phonemes has come to be described under the label of phoneme awareness. The ability to recognize rhymes and syllables, along with phoneme awareness, is collectively referred to as phonological awareness. A good deal of research shows that sensitivity to phonemes and word

recognition skills are closely related. Although it is uncertain whether phoneme awareness results in better word recognition skills or reading experience results in better phoneme awareness, it is well established that phoneme awareness training improves reading skills, particularly that of poor readers. This phenomenon is true not only in English but also in languages such as Dutch, Italian, and Norwegian. Phoneme awareness training can be the starting point for children with word recognition difficulties.

A simple but interesting task that can be useful for creating an awareness of sounds in the language is picture sorting. In this task, children are asked to sort pictures with similar initial or final sounds in their names on the basis of some criterion set by the teacher. The same task can be presented orally.

In their book *Phonemic Awareness in Young Children* (1998), Adams and colleagues (1998) provide step-by-step instructions for creating phonological awareness in children, starting with rhyming activities and culminating in word identification.

In making a transition from oral language to written language, from phoneme awareness to word recognition, the following steps are used:

- Associating sounds with colored blocks or tiles
- Replacing colored blocks or tiles with letters of the alphabet
- Blending constitutional sounds in simple words and pronouncing the words
- Copying words on to sheets of paper
- Spelling the words from memory introduced in the previous step

A knowledge of the structure of words and how they are formed can be of much help in acquiring word recognition skills and in vocabulary development. Known as morphological awareness, this includes not only knowing words, but knowing about words (i.e., the origin of words such as Latin, French, etc.) and roots of words (free morphemes).

Instructional Procedures for Improving Word Recognition Skills: Fluency and Sight-Word Reading

Sight-word reading skills develop slowly; but by the time children are in the third grade, most of them are able to read many common words by sight. It should be remembered that even skilled adults have to decode the word in order to pronounce it. The first step, therefore, would be to improve the decoding skills of a child who does not have well-developed sight-word reading skills. Beyond this step, familiarity with the printed word is an important factor that promotes sight-word reading skills. This can be accomplished by reading, reading, and more reading. Such reading experience should involve meaningful sentences, not isolated words. Repeated exposure to words brings these words into the child's sight-word repertoire. Simply printing words on cards and exposing them to the child again and again will not make a child a good sight-word reader. The child may be able to read a handful of words by sight, but, beyond that, memory limits further progress.

Not all educators favor a phonics instructional approach. Their argument is that the skill and drill approach to reading instruction is meaningless and uninspiring for children who may lose interest in the entire enterprise of reading. On the other hand, if meaningful materials are used, they are likely to become avid readers. This philosophy of reading instruction is often referred to as the whole language approach (Goodman, 1986). The disagreement between the skills approach and the meaning approach to reading instruction has a history of more than 100 years behind it and is known as the *reading war*.

Instructional Strategies for Promoting Spelling Skills

Spelling has to be explicitly taught. In teaching spelling to children, the following principles are recommended (Moats, 1995):

- Provide spelling exercises and tasks according to the child's vocabulary level, not on the basis of the child's chronological age.
- Provide phoneme awareness to the child, if necessary. There is evidence that this type of training improves children's spelling (Arra & Aaron, 1999).
- Use as many modalities as possible for spelling instruction.
- Embed spelling words in sentences. This makes the words meaningful and, simultaneously builds up vocabulary knowledge.
- Focus on letter patterns. Use a family of words based on their onsets and rimes for instruction.
- Keep in mind the student's spelling skills level when preparing lists of spelling words. The list size will have to be individualized.

- Give four or five spelling words per day to children in primary grades and to children who have difficulty with spelling.
- Have the students take a test on these words the following day. Missed words are included in the next day's spelling list.
- Analyze spelling errors and direct the student to compare the misspelled word(s) with the correct spelling. When possible, explain to the student why he or she might have committed the spelling error(s) by using a phonological analysis of the errors.

It also has to be kept in mind that spelling is more resistant to instructional efforts than decoding or reading.

Instructional Procedures for Improving Vocabulary Knowledge

Vocabulary instruction is not mere teaching of dictionary definitions of words. The most critical element in vocabulary learning is meaning within a context. This is so because meaningful information is remembered well, whereas meaningless rote memorization does not last long. Words can be made meaningful by encountering them in a situation while reading or constructing sentences using new words. Teachers can introduce new words, embed them in sentences, and make them meaningful.

Visualizing word families by constructing semantic maps is another way of improving vocabulary knowledge.

Reading to children or reading with children is a simple way of introducing new words. Reading to children should be made an interactive process. The parent or the teacher stops, asks questions, and asks the child to repeat what he or she has heard.

Games such as Scrabble are also a means of making children think about words. Children should know not only the words, but they should also know about the words.

Instructional Strategies for Promoting Reading Comprehension

The ultimate goal of reading is to comprehend the written material. It was noted earlier that both listening comprehension and reading comprehension are mediated by the same cognitive mechanisms. For this reason, training in listening comprehension is the starting point with very young children or children who have decoding deficits. The listening comprehension training focuses mainly on teaching the child to pay attention while listening to a story, to be able to identify the main points, and to summarize the story at the end.

After listening comprehension training, reading is introduced. The children are asked to memorize and use the following seven strategies as they read:

1. Determining the purpose of reading: The child should ask, "What is the purpose of my reading this?" Many children mistakenly think that reading aloud without making mistakes and reading fast are the goals of reading.

2. Activating background information: The child should pause after reading the title of the text, and think aloud what is the passage about.

3. Stopping and reflecting: After reading a paragraph, the child should pause and reflect what he or she has read so far.

4. Seeking help: If questions arise, the child should ask the teacher or refer to the dictionary.

5. Using pictures and maps: The child should often look at pictures and maps in the text and use them as visual aids.

6. Questioning self: The child should self-monitor his or her own comprehension.

7. Summarizing: When the end of the story is reached, the child should be able to summarize the contents in one or two sentences, without looking at the text.

For children with word recognition problems, decodable books can be used. Stories in decodable texts are constructed out of simple words, which are often repeated.

Remedial Approaches: The Psychological Module

Motivation

There are some simple principles that can be implemented by parents and teachers for promoting intrinsic motivation in children. First, children should be made to know that behind the scribbles in the book are hidden interesting stories that are to be discovered. This is accomplished by reading aloud interesting stories to children according to age level and ability.

Educators recommend that reading-aloud time should meet three conditions:

1. Children must see value in reading.

2. Children should see that reading brings enjoyment and satisfaction.

3. The book chosen should be such that the child would feel confident and would want to read it for himself or herself. It is important to set a fixed time of around 20 minutes per day so that children look with anticipation for the read-aloud moments.

An activity will be motivating if it is challenging but not beyond the skill of the reader. Children should be given some degree of autonomy in choosing the book to be read. Another important fact to keep in mind is that reading to children should not be a one way activity. The teacher/parent should actively involve the child during reading by stopping, pondering, and asking questions to the child. Additionally, if the child sees his parents in the act of reading and enjoying it, he or she is likely to emulate their behavior.

Locus of Control

Reliance on factors such as chance, luck, and fate bring forth inconsistent outcome and often failure. Creating opportunities in which the child can succeed can build confidence.

Learned Helplessness

The best thing parents can do is to create opportunities for their children to be successful as much as possible. Success could be realized by adjusting tasks in which the child can succeed. This can be accomplished by assigning reading material according to ability level, cutting down on the number of pages to be read, reducing the number of spelling words, and providing additional time to complete reading and writing exercises. Feedback should be constructive; judgmental statements are to be avoided.

Learning Styles

It has to be noted that learning style is not to be confused with individual differences among children. Children do differ in their family background, in the first language and dialects they use, in their interests, and in their ability level. Children also differ in their anxiety level. Helping the anxious child to relax and making such a child feel comfortable are part of a teacher's social skills. Young children also need lots of hands-on activities and learn best when they can move around freely. It is also known that some children benefit from group work and peer instruction. These educational practices, however, are not derived from the concept of learning style.

Teacher/Parent Expectations

- We all form expectations of others, often unconsciously, and this does influence our behavior.
- Teachers should keep expectations for the individual child current by paying close attention to his or her progress.
- Teachers should be flexible enough to alter expectations.
- Teachers should give more importance to current performance than to past performance.
- Teachers should set flexible goals for the child.
- Teachers should stress the continuous progress of the child and not how he or she compares to other children or to standardized norms.
- Teachers should emphasize constructive feedback rather than judgments such as "good" and "poor" or "right" and "wrong."
- Teachers should recognize and reward the child for his or her real progress and not trivial attainments.

Gender Differences

Notions about gender differences can influence parents' expectations (boys will be boys) and thus create a mindset which, in turn, can affect instructional practice. The best way to avoid such gender-based expectations is to be aware that these studies deal with averages and not individuals. That is, in any given area, there are boys who perform better than girls and there are girls who perform better than boys.

Remedial Approaches: The Ecological Module

Home Environment

Parents are the primary models children tend to emulate. It is, therefore, important that parents present themselves as avid readers. During case conferences,

this fact should be stressed and parents should be made to realize the importance of their role in their children's education.

The school psychologist should realize that if the gap between the home culture and school culture is wide, children may perceive reading-related tasks as irrelevant. Parent-teacher-child conferences provide an opportunity for reducing cultural differences between school and home.

Classroom Environment

Dividing children into small groups can introduce variety in classroom instruction. Such a grouping need not be based on ability, but rather it is better to have children of different ability levels in each group.

The seating arrangement of children and sufficient room for children to move around are features that are essential elements of the classroom environment.

Dialect

Emphasizing the functional value of learning and using the standard dialect may not be effective with most minority children. For example, statements such as "You will get a good job only if you speak like most people do" and "you have to learn to speak and write the way you are taught in the school" may sound very unrealistic to minority children. Instead, enticing the child to use SE because the majority of the people in this country use SE is likely to be an agreeable proposition for many minority children.

It will be helpful for the teacher or the parent to draw the attention of the child to phonological and grammatical differences between Standard English and Black English. In addition, special attention to spelling can make children sensitive to phonemes they tend to omit or substitute. Drawing the attention of the student to the influence of dialect on written language can be helpful in avoiding some grammar mistakes. This is so because many students tend to write the way they speak.

English as a Second Language

While admittedly the acquisition of reading and writing skills will be far more difficult for an ESL child than it is for the child whose mother tongue is English, written language can actually be of help in learning SE because written language is formal, whereas spoken language is colloquial. Phonology and vocabulary can be introduced with much less difficulty than grammar and morphology (word inflections). Peers of the ESL child can be a good source for acquiring SE skills.

Instructional Strategies Designed for Teaching Children at Risk

It is said that 10% to 20% of school children experience difficulty in learning to read for no apparent reason. This condition is recognized by different labels such as learning disability, specific reading disability, and dyslexia. Since it was first recognized that some children with normal mental ability experience an inordinate amount of difficulty in learning to read, specialized methods for teaching these children have been developed and promoted. Fernald and Keller in 1921, Monroe in 1932, and Orton in the 1930s were the pioneers who developed such methods. These methods focused primarily on developing word recognition skills through phonics-based instruction.

The Orton-Gillingham Approach

The Orton-Gillingham approach was first presented in 1960 by Anna Gillingham, a close associate of Samuel Orton, a physician who practiced medicine in Iowa in the 1920s and 1930s. During his practice, Orton gained extensive experience in dealing with children who had educational problems. Later, he and Gillingham operated a clinic together in New York, and there they developed their instructional method.

The original publication was revised several times, with the seventh edition appearing in 1979 under the title, *Remedial Training for Children With Specific Disability in Reading, Spelling, and Penmanship* (Gillingham & Stillman, 1979). Several phonics-based versions of the Orton-Gillingham approach have been developed in recent years by other authors.

The three important features of the Orton-Gillingham approach are:

1. It teaches phonics directly by introducing letter names and their sounds first, and blending skills soon after.

2. It uses a multisensory approach by teaching letter-sound associations through auditory, visual, and kinesthetic modalities.

3. It follows a systematic step-by-step approach proceeding from the simple to the complex.

Even though this method has been practiced extensively with dyslexic children and adolescents, very few research studies had been conducted and reported to validate the effectiveness of the Orton-Gillingham approach. The primary reason for the paucity of research is that this method is used primarily in clinical settings on a one-to-one basis, which does not generate extensive data that can be statistically analyzed. Two studies, one by Kline and Kline (1978) and another by Joshi and colleagues (2002), reported successful outcomes.

Beth Slingerland (1977) developed a closely related guide for teaching children with specific reading disabilities that uses a multisensory approach. In many respects, the Slingerland procedures are very similar to the Orton-Gillingham approach. In fact, Slingerland spent some time with Anna Gillingham and Bessie Stillman, authors of the Orton-Gillingham method.

Spalding's Writing Road to Reading

The Writing Road to Reading by Romalda Spalding was first published in 1957. Spalding acknowledges her indebtedness to Samuel Orton, under whom she practiced her remedial methods for three years. During the span of nearly four decades, it has been widely tested with good results. A fifth revised edition of the program was published in 2003. It is a structured method of teaching phonics and is available in the form of a single book, which makes the implementation of the procedures relatively easy. Even though this method is intended for use in the regular classroom, it is equally valuable to remedial teachers. The Spalding program is also called the Unified Phonics Method because it incorporates hearing, speaking, and writing, as well as reading comprehension.

Although much of the material in *The Writing Road to Reading* is borrowed from the Orton-Gillingham approach, the Spalding method differs from it in two important respects: emphasis on letter sounds rather than letter names, and the emphasis on spelling through writing.

Reading Recovery Program

Reading Recovery (RR) is another widely known program that does not follow a rigid sequential format but has a meaning orientation. RR was developed by Marie Clay and became a nationwide program in New Zealand in 1979 and was later introduced in the United States and Australia in 1984. Developed as a program designed to be preventive in nature, RR is implemented soon after reading problems are recognized during the first year at school. Some of the salient features of the RR program are:

- It is designed for at-risk readers in the first grade.
- Each program is individually designed, and there is no standardized or scripted procedure for instruction. The RR program uses storybooks and does not use highly structured books and worksheets. The RR teacher a spends considerable amount of time in identifying the child's weaknesses and strengths. Children are tutored individually. However, some school systems tutor children in small groups of two or three. The instructional program is approximately 30 minutes per day and is supplementary to the regular classroom teaching. Classroom teachers and RR teachers work as a team.
- RR is temporary and lasts until the child has reached a level of reading skill expected at his or her grade level. Under normal circumstances, this period is expected to be approximately 12 weeks.
- Writing is given as much importance as reading. Every day, the child writes as much as he or she can alone. The child is also asked to read what he or she has written.
- RR teachers are required to undergo special training, which may be a year in duration. They also continue to participate in in-service programs.

According to one report, at the end of first grade, more than 66% of the students who had completed the program were reading at or above the first grade level.

Some of the concerns about RR are that progress is measured by informal tests and not by standardized tests. There is also a possibility that the effects may wear off after students reenter the regular classroom. Success rates reported may be based on children who have improved and were discontinued from the program and not on the entire population of children participating in the RR program. Yet another concern is the extensive training teachers have to undergo and

the nature of the one-to-one teaching format, both of which may not be cost-effective.

—*P. G. Aaron*

See also Academic Achievement; Cooperative Learning; Grades; Homework; Learning; Learning Styles

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RECIPROCAL DETERMINISM

Reciprocal determinism is a construct proposed by Albert Bandura within his social learning theory. Social learning theory focuses on behavior and learning within social contexts, and it posits that an individual's behavior changes after direct experience or after observing a model's behavior (otherwise known as vicarious learning). The four processes involved in vicarious learning are paying attention, retaining, reproducing, and having the motivation to emit a model's behavior.

Reciprocal determinism suggests that individuals function as a result of a dynamic and reciprocal interaction among their behavior, environment, and personal characteristics (Bandura, 1997). As seen in Figure 1, personal characteristics include one's thoughts, emotions, expectations, beliefs, goals, and so forth. Behavior is conceptualized as a person's skills and actions. Lastly, environment is considered to be a person's social and physical surroundings. All three systems interact with each other; therefore, a change in one will influence the others as well. Reciprocal determinism indicates that people do have a say in their future, because of reciprocal interactions.

Reciprocal determinism is relevant to school learning. A child's behaviors may be the result of an interaction between the environment and his or her personal characteristics. For instance, a child may be frustrated by a mismatch between his or her academic abilities and the instruction or curriculum. This frustration may lead to disruptive behaviors, which result in the teacher becoming upset as well. Therefore, understanding reciprocal determinism may be very helpful in reducing disruptive or aggressive behaviors and in altering negative and defeating cycles. Likewise, from an academic perspective, if a child is experiencing

difficulties in a class, it is important to consider environmental issues (i.e., instruction, curriculum, home and social environment, etc.) that could be affecting the child's academic performance. Very importantly, when a school psychologist recognizes that a change in one system will influence the others, his or her following decisions should be made in favor of interventions that will have the most positive impact on that system.

—Jennifer Lang

RELIABILITY

Reliability, which is the consistency of test scores or ratings, is one of several ways to assess the quality of a measure. Three major types of reliability, including brief descriptions, are:

1. *Interrater reliability* refers to the consistency of the ratings made by two or more observers on the behavior (e.g., classroom behavior) of one or more students.

2. *Internal consistency reliability* (e.g., split-half reliability, parallel forms reliability, and coefficient alpha) refers to the degree of uniformity of the item content of a measure. In other words, the degree to which the items on a measure are similar in content to each other. To evaluate the internal consistency reliability, a single administration of the measure is given and then the degree of homogeneity of the item content of the measure is examined.

3. *Test-retest reliability* involves repeated administrations of the same measure, such as a reading achievement test, to the same individuals on two or more occasions to determine whether the test scores obtained on the measure are similar or consistent over time.

The reliability of test scores or ratings is important to school psychologists and other professionals who administer tests or conduct classroom observations in educational settings. Test scores or ratings must be reliable in order to have confidence in the results obtained from these measures or classroom observation forms. Test scores and observer ratings help educators and parents make decisions about educational programs for students and to monitor student progress in these programs. Thus, test scores or ratings need to be reliable.

—Patricia A. Lowe

See also Bias (Testing); Cross-Cultural Assessment; Ethical Issues in School Psychology; Norm-Referenced Assessment; Statewide Testing

REFLEX. *See* DEVELOPMENTAL MILESTONES; NEUROPSYCHOLOGICAL ASSESSMENT

REPORTS (PSYCHOLOGICAL)

Psychological reports are summary documents written by mental health professionals to help others understand a person and the context in which the person lives (Tallent, 1993). Reports often describe a specific referral question and review the assessment process used to derive the included interpretations and intervention recommendations. In school settings, it is most commonly the school psychologist who creates a case study report aimed at helping both family members and school personnel gain a clear understanding of the academic and/or social–emotional needs of a child and the rationale for any suggested categorizations (e.g., special education placement) or interventions. Sometimes the school psychologist is one member of a larger multidisciplinary team that works conjointly to assess all aspects of a student's individual functioning and environment, and produces one comprehensive assessment report. Diagnostic and intervention decisions reflect the collective agreement of the team members (e.g., speech pathologists, occupational therapists, school social workers, school psychologists, and teachers).

Psychological reports serve as a means of communication between school personnel (e.g., teachers, social workers, psychologists, and administrators), family members, and outside professionals (e.g., medical doctors and clinicians). Thus, the author of such documents must recognize the need for "user friendly" reports that are jargon-free and contain interpretations easily understood by all readers. Recommendations should be specific, realistic, and practical, and be written with the intent of creating positive change for the student.

Although psychological reports may vary in style and format based on the author's professional role and personal style, a typical psychological report includes the following subsections (Sattler, 2001; Wolber & Carne, 1993):

- Identifying information about the examiner and examinee
- Reason for referral
- Assessment instruments and evaluative procedures
- Background information
- Behavioral observations during the assessment
- Assessment results (often divided into two sections called intellectual/cognitive functioning and personality functioning)
- Clinical impressions and recommendations
- Summary

A useful psychological report includes only information relevant to the purpose of the report and integrates testing results, behavioral observations, and background information gathered from all necessary sources (i.e., parents, school records and personnel, medical charts, and previous psychological treatment records). Psychologists should base interpretations on assessment findings rather than on speculation. It is critical that school psychologists gather data from a variety of sources and settings in order to corroborate and/or elaborate on formal test results. All information should be reported in a clear, concise manner. Readers are more appreciative of a report that is well organized, not too complex, has practical recommendations, and has a more tentative tone than one that is lengthy, contains too much theory or jargon, comes across as authoritative, and suggests unrealistic interventions (Tallent, 1993).

Once the school psychologist's report is written, it becomes part of the student's official academic file and is subject to the legal and ethical principals and standards governing the profession. Specific ethical principles and standards regarding confidentiality, the assessment process, and the maintenance of records serve as guidelines for how psychologists should prepare and disseminate such information. Separate ethical principles and standards also address the use of word processing or computerized report writing programs. Parents and eligible students have a right to inspect and review a student's academic record under a federal law commonly known as the Family Educational Rights and Privacy Act (FERPA).

The following is a psychological report for a student named Sam. The report begins by describing the referral problems or questions to be answered through the psychological evaluation. It then describes the background or context of the problems Sam is experiencing in reading and math. This background information provides the backdrop against which the assessment tools (tests or procedures) are selected to be administered to Sam and other important adults in his environment. The results from the tests or procedures administered are described and interpreted, and conclusions are drawn regarding the factors (uncovered through the assessment process) that are contributing to Sam's educational problems. Recommendations for interventions that might help Sam improve in reading and math, which have been linked to findings, are provided at the end of most psychological reports.

Psychological Report

Name: Sam	DOB: 11/20/92
Address: Kansas	Parents: Will & Cindy
School: Blue Bird	Date of Evaluation:
Elementary (BBE)	10/6/00
Phone: (xxx) xxx-xxxx	Grade: 2nd

Reason for Referral:

Sam was referred to the CARE team in September, 1999, by his first grade teacher, K. J. The CARE team is a group of general education teachers, special education teachers, and other professionals who meet to problem solve strategies to help students experience success within the general education classroom. Miss J was concerned about Sam's low achievement in the areas of math and reading. She reported that Sam was far below his peers in these areas. Despite numerous modifications, Sam remained behind peers and the team felt a comprehensive evaluation was necessary. This is an initial evaluation to determine whether Sam is eligible to receive special education services.

Background Information:

School History

According to Sam's educational file, Sam has attended Blue Bird Elementary (BBE) since his school career started. He has never been held back; however, his kindergarten teacher did rate him as a

fair candidate for retention. He has no history of receiving special education services, but has had a modified curriculum. In first grade, CARE team problem-solving helped provide interventions and modifications to assist Sam, but little progress was reported.

Information obtained from Sam's educational file revealed that Sam's grades throughout his school history have been mostly S's (Satisfactory). In kindergarten, Sam received all S's, however, his grade card showed that there were skills he did not master by the end of the year. These skills included recognizing the alphabet out of order, recognizing initial consonant sounds, beginning to recognize words, and knowing number words. He also couldn't recite the alphabet in order until the last quarter of the year.

Sam again received mostly S's in first grade (on a modified curriculum), with S's in math, spelling, and language. The area in which he struggled the most was work habits, in which he received a U (Unsatisfactory). The teacher commented that he needed to work on listening attentively and following directions. The area in which Sam was strongest was social development. In this area he received S+'s and E's (Excellent), with his teacher commenting that he worked with others and was courteous. Up to this point in second grade, Sam has not received any official grades, but his teacher reports that he is performing significantly below peers in all areas. Due to Sam's age, he has not yet taken any standardized group achievement tests.

According to Sam's educational file, he missed 2 days during the first semester of kindergarten and 7½ days during the second semester. In first grade Sam missed 3½ days during the first semester and 12 days during the second. Sam was absent approximately 1 of every 6 days during the second half of his first grade year. There is no reported history of disciplinary problems in Sam's file.

According to Sam's psychological file, modifications used in the first grade included small group instruction for reading in the Discovery Room. Sam was allowed to retake spelling lists as often as needed, and his list was reduced to 6 words instead of 10. Praise for work well done was used frequently. Rewards, consisting of prizes from the treasure box, were earned when the teacher found him working independently. A behavior system to increase on-task behavior was utilized. Sam's workload was reduced by approximately half. The length of his reading assignment was modified, assigning him short phrases and sentences when reading class books. Sam was allowed to bring in a book from home to read to the class. Individual directions were given to him after group instructions. In spite of some growth academically, Sam is still far below peers.

Sam was described by his first grade teacher as "an extremely active and usually a happy child. He also likes to socialize with others in class." Miss J reported that Sam often had difficulty working with children in small groups in the classroom; however, Sam's current teacher reports that he displays good social skills and is able to maintain friendships with same-age peers. She states that he is not a problem behaviorally, but that there is a noticeable difference in his behavior when he hasn't taken his Ritalin. At these times he will become preoccupied with something, such as a hangnail on his finger, and lose focus. According to Sam's mother, he enjoys playing soccer and flying kites. He is also involved in farm activities.

Medical History

According to Sam's mother, there were no pre-, peri-, or postnatal complications. Sam was a full-term baby born by vaginal delivery. He weighed 7 pounds. Developmental milestones were reported as acquired within normal limits. In August of 1996, when Sam was 2 years, 9-months-old, he had an incident in which he nearly drowned in a motel swimming pool. Sam's mother suspects that he was under water for one to two minutes. When his cousin pulled him up, he had a faint heartbeat but was not breathing. After Mrs. H began CPR, Sam vomited water and resumed breathing.

In the Fall of 1999, he was diagnosed with Attention Deficit Disorder and is on Ritalin (20 mg slow-release in the morning and 7½ mg at noon). His mother believes that this dosage is working well for Sam. They do not have any behavior concerns. According to school records, Sam passed both vision and hearing screenings in the Fall of 1998.

Sam's mother reported that asthma has weakened his vocal cords leading to scar tissue and nodules. According to the speech pathologist, he had a speech/language evaluation for voice concerns at the hospital approximately a year before kindergarten, but no services were deemed needed. Sam was evaluated by the speech pathologist at BBE in the Spring of 2000. His language skills were screened with the Clinical Evaluation of Language Fundamentals-Third Edition Screening Test. Sam did not meet criterion to pass this

screening instrument. It was also noted during this screening that Sam's voice quality is hoarse and scratchy. He also had some aphonic (loss of voice) episodes while engaging in conversation. The teacher and special education teacher have mentioned Sam's voice quality as a concern. Sam's parents may want to consider consulting their pediatrician about this problem.

Social

According to multiple sources, Sam has fair to good social skills. His mother reports that she feels Sam has friends and gets along well with them. His current teacher also reports that he has same-age friends and is able to maintain these friendships. His previous teacher reported that he had some problems working in small groups; however, according to his current teacher, he works better in small groups.

Family

According to a parent questionnaire, Sam lives with his father, Will, his mother, Cindy, and his 10-year-old brother Nick. Nick is a fourth grader at Blue Bird Elementary. According to the questionnaire, there is no history of education, medical, or psychological problems among these family members. Mrs. H describes the family as fairly close, with occasional disputes, but nothing she would characterize as major problems.

Background of Referral Problem

Sam's academic functioning appears to have been a consistent concern since the beginning of his school career at BBE. He was referred to the CARE team by both his kindergarten and first grade teachers for being behind his same age peers in the curriculum. In first grade, he received various interventions and modification both in and outside of the classroom. Miss J reported some progress, but still identified him as being substantially lower than peers.

Currently, Sam's second grade teacher, Mrs. G., describes him as being significantly behind his peers academically. She describes him as being a hard worker, but not able to produce the same quality of work as his peers. She states that he often does not participate in group activities. His problems are the worst when he hasn't taken his medication and is unable to focus. During these times, he becomes preoccupied and doesn't get anything accomplished. He also struggles when Mrs. G is presenting lessons to the entire class. She feels that he becomes lost easily during these times. He is at his best when working in small groups and receiving individual attention and instructions. According to a parent interview, Sam's mother views Sam's academic progress as being inconsistent. Some weeks he does well, then other weeks he will really struggle. For example, he may do well in math for one month then say he's not interested and do poorly.

Previous Evaluations:

None.

Assessment Tools:

Classroom Observation

Wechsler Intelligence Scale for Children–Third Edition (WISC-III)

Test of Visual-Motor Integration (VMI)

Wechsler Individual Achievement Test (WIAT)

Phonemic Awareness Inventory

Developmental Reading Assessment (DRA)

Informal Oral Reading Inventory

Listening Comprehension Probe

Reading Probe

Spelling Probe

Untimed Writing Sample

Dictation Analysis

Written Language Probe

1st Grade Cumulative Math Test

Math Probe

Results:

Classroom Observations

An observation was conducted in Sam's second grade classroom during a group reading activity. Sam was on task 82.5% of the time and a typical peer was on task 92.5% of the time. When Sam was off task, he was typically looking off into space, but was never

observed to be disruptive. As the group was instructed to read aloud, Sam would watch the teacher or look at his book, but did not participate with the group.

Testing Observations

During testing, rapport was easily established. Sam appeared to be hesitant to be taken from the classroom, but quickly became comfortable in his new environment. He was excited when asked about events that had happened over the weekend and appeared to enjoy telling stories about his life. He was calm and able to sit in his chair for more than an hour at a time. Sam was both attentive and cooperative throughout the testing; however, he did ask to have several of the math questions repeated. He was persistent at tasks, such as putting together puzzles, even as they became more difficult. Due to Sam's persistence and cooperation, it is this examiner's opinion that the results are a fair representation of his abilities.

Cognitive Assessment

Sam is operating in the average range of intellectual functioning (FSIQ–95 +/– 5; 37%). No significant discrepancy is noted between Sam's average verbal comprehension/conceptualization skills (VIQ–95 +/– 5; 37%) and his average perceptual organizational abilities (PIQ–95 +/– 5; 37%). His relative strengths are in the areas of simultaneous processing and visual closure. He was able to look at a picture with an important piece missing and identify the piece.

Visual–Motor and Achievement Assessment

Sam had no difficulty copying simple shapes (circle, square, rectangle, diamond, or triangle) or simple lines (horizontal, diagonal, or vertical). He started to display difficulties when the designs became more complex (lines within shapes), but he scored in the 82nd percentile for visual-motor skills and at an age equivalence of 10 years, 6 mos. He also used the correct tripod grasp of the pencil with minimal prompting.

Compared to Sam's overall ability, his math and reading scores are lower and fall in the low average range. Sam's reading comprehension skills fell in the 7th percentile. He was able to answer questions about very simple stories that he had read, but had a hard time when the stories became longer. He would substitute words in the story when he couldn't read them based on the accompanying picture. In contrast, Sam demonstrated above average skills in the area of listening comprehension. He was able to listen to a story and then answer very specific questions about the story.

In the math areas, Sam again scored in the low average range. His Mathematics Composite score of 82 places him in the 12th percentile. His strategy on most of the problems was to count with his fingers. This strategy was often used inaccurately, particularly with story problems. Sam had problems counting with his fingers when the numbers presented were larger than 10. On some problems, he appeared to use no strategy at all; quickly stating a random answer.

Formal and informal measures and curriculum-based measurements (CBMs) were administered in the Spring of 2000 by the resource teacher to gain a more complete picture of Sam's functioning. The following measures are grouped by achievement area.

Reading

The Phonemic Awareness Inventory was administered to assess Sam's understanding of spoken language and how language fits together. Sam was able to identify words that were the same and different (fat-bat, nut-nut), and create a rhyming word to match a word given to him. He was able to name the sound he heard at the beginning, middle, and end of words. Sam was also successful at counting the number of syllables in a word and blending speech sounds. Syllable segmentation, breaking a word into its individual sounds, leaving off beginning and ending sounds, and replacing sounds was difficult for Sam.

A Developmental Reading Assessment (DRA) was administered to assess and observe Sam's development as a reader.

Oral Reading –

Level 3	Independent	100% accuracy	Grade 1.0
Level 4	Instructional	96% accuracy	Grade 1.1
Level 6	Frustrational	85% accuracy	Grade 1.2

There were several strategies that Sam was observed to use during the assessment. Sam had left-to-right and top-to-bottom directionality for reading. He was able to differentiate words and letters and had one-to-one matching when reading early predictable books. He used his finger to track each word as he read

with prompting. Sam was also able to look through the pictures in a book before actually reading them and draw pertinent information from the pictures. He commented on each picture as a separate event.

Sam read very slowly, methodically, and word-for-word, especially as the text became more difficult. When Sam came to a word in the text that he did not know, he would pause and try to sound the word out. He did not appear to be looking at the pictures for clues and he did not reread to check if the word made sense.

An analysis of Sam's reading errors show that his most frequent reading error was substitution. In other words, he read an incorrect word for the word written in the text (there/here, where/why, etc.). When Sam substituted an incorrect word, the word he read was frequently graphically similar at the beginning 73% of the time. The substituted word was graphically similar in the middle 36% of the time and similar at the end 18% of the time. Sam's errors did not change the meaning of the sentence 27% of the time, while he substituted a word of the correct class (noun for a noun, adverb for an adverb) 45% of the time. Sam self-corrected 27% of the errors that he read.

An informal oral reading inventory was administered to determine an instructional reading level.

Independent level	Level	Preprimer
Instructional level	Level	Primer
Frustrational level	Level	1st grade

A listening comprehension probe was administered to assess Sam's ability to understand and interpret oral language when a story or information was read to him. Passages from the QRI (Qualitative Reading Inventory) were read aloud to Sam. He was then asked to recall as much information as he could from the passage, and also answer explicit questions about the passage.

Instructional level	level 1 (first grade) 100% explicit, 63% implicit

When asked to recall information on his own about the passages read to him, Sam was able to recall events from the story. He was able to discuss background information, events from the story, and how the story was resolved. When asked direct questions about the passages that were read, Sam was capable of discussing what he remembered from the passage. It was easier for Sam to remember direct information from the text rather than information he had to infer.

On the CBM reading probe administered to Sam in January of his first grade year, he was able to read 11 words per minute. The typical range of scores for other first graders in the district was 0–110. In April of the same year, he was able to read 14 words per minute, with the typical range of scores being 10–168.

Spelling

Sam was administered a spelling probe (Grades 1–2) to show his knowledge of basic spelling skills. On this probe, he correctly spelled 9 out of 20 words, or 45%. According to the assessment, Sam's spelling skills fall slightly above the first grade level of 8/20 or 40%. In looking at the results of the assessment, it is apparent that Sam is beginning to understand spelling rules. However, when asked about spelling in tests and daily work, his teacher reports that he is on a modified list and that his spelling is very inconsistent.

Written Language

On an untimed writing sample, Sam was asked to choose one of several photographs to write about. He was then provided with unlimited time to write as much as he wanted about the picture. Sam chose a picture of a boy with a falcon over his head. He created a 10-word story that described what was happening in the picture and what the bird was doing. There were 4 spelling errors (60% spelled correctly) in the passage, and Sam did not include any punctuation in the story. Sam also used capital letters in the middle of the sentence and at times put capital letters in the middle of words.

On a dictation analysis task, Sam was asked to dictate a story to the administrator after making a story map with administrator assistance. Again, he was given some pictures to look at, and he chose to write about a cat lifting weights. Sam needed some assistance in order to come up with ideas to put on the story map. He dictated four sentences. When read back to Sam, he did notice two mistakes and made appropriate changes to make the story more fluent.

On the CBM written language probe administered in April of 2000, Sam scored 13 in the area of Total Words Written, with scores of typical peers in the district falling in the range of 8 to 37. He scored 10 in the area of Words Spelled Correctly (range = 3–31), 5 in the area of Correct Word Sequence (range = 0–28), and 10 in the area of Incorrect Word Sequence (range = 0–17).

Math

On a first grade cumulative math test, Sam completed 61% correctly. He was able to count objects and order numbers to 99, but had difficulty completing addition and subtraction facts, determining fractional parts of a set, determining appropriate measurement, and solving word problems.

Sam scored 88% on the computation probe, which included problems such as single-digit and double/single addition and subtraction. Sam used finger counting in order to solve most of the problems, although he did know some facts by memory. In the problem 10 + 5, he made a reversal in his numbers by answering 51.

On questions about money, Sam identified the names and knew the value of all the coins (quarter, dime, nickel, penny). He was able to identify time to the hour and half hour, and was able to create those times. He was unable to identify or create times for 15 minutes after the hour, and he often reversed where the hour hand should be for the 15 minute times. He was able to count by 2's, 5's, and 10's without assistance. He could also count backwards from 10–0 and from 20–0.

On the CBM math probe administered in January of 2000, Sam received a score of 10 for addition, with the typical range of peers in the district being 0 to 45. He scored 9 in the area of subtraction, with the range being 0 to 29, and 9 in mixed math, with the range being 0 to 32. On the April math probe, Sam received a score of 6 for addition, with a range of 11 to 66, 10 for subtraction, with a range of 1 to 36, and 9 for mixed math, with a range of 0 to 46.

Personality and Behavioral Assessment

According to interviews with Sam's mother and current teacher, he is not a problem behaviorally, although he does have problems focusing (particularly when not on medication). On a parent questionnaire used to gain more information about how Sam acts at home, Sam's mother reported that she sees Sam's personality as "quiet, sensitive . . ." a child who likes to "play alone as well as with others." She also reported that he is "fun-loving, humorous, and kind and thoughtful of others." Sam's mother checked the following characteristics on the parent questionnaire regarding Sam: "he has difficulty handling criticism, he is shy but truthful and creative, with a respect for authority." She feels he is easily upset and has difficulty following directions as well as short attention span. She finds the short attention span

and difficulty completing tasks the most difficult thing about raising Sam.

Summary and Conclusions:

Sam demonstrates a significant gap in achievement in the curriculum when compared to same-age peers. This gap has not narrowed in spite of small group instruction all year and extreme teacher modifications to his instruction and curriculum.

Although Sam's overall intellectual functioning falls in the average range, his academic functioning is significantly lower in most areas as measured by a standardized achievement test, curriculum-based measurements, cumulative tests, and informal measures.

The area of greatest concern for Sam appears to be reading. In looking at both the CBM and DRA results, it can be determined that Sam was reading at an emergent level when evaluated in the spring of 2000. At this time, he was at least one grade level lower than his first grade peers. Sam struggles with reading, and he is unable to apply different decoding strategies when reading, such as looking at the picture, "chunking" words, or rereading to decode. In examining his reading errors, it appears that Sam often relies on the initial letter/s of a word in order to decode it. Some of his reading errors might occur because he may focus only on the initial sound, and misread the remainder of the word. When substituting words in a reading passage, the substitutions changed the meaning of the sentence 73% of the time. This makes it difficult for Sam to understand what he is reading.

Other areas of concern for Sam are math, spelling, and written language. In these areas, Sam performs lower than his overall ability would suggest and is below average when compared to peers based on both standardized and curriculum based measures.

Reports from Sam's mother and past and present teachers indicate that Sam may still experience some difficulty attending to tasks and staying focused, particularly when not taking his medication. A classroom observation and testing situations showed that Sam can be attentive and persistent under certain circumstances.

Sam's present levels of performance qualify him under law to be eligible to receive special education services for a child with a specific learning disability in the area of reading comprehension. Despite numerous modifications, Sam continues to demonstrate a severe discrepancy between achievement and intellectual ability in the area of reading comprehension. This discrepancy is not determined to be caused by a visual,

Psychometric Summary Sheet

Wechsler Intelligence Scale for Children-Third Edition
  (WISC-III)   9/11/00

Index Scores	Standard Score	Percentile Rank
Verbal	95	37
Performance	95	37
Full Scale	95	37

Verbal Subtests	Scaled Score	Percentile Rank
Information	10	50
Similarities	9	37
Arithmetic	7	16
Vocabulary	11	63
Comprehension	9	37
Digit Span	9	37

Performance Subtests	Scaled Score	Percentile Rank
Picture Completion	14	91
Coding	7	16
Picture Arrangement	7	16
Block Design	9	37
Object Assembly	9	37
Symbol Search	7	16

Wechsler Individual Achievement Test (WIAT)   9/18/2000

Composite Scores	Standard Score	Percentile Rank
Reading	81	10
Mathematics	82	12

Subtest Scores	Standard Score	Percentile Rank
Basic Reading	86	18
Math Reasoning	86	18
Spelling	86	18
Reading Comprehension	78	7
Numerical Operations	83	26
Listening Comprehension	112	67

Phonemic-Awareness Inventory

  Level 1

Whole Word Discrimination	9/9	100%
Rhyming Word Recognition	6/6	100%
Rhyming Word Application	8/9	89%
Syllable Counting	5/6	83%

  Level 2

Syllable Segmentation	5/9	55%
Oral Synthesis-Blending Sounds	14/14	100%

  Level 3

Approximation	6/6	100%
Phoneme Isolation	12/12	100%
Beginning	4/4	100%
Middle	4/4	100%
End	3/4	75%

  Level 4

Segmentation	5/9	55%

  Level 5

Phoneme Deletion	16/20	80%
Phoneme Substitution	4/9	44%

Curriculum-Based Measurements

  () = 1st grade norm

January Reading Probe

  11 WPM (0-110)

April Reading Probe

  14 WPM (10-168)   Z-score = −1.28

  Spelling-Test A (Grade 1-2)   9/20   45%

Test A Analysis

Long Vowels	4/5	(lowe/low)
Short Vowels	6/7	(letr/letter)
Consonant Blends	1/3	(thriye/try, fllat/flat)
Consonant Digraphs	1/3	(bak/back, wite/white)
Vowel Digraphs	5/5	
Vowel/Consonant/e	1/1	
Bossy 'r'	0/2	(torde/tardy, yuer, year)
Long 'A' Sound With 'ay'	1/1	
Long 'Y' Sound	0/1	(thriye/try)
Short 'y' Sound	0/1	(torde/tardy)
Diphthongs	0/1	(tooy/toy)
Schwa	0/2	(letr/letter, uther/other)
Nonphonic Spellings	0/2	(mene/many, uther/other)
Reversals- none		

Written Language

Curriculum-Based Measurement (CBM) Scores
April Writing Probes

		Median	Z score
Total Words Written:	13 (8-37)	18	–0.50
Words Spelled Correctly:	10 (3-31)	13	–0.33
Correct Word Sequence	5 (0-28)	9	–0.44
Incorrect Word Sequence	10 (0-17)	9	

Math-skills analysis (1st grade cumulative test)

Count how many objects in a collection have a given attribute	2/2	satisfactory
Compare two numbers, 0 through 99	1/1	satisfactory
Order numbers to 99	1/1	satisfactory
Find how many in all given several sets	1/1	satisfactory
Subtract to compare groups	1/1	satisfactory
Write addition and subtraction sentences	1/2	unsatisfactory
Complete addition and subtraction fact families	0/1	unsatisfactory
Identify 1/2, 1/3, or 1/4	2/2	satisfactory

Determine fractional parts or a set	0/2	unsatisfactory
Identify sides and corners of a figure, symmetry	2/3	satisfactory
Time to half hour, inches, centimeters, heavier	2/3	satisfactory
Determine appropriate measurement	0/1	unsatisfactory
Choosing correct number sentence for word problem	2/2	satisfactory
Solving word problems	2/6	unsatisfactory

CBM Scores

January Math Probes
Addition: 10 (0-45)
Subtraction: 9 (0-29)
Mixed Math: 9 (0-32)

April Math Probes

	Median	Z-score
Addition: 6 (11-66)	32	−1.73
Subtraction: 10 (1-36)	20	−0.91
Mixed Math: 9 (0-46)	19	−0.77

motor, or hearing impairment; mental retardation; emotional disturbance; or environmental, cultural, or economic disadvantage.

Recommendations:

As much extra time as possible in working with Sam by the teacher, student teacher, or paraprofessional in the regular education classroom would be helpful to increase his success. Many repetitions, as well as intensity of interaction may help him to grasp new concepts faster and easier.

Small-group instruction, with individual reinforcement for him, is the best model for keeping Sam's attention and giving him more chances for interaction and teacher monitoring of skills. A minimum of whole group instruction might be best for Sam unless he can be individually reinforced during this time.

Sam may work best in a structured classroom in which he can receive some preferential attention for task completion. A behavior system, such as the one that was implemented in first grade, may be helpful if Sam continues to have problems focusing.

Continuous monitoring of Sam's medication taking would be helpful. This might help to decrease the amount of time Sam loses focus.

Sam would benefit from further emphasis and encouragement of phonics skills, including sound and letter manipulation, which may help him sound out more quickly and accurately.

Encouraging Sam to use strategies other than sounding out, such as skipping a word and going back, may help increase his reading accuracy and fluency. Continued participation in a small-group, guided reading setting in the Discovery Room may be important to help foster the use of those other strategies. Frequent practice of sight words and repeated readings of material that Sam has already read may also help increase his reading accuracy.

Small-group instruction focusing on guided writing may help Sam increase his writing skills. This small-group focus could include practice of frequently written words, spelling, punctuation, grammar prompting, and assistance with prewriting and story development skills.

Because Sam relies heavily on finger counting in order to complete computation problems, teaching him the touch math method may help increase his computation speed and accuracy. This method will supply him with the tactile impact that he needs in order to count up or down to solve computation problems without taking as much time as counting on fingers.

Current second grade curriculum for fine-motor and visual-motor tasks is appropriate. Sam will participate in a special program sponsored by the occupational therapist called "Handwriting Day" (which has already been arranged with his teacher to take place 2nd quarter).

—Tracy K. Cruise

See also Confidentiality; Ethical Issues in School Psychology; Multidisciplinary Teams

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RESEARCH

Research in school psychology is defined broadly as any data collected systematically that may be

applied to benefit individuals primarily from birth through age 18 years Recently, however, there has been an impetus for school psychologists to study and conduct research on issues pertaining to individuals across the life span, because learning is believed to continue indefinitely. Although research in school psychology is usually conducted in schools or other educational settings (e.g., residential facilities for individuals with disabilities, therapeutic nurseries), there is no particular limitation imposed on where data may be collected. Similarly, there is no limitation placed on who may collect the data (e.g., academicians, practitioners, graduate students, or paraprofessionals). The participants in research studies may include young children, college students, individuals with specific disorders (e.g., learning disabilities, autism, attention deficit disorder), or other individuals.

HISTORY OF RESEARCH IN SCHOOL PSYCHOLOGY

In 1879, the first psychological laboratory was founded by Wilhelm Wundt in Germany, and in 1896 Lightner Witmer established the first psychological clinic at the University of Pennsylvania. Witmer is often cited as the founder of school psychology in the United States, and each year the Lightner Witmer award is given to a new scholar-researcher who has made significant contributions to research in school psychology. Although it has been generally recognized since the dawn of time that individuals differ with respect to intelligence, personality, achievement, and other characteristics, it was not until the 19th century that the scientific research on individual differences emerged. During this period, research focused on inheritance of intelligence with variables that included sensorimotor abilities (e.g., reaction time, sensory discrimination).

In 1905, the first intelligence test (the Binet-Simon Intelligence Scale) was published. Following early research endeavors, there was a period of rapid growth and development in psychological research including the measurement of intelligence; individual differences in achievement, personality, vocational interests; and numerous other domains (e.g., suitability for military duty). Research over the past 100 years has evolved in many ways—the breadth of topics investigated, the sophistication of the data collection techniques used (e.g., computers and other specialized equipment such as polygraph machines), and the

knowledge base and understanding of how to interpret research findings have grown by leaps and bounds. Additionally, ethical guidelines have emerged, and they strictly govern research practices to protect the rights of participants in all research-related activities.

TYPES OF RESEARCH AND DATA COLLECTION METHODS

In general, there are two types of research (basic and applied), and they differ in their primary goals. The goals of basic research usually involve formulating theories, establishing relationships among different psychological constructs or variables, and providing knowledge for the sake of gaining knowledge. Applied research uses the results of basic research and applies them to solve everyday problems that children and adolescents encounter or to assist school personnel in serving their constituents. Although one may think that these two types of research are mutually exclusive, nothing could be farther from the truth. In fact, they are probably inextricably bound and inform each other in a reciprocal and evolving manner.

In addition to the two broad types of research in school psychology, there are two major methods of collecting and presenting research findings: quantitative and qualitative methodologies. There are several subtypes of each method, and they tend to involve different means for collecting the data and analyzing and reporting the results. As the name suggests, quantitative methods involve quantifying something (e.g., how many words are read by two groups of second graders) and perhaps comparing groups on the variable in question. Qualitative methods usually involve describing a phenomenon (e.g., how a third grader solves a math problem) so that the process can be understood and studied via a quantitative method. However, in most research a variety of methods are used because school psychologists believe and accept that there is more than one way to examine variables. They also believe that it is important to explore any and all ways to answer questions that can be applied to help children and adolescents. In fact, school psychologists have found that flexibility in the type(s) of selected research methodologies leads to richer and more valuable outcomes. Thus, school psychology researchers often combine quantitative and qualitative research methodologies to maximize the generalizability of their findings.

DOMAINS OF RESEARCH
IN SCHOOL PSYCHOLOGY

The domains of research in school psychology include:

- Assessment
- Interventions
- Psychopathology or disorders
- Consultation
- Research methodologies

Each of these domains contributes valuable information about how children and adolescents learn, grow, and cope in today's society. Assessment research in school psychology usually involves evaluating a child's functioning in areas such as cognition (e.g., intelligence quotient [IQ]), achievement (e.g., reading), behavior (e.g., study habits), and personality (e.g., extroversion vs. introversion). For example, assessment research may investigate the impact of study habits and intelligence on reading comprehension. It also may involve determining what assessment methods may be the most useful under a myriad conditions. Although many individuals in and outside of the field have equated assessment with testing, testing is only one method of assessment. Other methods of assessment include informal and formal observations; interviews; and curriculum-based, performance-based, and authentic assessments.

Research in interventions in school psychology involves determining the nature and extent of what specific strategies or treatments may be useful for a certain gender, age group, ethnic group, or ability level under certain conditions. A wide range of interventions exists today including behavior modification, individual and group counseling, parent training, psychopharmacology, and crisis intervention. Recently, many professionals in school psychology have been active in compiling a database on the most effective interventions for learning (e.g., early literacy) and behavior problems (e.g., attention deficit disorders). Additionally, psychopharmacological interventions with young children have been widely debated topics.

Another major area or domain of research in school psychology is the development of psychopathology or psychological disorders, especially those that have a negative impact on children and adolescents' learning. Examples of developmental disorders (those disorders that begin early in life for a variety of reasons) include mental retardation, autism, learning disabilities, and attention deficit hyperactivity disorder. Research is devoted to determining the nature and causes of these disorders as well as what treatments may be most effective in alleviating or managing them. Additional psychological disorders that may be researched by school psychologists include substance abuse (e.g., alcohol and tobacco use), eating disorders (e.g., anorexia, bulimia), and severe behavior problems (e.g., conduct disorder).

Consultation is a unique intervention process that involves indirect service delivery. It is being used more and more in educational settings and includes working with other professionals, parents, and other individuals who play a part in the learning process. Research in consultation involves uncovering the best ways to effect change in an educational system as well as the best ways to engage others as helping agents in children's and adolescents' lives. Research may, for example, focus on the efficacy of consulting with classroom teachers to reduce disruptive behavior as compared to school psychological services rendered to the children exhibiting these behavioral difficulties. Several types of consultation are described in the literature including behavioral, instructional, mental health, and organizational and systems.

Finally, although it may sound strange, research in school psychology also involves determining the best research methods to use to answer questions or solve problems. Researchers are always trying to devise new and innovative methods of collecting, analyzing, and reporting data. Thus, a small but fair amount of research is devoted to increasing the utility or applicability of research methods and techniques.

COMMON TOPICS OF RESEARCH

There are many topics of research in school psychology. Most of the topics listed here fall under one of the broad domains discussed previously. This list is provided to give a sense of the breadth and depth of research topics in school psychology. Some of these topics are defined further in this volume. The most frequently researched topics in school psychology are, but are not limited to, reading and other academic domains, intelligence, instruction, special education, counseling, parenting, legal issues, ethics, professional training, violence prevention, social skills, pharmacology, and psychopathology. Trends in school psychological research are consistent with concerns of

the times, and research attempts to solve problems confronting children and adolescents in our society.

LOCATING RESEARCH IN SCHOOL PSYCHOLOGY

The primary source for reading about research conducted in school psychology is professional journals. The major school psychology journals are:

- *Journal of School Psychology*
- *Psychology in the Schools*
- *School Psychology International*
- *School Psychology Quarterly*
- *School Psychology Review*

These journals publish some of the finest research articles in the field and are highly respected by school psychologists and other professionals. They contain articles on many of the research topics identified previously and examples of basic and applied research as well as quantitative and qualitative research methodologies. Most school psychologists subscribe to and regularly receive one or more of these journals. The *School Psychology Quarterly* is the official Division 16 (School of Psychology) journal of the American Psychological Association (APA), and *School Psychology Review* is the official journal of the National Association of School Psychologists (NASP). Division 16 of the APA and NASP are the two largest national school psychology associations.

There are another 16 secondary and 26 tertiary journals that publish research and provide information on research topics. In addition, there are two other major publications produced by school psychology national organizations. *The School Psychologist* (published four times annually) is the official newsletter of Division 16 of the APA, and *Communiqué* (published eight times annually) is the official newsletter of NASP. These newsletters print research articles, book and test reviews, commentaries, current information on federal mandates, position statements, and many more interesting and important topics and features in a reader-friendly manner. APA and NASP also sponsor annual conferences in which school psychologists and other psychologists share the results of their research.

Another source of research in school psychology is the Internet and the World Wide Web. Most individuals are aware of the information explosion that

has occurred because of access to the Internet and the millions of Web sites available on-line. The Internet has become a valuable source of information regarding research on children and adolescents. However, at the same time, readers are cautioned about believing everything they read on the Internet. There are many Web sites that provide inaccurate and potentially harmful information ranging from what to expect from children and adolescents to how to treat them.

In addition, there are literally thousands of texts that publish the results of quantitative and qualitative research, theoretical articles, and professional opinions. Space limitations preclude the listing of many of these texts. However, there are several excellent texts devoted to school psychology research, practice, and ethics. Although these texts are written for professionals in the field, they may be helpful to parents, teachers, and others who have an interest in the well-being of children and adolescents. These texts include *Best Practices in School Psychology-IV; Children's Needs II: Development, Problems and Alternatives; Helping Children at Home and School: Handouts from Your School Psychologist* (all published by the NASP) and *The Handbook of School Psychology-Third Edition* (published by John Wiley).

TRENDS AND FUTURE DIRECTIONS IN SCHOOL PSYCHOLOGY RESEARCH

It is difficult to state exactly what the trends and future directions in school psychology research are, because there are many and they constantly change with the times and sociopolitical agendas. However, the following three areas have been the focus of attention in recent years and will probably continue to be researched in the years to come. The first area is violence and violence prevention. Almost everyone is aware of the amount of violence in American society as well as in other societies around the world. Unfortunately, a high percentage of violence occurs in schools, ranging from bullying to the use of deadly weapons. School psychologists are especially adept at conducting, disseminating, and consuming research in violence prevention and related areas. Funding for violence prevention has been very high for many years and probably will not be decreased any time soon.

A second trend of school psychology research is early intervention. There is little doubt that prevention of and early intervention for learning and behavior

problems benefit many children. In addition, from an economic perspective, early intervention may save millions of dollars in health care, special education costs, and so forth. Although it is known that prevention and early intervention are viable "treatments" and that they work in general, the focus of research efforts should be directed toward determining what works for whom under what conditions. When assessment and interventions for young children are streamlined, positive effects on society as a whole may occur.

The third trend of research in school psychology may be called *disorder-specific* interventions. This research involves uncovering what constitutes the most effective treatments or interventions for specific learning and behavior problems. For example, it is now known that increasing young children's phonological awareness (including awareness of sound– symbol correspondences) assists them greatly in learning how to read. Also, it can be helpful for young children who already demonstrate difficulties in learning how to read. Another example is behavior modification, which is used to treat children and adolescents who exhibit a wide range of behavior problems. Although neither of these "interventions" has been the only one to be successful for these difficulties, the research literature clearly shows their superiority to other forms of treatment.

It seems that an additional area that needs to be explored continuously is how school psychologists can apply what is learned from research to educational settings as well as how practice or work that takes place in applied settings can inform research. As Phillips (1999) indicates in *The Handbook of School Psychology-Third Edition,* "But science and practice are still not joined in the most meaningful and significant sense, and if future efforts are to be more successful, both the science and the practice of school psychology must be changed, even transformed, in important ways" (p. 56). Thus, constant efforts must be directed at the science–practice link if there is to be a significant benefit to our children and adolescents in educational settings.

In conclusion, research in school psychology includes a range of methodologies, is conducted by individuals who work in various settings, and may be basic or applied in nature. Research in school psychology, together with research from other branches of psychology, has provided practitioners, parents, educators, and others with essential information that

has promoted the well-being of children and society as a whole. Research is exciting in that countless problems that have confronted our society, once deemed too insurmountable, have become more manageable through ongoing research efforts. Research has improved our knowledge of and ability to intervene with certain disorders, reduce the prevalence of other disorders, assist children to learn more effectively, facilitate parenting skills, enhance self-esteem, reduce violence, and so forth. There will always be a great need for more research because there will always be new questions to answer—research will, over time, provide those answers. What needs to be done and how it can be done remain unanswered, yet all questions may be answered via research in school psychology.

—*Vincent C. Alfonso and Melissa B. Tarnofsky*

See also Careers in School Psychology; Diagnosis and Labeling; Division of School Psychology (Division 16)

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RESILIENCE AND PROTECTIVE FACTORS

RISK AND RESILIENCE

Risk and resilience have been conceptualized as opposite poles "of individual differences in people's response to stress and adversity" (Rutter, 1987, p. 316), with risk representing the negative pole (e.g., succumbing to adversity) and resilience the positive (e.g., overcoming adversity). Over the past five decades, a large and consistent body of research has shown that children's futures are made considerably dimmer by exposure to multiple, chronically adverse living conditions such as poverty, family dysfunction,

parental illness or incompetence, abuse, and poor physical health. Negative outcomes of these conditions include (Doll & Lyon, 1998):

- Increased delinquent activity/criminality
- Lower measured intelligence
- Increased educational and learning problems
- Increased likelihood of physical and mental health problems
- Increased likelihood of teenage parenthood
- Increased likelihood of unemployment
- Decreased likelihood of social competence

However, most of these same studies describe complex transactional relationships by which vulnerable children are protected against adult dysfunction through an interplay among characteristics of:

- The child (e.g., easy temperament, achievement oriented)
- The caregiver (e.g., a desire to protect the child from burdensome family hardships)
- The environment (e.g., a high level of support from extended family, friends, and other adults, including those in schools)

Taken together, the results of these studies suggest that understanding the dynamic ways in which individuals successfully negotiate risk situations holds more promise for understanding resilience than amassing lists of discrete attributes of presumably resilient individuals (Doll & Lyon, 1998).

Resilience research, therefore, is no longer preoccupied with describing static or isolated patterns of risk and resilience. Instead, attention has shifted toward: (a) explaining the specific mechanisms by which constellations of risk propel a child toward poorer adult outcomes, and the ways in which these mechanisms are interrupted by protective factors (Rutter, 1987); and (b) understanding how these mechanisms organize into developmental trajectories that facilitate or hinder adult competence. This understanding is dependent on sources of risk and resilience at different points in children's lives, variables that change the magnitude and direction of their lives, and the points in time when these influential variables are introduced, as well as how they are maintained. Addressing both aspects of negotiating risk (e.g., specifying mechanisms and investigating their influence on developmental trajectories) is essential if

social and educational programs are to be successful in helping protect vulnerable children.

PROTECTIVE FACTORS

Although the precise mechanisms underlying resilience are just beginning to be understood, several decades of longitudinal research provide at least working knowledge about protective factors that are key to ameliorating conditions of risk. These protective factors may be organized into two groups, those pertaining to characteristics of the individual and those related to the context or environment (Doll & Lyon, 1998).

Individual Characteristic Protective Factors

- Intellectual ability
- Positive temperament or easygoing disposition
- Positive social orientation, including close peer friendships
- High self-efficacy, self-confidence, and self-esteem
- An achievement orientation with realistically high expectations
- A resilient belief system, or faith
- A higher rate of engagement in productive activities

Contextual Protective Factors

- A close, affectionate relationship with at least one parent or caregiver
- Effective parenting (characterized by warmth, structure, and realistically high expectations)
- Access to warm relationships and guidance from other extended family members
- Access to and relationships with positive adult models in a variety of extrafamilial contexts
- Connections with at least one or a variety of prosocial organizations
- Access to responsive, high-quality schools

While these protective factors may appear simple at first glance, it must be remembered that they unfold within the complex and continuous process of human development. As Pianta and Walsh (1998) have noted, "vulnerability and protective mechanisms operate within a window of opportunity—a period of relative plasticity—when responses to risk are being formulated"

(p. 414). Hence, protective factors may be best understood as a complex transaction between the individual and his or her contexts, with issues of timing and quality of relationships being critical in ameliorating risk and facilitating development of competence.

THE FUTURE OF RESILIENCE RESEARCH AND PROGRAMS

Most researchers agree that the most powerful means of uncovering resilience mechanisms will be found in prospective, longitudinal prevention studies, where processes thought to promote resilience and reduce risk are deliberately implemented and their impact tracked over time in relation to important adult outcomes. Such studies have the potential to reveal the intricate relationships between early precursors and later outcomes that stretch across childhood and adolescence into adulthood. These studies must begin in early childhood in order to examine mechanisms and processes operating during critical early developmental periods. The investigations must be prospective and manipulate variables systematically to clarify links between mechanisms and later outcomes, elucidating trajectories that Robins and Rutter (1990) have termed the "straight and devious pathways from childhood to adulthood."

These types of studies will require different research designs, data collection methods, and data analysis techniques than have been used in most previous research on risk and resilience. Additionally, because protective factors are typically maintained within caregiving relationships that are authentic and persist over time, newer studies will need to occur in natural environments rather than laboratory settings.

This kind of research stretches across decades and requires that we rethink the systemic supports for psychosocial intervention/prevention programs that now exist. Longitudinal prevention studies will require funding that extends beyond the three- to five-year periods of most current social science grants. These studies will demand dependable collaboration between youth service providers with access to families and researchers with the methodological sophistication to examine risk and resilience relationships.

Schools can play a vital role in the advancement of resilience research by virtue of the fact that they deal daily with the problems of students who are seriously at risk for a wide variety of poor educational and psychosocial outcomes. Schools contain a large and captive audience of at-risk students who would be difficult to aggregate under other circumstances for purposes of long-range prevention and intervention efforts. However, schools need to be mindful of the fact that resilience programs represent yet another area where it may be easy to place "the cart before the horse." The research base on resilience is still developing, and as yet only a partial understanding of the mechanisms involved in successfully negotiating risk situations has been achieved. Children who live in conditions of chronic risk are unlikely to profit from programs that are short-lived, poorly organized, or do not plan for follow-through from grade to grade and from school building to school building. Such programs often represent popularized notions of resilience that are based loosely on resilience research, if at all. Regrettably, a number of the current resilience efforts in schools seem to be of this ilk. Such programs seem destined to go the way of the numerous educational fads that have preceded them, but in the process may also damage the prospects of those programs that are supportable. Pianta and Walsh (1998) have provided a set of generalizations for school-based programs aimed at fostering resilience. These include:

- Mobilize resources early in the interest of interrupting cycles of risk.
- Pay close attention to adult-child and peer relationships in the service of building educational and social competence.
- Provide only comprehensive, integrated programs to children and youth rather than discrete skills-based or isolated pull-out programs, which offer little hope of long-term impact.

Programs based on these broad principles may well succeed in interrupting chronic cycles of risk and promoting resilience in many school-age children and youth.

—Mark Lyon

See also Abuse and Neglect; Attention Deficit Hyperactivity Disorder; Divorce Adjustment; Dropouts; Learned Helplessness; Self-Concept and Efficacy; Self-Injurious Behavior; Violence in Schools

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RESOURCE ROOMS

Since 1975, the Resource Room has been an alternative instructional placement for students who are eligible to receive special education services. A less restrictive alternative to self-contained classrooms, the Resource Room option allows the student to spend the majority of the day with grade-level peers. The student comes to the Resource Room for no more than a few hours each week. In the Resource Room, teaching methods geared to students with learning differences are employed. It is not a study hall or a place for review. Rather, Resource Room instruction provides an alternative to the general curriculum in specific academic areas (such as reading or arithmetic), taught by trained special education teachers, to meet the needs of the individual student. Resource Room placement is appropriate for the student who needs more intervention than can be provided in a regular classroom.

—Cheryl H. Silver

See also Least Restrictive Environment; Special Education

RESPONSE COST. *See* APPLIED BEHAVIOR ANALYSIS; BEHAVIOR ASSESSMENT; BEHAVIOR CONCEPTS AND APPLICATIONS; BEHAVIOR INTERVENTION

RESPONSIVENESS TO INTERVENTION MODEL

The term *learning disabilities* is a disability category that includes persons with severe underachievement in academic areas that is caused by a neurological delay or dysfunction. This underachievement is not related to mental retardation, sensory impairments or environmental influences such as lack of educational opportunity or poor instruction. The history of learning disabilities (LD) has included much controversy about the procedures and criteria for identifying students with LD. Responsiveness to intervention (RTI) has gained momentum as a means of determining whether a student has a learning disability. RTI is an assessment method that incorporates intense instruction focusing on improving the LD student's skill deficits (e.g., word recognition deficits) with careful monitoring of the student's progress. RTI intends to rule out that poor instruction is responsible for the student's skill deficits. Thus, RTI can be very helpful for assessing the quality of instruction for all students in a school.

RTI is proposed as a valuable model for schools because of its potential utility in identifying students with LD and preventing academic failure among all students. Students need and benefit from a close match of their current skills and abilities with the instructional and curricular choices provided within the classroom. When a mismatch occurs, student learning and outcomes are lowered. For some students, typical classroom instruction is appropriate and meets their needs, but for others, success is not easy. The hypothesis is the earlier that these floundering students can be identified and provided appropriate instruction, the higher the likelihood that they can be successful and maintain their class placement. Thus, their underachievement is reduced or eliminated.

Some advocates propose that RTI can have an important role in LD determination because of its emphasis on careful monitoring of student learning and providing high-quality instruction. One commonly accepted characteristic of LD is that students with LD do not learn at the same speed or level as other students with similar age, educational opportunities, and assessed ability level. They are regarded as underachievers. This intrinsic difference means that the difficulties are attributable to the youngster, presumably because of an undetected neurological problem, and not the classroom instruction.

The use of aptitude-achievement discrepancy formulas was one way of quantifying a student's level of underachievement. The underachievement was computed by calculating the difference between a student's ability score (from an ability test) and achievement score (from an achievement test). If the

difference or discrepancy between these two scores was of sufficient magnitude, the student was considered as having significant underachievement. RTI provides another method of assessing underachievement. Students who are underachieving even when they are provided high-quality instruction might have a learning disability.

RESPONSIVENESS TO INTERVENTION CRITICAL FEATURES

RTI as an assessment method is designed to match students with appropriate instruction, thereby helping learners who are experiencing difficulty. Therefore, RTI may be one of the best new approaches for linking assessment with instruction. The core features of RTI include:

1. *High-quality classroom instruction.* Students receive high-quality instruction in their general education setting. Before students are singled out for specific assistance, one has to have assurance that the typical classroom instruction is of high quality. The quality of instruction is based on numerous considerations including that the instructor is adequately prepared with appropriate background education, delivers the curriculum as intended, uses appropriate instructional and assessment methods, and is consistent in instruction. Comparing students' learning rates and achievement in different classrooms at the same grade level is one means of assessing the quality of instruction.

2. *Research-based instruction.* General education's classroom practices and the curriculum vary in their efficacy. Thus, ensuring that the practices and curriculum have demonstrated validity is important. Research-based instruction means that appropriate experiments have been completed that demonstrate the efficacy of the particular instructional methods and curriculum. If not, one cannot be confident that a student's limited gains are independent of classroom experiences.

3. *Universal screening.* School staff conducts universal screening of all students' academics and behavior three times per year (e.g., fall, winter, and spring). This feature focuses on specific criteria for judging the learning and achievement of all students, not only in academics but also in related behaviors (e.g., class attendance, tardiness, truancy, suspensions, and disciplinary actions). The screening results are useful in two ways. First, the results can indicate the quality of classroom instruction and possible changes in teaching, curricula, or instructional methods. Second, those screening results are applied in determining which students need closer monitoring or an intervention.

4. *Continuous progress monitoring.* Students' classroom progress is monitored continuously. Thus, staff can readily identify the learners who are not meeting the classroom-level benchmarks or other expected standards. Progress-monitoring data are collected weekly or during alternate weeks. Various curriculum-based assessment models are used in this role (e.g., number of words read correctly from the reading curriculum or arithmetic problems correctly solved within a fixed time interval, such one or two minutes).

5. *Research-based interventions.* When a student's screening results or progress monitoring results indicate a deficit, an appropriate instructional intervention is implemented, perhaps an individually designed instructional package or a standardized treatment. The decision whether to use an individually designed instructional package or a standardized treatment is made when the school or school district in setting up their procedures. In some school districts, both approaches are used in a fixed sequence. If the student doesn't respond to the standard treatment protocol, an individually designed intervention is determined and implemented.

The standardized treatment protocols are the interventions that researchers have validated as effective, meaning that the experimental applications were completed with the proper experimental controls to demonstrate that the intervention works. School staff is expected to implement specific, research-based interventions to address the student's difficulties. These interventions might include a "double dose" of classroom instruction and/or different instructional method. These interventions are not adaptations of the current curriculum or accommodations, because one would expect those procedures to be implemented already. Research-based interventions are 8 to 12 weeks

in length and are designed to increase the intensity of the learner's instructional experience. These protocols include specific information about the number of minutes per day, the number of days per week, the number of weeks that an intervention will be implemented, as well as the specific skills addressed, where the instruction will be provided, who will provide the instruction, and the materials used for instruction and assessing progress. Furthermore, the following two procedures should be implemented to ensure that a robust outcome is obtained and that it is directly related to the intervention(s):

1. *Progress monitoring during interventions.* School staff uses progress-monitoring data to determine interventions' effectiveness and to make any needed modifications. Carefully defined data are collected, perhaps as often as daily, to provide a cumulative record of the learner's response to the intervention. This progress monitoring is very specific in that the tasks and responses are very closely tied to the specific intervention the learner receives. These assessment data often do not have the normative information that permits comparison with other classmates or peers.

2. *Fidelity measures.* While the classroom instruction and interventions are designed, implemented, and assessed for learner effectiveness, fidelity measures are completed on individuals providing instruction. A fidelity measure indicates the degree to which the intervention was implemented as intended and with consistency. Staff members other than the classroom teacher have an important role in completing fidelity measures, which can be an observational checklist of critical teaching behaviors.

RESPONSIVENESS TO INTERVENTION ATTRIBUTES

RTI has been implemented in a number of different ways. Some attributes common to the many different RTI versions include:

- Multiple tiers of increasingly intense student interventions. That is, if student progress is unsatisfactory, then a more intense dosage of instruction is considered (e.g., Fuchs & colleagues

2003). Thus, these tiers of interventions are often described with the public health framework of primary, secondary, and tertiary. The primary intervention is for the population of students in a school (e.g., students in a classroom). Students who need a stronger intervention are provided a secondary level intervention. The tertiary tier is for those students needing the most intense of all available interventions. Interventions continue for 6 to 12 weeks, and intervention cycles may be repeated.

- Implementation of a differentiated curriculum. The differentiated curriculum means that students have the option to receive a different curriculum for their secondary or tertiary intervention. The assumption is that a different curriculum and its instructional methods might better address the students' learning difficulties. Students in a secondary or tertiary RTI tier are provided a curriculum that addresses the specific deficit indicated by the screening results or classroom progress monitoring. An area of concern is that schools do not have clear guidelines about how the intensity of instruction needs to be increased (e.g., size of grouping, amount of time, and choice of intervention).

- Instruction delivered by staff other than the classroom teacher. Classroom teachers have a significant responsibility for all learners in the primary level of intervention and integrating the higher tiers of instruction and curriculum provided to students. Resource staff (e.g., a reading teacher or a title I teacher) deliver instruction to learners at the higher tier levels.

- Varied duration, frequency, and time of interventions. The different intervention tiers can vary in several features (e.g., duration, frequency, staff roles, and time). A characteristic of RTI models is that those features are specified for the learners so that teachers, parents, and other staff involved have a clear blueprint for understanding the student's intervention.

- Categorical or noncategorical placement decisions. School district staff implement RTI using categorical and noncategorical service delivery models. In a categorical model, the students' disability is considered in the grouping of students (e.g., students with learning disabilities received instruction with other students with learning disabilities). In noncategorical models,

the students' disability areas are not of primary consideration in providing instruction. This noncategorical feature is attractive to many educators who believe RTI can fit with their broader framework for serving students with varied disabilities.

- Prevention and LD identification. RTI has application for preventing academic difficulties and for LD identification. As a preventive, early intervention framework, RTI can inform parents and staff about youngsters who are not progressing as well as their peers and help inform parents and staff about the appropriateness of selected interventions. For LD determination, RTI provides a framework for ensuring that students have received appropriate learning experiences as required in LD identification. One attribute of LD is that the students have not achieved commensurate with their peers when given appropriate learning experiences. Other parts of LD identification require that the students demonstrate a significant discrepancy between ability and achievement and that the discrepancy is not related to other factors such as other disabilities or educational, economic, or cultural differences.

RESPONSIVENESS TO INTERVENTION ISSUES

With the increasing emphasis on having a scientific basis for practices, RTI is noticeably lacking in supportive scientific evidence. The concept has broad appeal as a prevention model for reading and behavior problems and some experimental evidence supporting that application. To date, however, broad scale, rigorous experimental or evaluative evidence is lacking for RTI's application for LD determination. School district applications, commonly considered as important testaments to RTI's value, do not specifically identify students with LD but rather identify students for a noncategorical special education model. RTI has much to offer for improving services to students in the whole school; how RTI increases the validity of LD determination is unknown.

A second issue is in the category of "necessary, but not sufficient" information. Underachievement is considered one distinguishing characteristic of students with LD, but students can have underachievement and not have a learning disability. Aptitude–achievement

discrepancy and RTI are two distinct ways of assessing a student's underachievement. By themselves, they are not sufficient information for making an LD determination. A difficulty for the LD field remains that other features considered important to LD (e.g., average or above-average ability level, processing deficits, and uneven profile of skills and abilities) have limited empirical support. Processing deficits include a variety of specific aptitudes or abilities (such as attention, perception, recognition, short-term memory, recall, organization, and expression) that influence one's ability to understand and interact effectively and efficiently with everyday situations. The challenge is to determine the appropriateness of such processing constructs and corresponding assessments that can further differentiate students with LD from other students experiencing difficulty in the curriculum.

A critical issue for implementation is that RTI activities take place within the general education framework, and such activities as universal screening, progress monitoring, and multiple tiers of interventions rely on the close cooperation of general education staffs. RTI involves a significant shift in roles and responsibilities and the interaction patterns among staff. The working relationship among staff will be very important to successful RTI implementation and assessing that classroom-level instruction is research-based, of high quality, and implemented with fidelity. A related concern is that when a student does respond positively to an intense intervention in terms of improved learning rate and at a higher achievement level, the conditions that lead to that improvement may be very burdensome to classroom staff. Maintaining that level of intervention may be difficult, and staff might consider that a special education placement is a better option for the youngster. On the other hand, because the student was responsive to the intervention, is the appropriate conclusion that the student does not have a disability?

For some school staff, who are concerned about practicality and feasibility issues, the RTI component may look like a more complicated, intensive model of prereferral intervention. Prereferral intervention involved a set of procedures intended to reduce the number of referrals to special education. The assumption was that if classroom teachers implemented specific interventions within the classroom, the students would benefit and the costs of a comprehensive evaluation and time requirements would be reduced. While this approach was desirable, implementation

was difficult to achieve. RTI likely faces similar implementation difficulties.

An additional point to consider is that no one model of RTI exists. Current implementations differ on a number of features that influence the validity of the results:

- Number of tiers in the model
- Normative framework for cutoff scores on screening measures
- Agreement on what constitutes high-quality general education instruction
- Agreement on what constitutes appropriate interventions for each tier
- How long an intervention should be conducted
- Delineation of student responses that indicate adequate or inadequate progress to an intervention
- Specification of other necessary information as a basis for LD determination

Some other practical points include which budget will support the tiers of intervention (e.g., are screening and interventions a general education or special education activity?) and at what point do parents need to be involved and due-process protections applied? Due-process protections are the legal safeguards that are afforded to parents in relation to schools' assessment and intervention activities with children. An example of those protections is that a parent or guardian must provide informed consent before an evaluation or change of class placement can be completed with a youngster. The due-process protections ensure that parents have a right to formal hearing if they are challenging the school's plans regarding their child.

SCHOOL PSYCHOLOGIST'S ROLE

School psychologists potentially have a number of important roles in RTI models. As in their current role, they will continue to be the staff member who interprets students' learning and behavior within a developmental and psychological framework. Parents and teachers can provide excellent descriptions of students' behavior (e.g., the student has difficulty paying attention for long periods of time, can't stay in his or her seat, is aggressive toward other students, doesn't interact with peers, seems sad or depressed, has trouble sounding out words, doesn't read fluently, can't remember multiplication facts, and has trouble copying from the chalkboard to paper). Parents and teachers look to

psychologists to interpret those behaviors, provide meaning, and increase understanding. Thus, an important role is for the psychologist to interpret such behaviors within a social competency perspective (e.g., teacher-student, child-peer, or parent-child interactions) or an information processing or psychological processing framework (e.g., describing the role that attending, memory, recall, self-monitoring, and motor skill integration can have in a student's learning and achievement). The school psychologist is frequently the best and often the only resource person within a school to offer these perspectives. These perspectives will be very important in the analysis, design, and implementation of any student's RTI intervention.

Further, school psychologists' experiences in assessment and instructional and behavioral interventions will assist in RTI implementation through strategic planning, staff development, and technical assistance to school staff and parents. In a technical role, they can help in the development and implementation of behavioral observation and curriculum-based assessment measures important to student screening and progress monitoring. School psychologists can help schools address the needs of all students through accurate monitoring of students' learning rates, achievements, and behaviors, as well as the development and outcomes of interventions.

Fidelity checks are an important part of RTI. School psychologists can have an important role in helping schools establish the procedures for fidelity checks. If instruction is not of high quality and delivered with fidelity, students are perceived as having problems and efforts are directed toward those students rather than the larger issue of poor or inconsistent instruction affecting all students.

—*Daryl F. Mellard*

See also Learning Disabilities

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RETENTION AND PROMOTION

Grade retention is defined as the practice of requiring a student who has attended a given grade level for a full school year to remain at that same grade level for the following school year. Other commonly used terms to describe grade retention are "being retained," "being held back," "nonpromotion," and "flunking." Recent estimates suggest that 5% to 10% of students are retained annually in the United States, which translates to more than 2.5 million children every year who are required to complete an extra year of school. The use of grade retention as an academic intervention has increased over the past 30 years. Grade retention is increasingly popular within the current sociopolitical climate, which emphasizes high standards and accountability.

Considering its popularity as an academic intervention, one might assume that grade retention is highly effective and beneficial for students who are struggling—academically, behaviorally, and/or socially—within the school context. However, the convergence of research suggests that grade retention is quite the opposite—in other words, it is an ineffective and discriminatory policy. Considering the abundance of information research has provided regarding the effectiveness (lack thereof) of grade retention as an intervention to address academic, social–emotional, and behavioral problems, the increasing use and expense in the United States has led to numerous debates. The relevant research provides essential information regarding:

- Individual, family, and demographic characteristics of retained students
- The effectiveness of grade retention in addressing academic, social–emotional, and behavioral problems
- Long-term outcomes associated with grade retention
- The perceived stressfulness of grade retention from students' perspectives

CHARACTERISTICS OF RETAINED STUDENTS

Numerous studies have examined the gender and ethnic characteristics of retained students. Boys are twice as likely to repeat a grade as girls, and retention rates are higher for minority students, particularly African American and Latino children. In general, retained students have lower achievement scores relative to the average student in a classroom. Yet, it is essential to consider additional characteristics of this population because low achievement is not a distinguishing characteristic among retained and promoted students when studied in isolation. Compared to equally low-achieving but promoted peers, research reveals that retained students do not consistently have lower intelligence quotient (IQ) scores. However, children who are retained are more likely to have mothers with lower IQ scores than their peers who are promoted despite low academic achievement. Another significant factor in determining whether a student will be retained is the level of parents' involvement in school and their attitude toward their child's education. Low parent involvement and a less-than-positive attitude toward their child's education are associated with a child who is more likely to be retained.

Students who are retained are often reported as experiencing difficulties in both intrapersonal and interpersonal areas. Within these realms, factors contributing to the decision to retain include significantly less confidence, less self-assuredness, less engagement, greater levels of immaturity, and evidence of more behavior problems compared to their similarly low-achieving, but promoted peers. Teachers have also reported that retained students are less popular and less socially competent than their peers. Thus, it is evident that social behavior plays a significant role in the decision of whether to use retention as an intervention. Available research indicates that retained students are a diverse group of children with an assortment of challenges influencing their low achievement, behavior problems, and poor classroom adjustment.

EFFECTIVENESS OF GRADE RETENTION

Statistical meta-analyses provide a synthesis of studies of grade retention research published between 1925 and 1999. Meta-analysis methodology incorporates a statistical procedure that yields an "effect size." The use of effect sizes is a means for researchers to

systematically pool results across studies. Analyses resulting in a negative effect size indicate that an intervention (i.e., grade retention) had a negative or harmful effect relative to the comparison groups of promoted students. Meta-analyses examining the effectiveness of grade retention have included academic achievement, behavior problems, and social adjustment.

Effects on Academic Achievement

Overall, academic advantages for retained students relative to comparison groups of low-achieving promoted peers have not been demonstrated in the research. A meta-analysis of research examining the effectiveness of grade retention (Holmes, 1989) reported that among 63 published studies, 54 yielded negative achievement effects for retained students. Only nine studies revealed positive short-term achievement effects (during the repeated grade the following year), and these short-term benefits were found to diminish over time, disappearing entirely in later grades. The overall effect sizes for academic achievement outcomes in the Holmes and Matthews (1984) and Holmes (1989) meta-analyses were $-.44$ and $-.19$, respectively.

The most recent meta-analysis examining 20 studies published between 1990 and 1999 (Jimerson, 2001) revealed that 5% of 169 analyses of academic achievement outcomes resulted in significant statistical differences favoring the retained students, whereas 47% resulted in significant statistical differences favoring the comparison groups of low-achieving peers. Of the analyses that did favor the retained students, 33% of them reflected differences during the repeated year (for instance second year in kindergarten). Moreover, these initial gains were not maintained over time. Analyses examining the effects of retention on language arts, reading, and math yielded moderate to strong negative effects (ES $= -.36, -.54, -.49$, respectively). Notably, decisions regarding grade retention are often based on reading skills; however, research reveals that grade retention appears to be an ineffective intervention to improve reading skills. Thus, grade retention appears to be contraindicated for children with reading problems. These findings indicate that across published studies, low-achieving, but promoted students outperformed retained students in language arts, reading, and math. The overall average effect size across academic achievement outcomes

was $-.39$. Altogether, the results of meta-analyses examining more than 80 studies during the past 75 years, including nearly 700 analyses of achievement, do not support the use of grade retention as an early intervention to enhance academic achievement.

Effects on Social Adjustment and Behavior

Relatively fewer studies have addressed the social adjustment and behavioral outcomes of retained students. The results of these studies indicate that grade retention fails to improve problem behaviors and can have harmful effects on social–emotional and behavioral adjustment as well. The Holmes (1989) meta-analysis examined more than 40 studies including 234 analyses of social–emotional outcomes. It concluded that, on average, the retained students displayed poorer social adjustment, more negative attitudes toward school, less frequent attendance, and more problem behaviors in comparison to groups of matched controls. Jimerson's (2001) meta-analysis examined 16 studies that yielded 148 analyses of social–emotional adjustment outcomes of retained students relative to a matched comparison group of students. The overall average effect size regarding social adjustment and behavior outcomes across studies published between 1990 and 1999 was $-.22$. Related research reveals that retained students may be teased or have difficulties with their peers. Overall, results of the meta-analyses of more than 300 analyses of social–emotional and behavioral adjustment (from more than 50 studies during the past 75 years) do not support the use of grade retention as an early intervention to enhance social–emotional and behavioral adjustment.

High School Dropout and Grade Retention

There is considerable literature examining high school dropout rates that identifies grade retention as an early predictor variable. Grade retention has been identified as the single most powerful predictor of dropping out, even when controlling for other characteristics associated with dropping out. A review (Jimerson & colleagues, 2002) of 17 studies examining factors associated with dropping out of high school prior to graduation supports the findings that grade retention is one of the most robust predictors of

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Point Versus Counterpoint: Grade Retention

The case for:

The most common reasons provided in support of grade retention include: immaturity, not meeting educational standards, traumatic injuries, and personal experiences with retention (i.e., anecdotal evidence).

Immaturity—physically, socially, and/or behaviorally—is a common reason given when retention is recommended for a child in the elementary grades, the position is often advocated that this will "give the child a year to grow." In some instances, late birthdays are offered as a supporting reason provided for the recommendation of retention for many "immature" students. A phrase that is often mentioned by proponents of retention is, "It was successful for ___ when retained." Many education professionals cite examples of positive outcomes in students for whom they recommended retention. Particularly in the elementary grades, educational professionals are less hesitant to retain, believing that retention would be less deleterious for a student in kindergarten or first grade, relative to middle school or high school.

The high academic and behavioral standards expected of students beginning in the elementary years impact decisions regarding retention for students now more than ever. In some cases, if a child is unable to meet district or state standards, it is required that he or she be retained. Even if not required, anticipating that a child will experience great difficulty if promoted to the next grade level, teachers are faced with a difficult decision whether to promote or retain.

Lastly, students who have experienced a traumatic injury (e.g., brain injury) are sometimes recommended for retention. The rationale is that the student missed an excessive amount of school days because of the injury and may need time to recover and catch up with his or her peers.

The case against:

Extensive and long-term research focusing on the effectiveness of grade retention reveals that it is associated with deleterious outcomes. While short-term improvements among retained students may be noted in a few studies, the long-term negative effects of retention are consistently documented. Students who have been retained are at a much greater risk of dropping out of high school, engaging in antisocial behaviors, and experiencing poorer educational and employment opportunities. Furthermore, students at various grade levels have rated the prospect of being retained as one of the most stressful life events. Considering the cumulative evidence, students who have been retained do not excel in any areas above and beyond their lower-achieving, yet promoted peers. Thus, given the convergence of research, the use of grade retention as an academic intervention is discouraged. Instead, those interventions that have been demonstrated to be effective in facilitating academic and developmental outcomes should be implemented. The primary objective should be to promote the social and cognitive competence of students and enhance their academic success.

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school dropout. All studies of school dropout that included grade retention found that it was associated with subsequent school withdrawal. Several of these studies included statistical analyses controlling for many individual and family variables commonly associated with dropping out (i.e., social–emotional adjustment, socioeconomic status, ethnicity, achievement, gender, parental level of education, and parental involvement). Research indicates that retained students are between 2 and 11 times more likely to drop out during high school than nonretained students, and that grade retention increases the risk of dropping out between 20% and 50%.

Long-Term Outcomes Associated with Grade Retention

In addition to increasing the likelihood of dropping out of high school, grade retention is associated with other long-term negative outcomes. The results of longitudinal research provide evidence that retained students have a greater probability of poorer educational

and employment outcomes during late adolescence relative to a comparison group of low-achieving, but promoted students. Specifically, retained students are reported to have lower levels of academic adjustment at the end of 11th grade, more likely to drop out of high school by age 19 years, and less likely to receive a diploma by age 20. They were also less likely to be enrolled in a postsecondary education program, received lower education/employment status ratings, and were paid less per hour.

STUDENT'S PERSPECTIVES ON GRADE RETENTION

It is also important to consider children's perspectives regarding grade retention. In a study published in 1987, students in first, third, and sixth grade were asked to rate 20 stressful life events that included such occurrences as losing a parent, going to the dentist, and getting a bad report card. The results indicated that sixth-grade students reported only the loss of a parent and going blind as more stressful than grade retention. This study was replicated in 2001, and it was found that sixth-grade students rated grade retention as the single most stressful life event, higher than both the loss of a parent and going blind. A developmental trend was noted in both studies, with the reported stress of grade retention increasing from first, to third, to sixth grade. Thus, research indicates that children perceive grade retention as extremely stressful.

While retention may seem appealing in the short term as a solution for children who are experiencing academic, behavioral, and/or social difficulties in school, there is substantial empirical evidence contraindicating its use. Research during the past century examining the effectiveness of grade retention consistently indicates the potential for negative outcomes. In light of this cumulative research evidence, it is imperative that educational professionals and parents alike consider evidence-based alternatives (i.e., empirically supported alternative strategies) to promote the social and cognitive competence of children at risk for academic failure.

—*Shane R. Jimerson and Sarah M. Woehr*

See also Academic Achievement; Friendships; Grades; Race, Ethnicity, Class, and Gender; Special Education

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RETT'S DISORDER. *See* AUTISM SPECTRUM DISORDERS