Defining the Role of Intellectual and Cognitive Assessment in Special Education

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The re-authorization of IDEA has stimulated an intense debate over the utility of comparing IQ to achievement scores to determine eligibility under the Learning Disabled classification. The debate has spilled over into a generalized attack against the use of tests of intellectual functioning in the process of determining eligibility for special education. This paper explores the utility of intellectual assessment and the proposed alternative to diagnosing learning disabilities.

What Do Intelligence Tests Measure?

IQ tests are used to measure multiple, complex problem-solving abilities that are affected by a number of specific cognitive processes. These specific processes include, among others, abstract reasoning, concept formation, declarative memory, retrieval of semantic information from memory, working memory, attention to details, multi-tasking, pattern matching, visual-construction abilities, rapid visual identification, visuo-motor integration, verbal productivity, verbal problem solving, language comprehension, object naming, word knowledge, visual-perceptual and visual-spatial problem solving, and sequential reasoning. Intelligence tests uniquely measure the integrated functioning of all these processes to provide an indicator of the integrity of the problem-solving system. IQ tests have been developed to identify individual variability in cognitive functioning. In the hands of a trained professional, the interpretation of a child's performance on these tests can provide insight to the nature of underlying processing deficits and directions for useful modifications or accommodations needed to teach that child. A child's performance on specific subtests indicates his or her strengths and weaknesses in information processing. For instance, some children may have very poorly developed vocabulary and limited world knowledge; but have significant strengths in their ability to repeat auditory information and to rapidly identify and manipulate visual information. This child may be able to repeat information, but lacks comprehension skills to act appropriately on it. Because of this, others may believe that the child chooses to ignore or defy verbal requests or not to demonstrate what he or she has learned, which may result in punitive rather than accommodative reactions to the child's behavior.

Historically, tests of intellectual functioning were strongly influenced by the concept of 'g'. This concept implies that there is only one primary cognitive ability that accounts for an individual's performance on a wide variety of problem solving tests. This conceptualization is supported by the findings that in healthy individuals performance across *complex problem solving tasks* is highly correlated. Sophisticated factor analytic research has supported the existence of related but dissociable cognitive abilities including verbal and visual perceptual problem solving, working memory, and processing speed. These skills have been demonstrated to exhibit differential sensitivity to the effects of normal aging and brain injury. Most recently, neuropsychology and cognitive neuroscience, have expanded our understanding of how the brain processes

information. These advances have produced more sophisticated intelligence tests and increased our understanding of the processing difficulties associated with specific clinical and educational conditions such as learning disability.

It is now recognized that IQ tests measure multiple complex problem solving abilities that are impacted upon by a number of more specific cognitive processes These specific processes include, among others, abstract reasoning, concept formation, declarative memory, retrieval of semantic information from memory, working memory, attention to details, multi-tasking, pattern matching, visual-construction abilities, rapid visual identification, visuo-motor integration, verbal productivity, verbal problem solving, language comprehension, object naming, word knowledge, visual-perceptual and visual-spatial problem solving, and sequential reasoning. Intelligence tests uniquely measure the integrated functioning of all these processes to provide an indicator of the integrity of the problem-solving system.

While IQ tests are becoming more sophisticated in enabling the clinician to determine the processes affecting the child's performance on the test, clinical judgment plays an important role in determining the nature of the child's cognitive strengths and weaknesses. The application of this knowledge about the child's information processing to the child's educational planning, including remediation of deficits, modification of curriculum to take advantage of the child's learning strengths or accommodating the environment to better meet the child's needs, illustrates the true power of intellectual assessment. For instance, a child may have very poorly developed vocabulary and limited world knowledge; but have significant strengths in their ability to repeat auditory information and to rapidly identify and manipulate visual information. This child may be able to repeat what has been told to him or her but lacks comprehension skills to act appropriately on that information. The incongruence between his ability to repeat information with the inability to meaningfully apply that information may make others believe that he or she is choosing to ignore or defy verbal requests or chooses not to demonstrate what they have learned. These inaccurate perceptions may result in punitive rather than accommodative reactions to the child's behavior.

IQ Tests Are Sensitive to the Impact of Adverse Developmental Events

While some theorists suggest that 'Intelligence' is a genetically determined, immutable ability that transcends environmental influences. Neuroscientists had provided evidence that brain development and cognitive development are closely linked. Adverse events occurring in utero or post-natally that directly impact brain development concurrently impacts the development of cognitive abilities. Post-natal environmental factors are equally, including effects of the physical and social environment, play a role in cognitive development. This is due to the substantial amount of brain development occurring after birth and continuing well into the teen years. Since IQ tests measure multiple abilities, they have been found to be sensitive to a wide range of adverse pre- and post-natal influences.

As an example, researchers have found that extreme premature birth and pre-natal exposure to substances of abuse (e.g. alcohol) or specific types of medications result in cognitive deficits as measured by IQ and other neuropsychological measures. After birth, medical and experiential factors may negatively influence cognitive development. A variety of genetic disorders, such as Neurofibromatosis and Tuberous Sclerosis, affect both brain development and intellectual functioning. Medical disorders such as, temporal lobe epilepsy, sickle cell anemia, brain tumors, and hydrocephalus affect brain function and intellectual development. Physical and social

environmental events such as exposure to toxins, witnessing violence, or a head injury due to physical abuse or an accident impact the course of neurocognitive development. The medical and experiential factors reported here are just a small number of the known contributors to cognitive difficulties. This research serves as a strong reminder of the sensitivity of tests of intellectual functioning to developmental, environmental, and medical forces that impact the individual child. These children often require special education services and many have one or more learning disabilities.

The Defamation of Intelligence Testing

It is no secret that the number of children entering special education has dramatically increased in the past decade. The causes of this increase are not well understood, but one thing is certain; IQ testing has *not* caused the increase in the number of children receiving special education services. The increase is a direct reflection of the rate of referral from the classroom teacher to the multidisciplinary team. The defamation of IQ testing occurs because more and more children are being referred for testing and more parents have to experience the eligibility determination process.

The eligibility and classification system and, to some degree, the use of the term *intelligence* create negative or positive impressions of the children. The determination that a child is eligible for special education services due to a learning disability is perceived as an entitlement, while eligibility due to an emotional handicap or mental retardation is considered negatively and potentially as punitive, unless of course, the child physically appears handicapped—then services are considered an entitlement. This is illustrated by a lawsuit brought against the state of California, which claimed that IQ tests were used intentionally to place minority children in classrooms for mentally retarded children. The court upheld the claim and banned the use of IQ tests in eligibility determinations for minorities. Later, the court was petitioned to allow the use of IQ tests for determination of learning disability in minority children, but not for determination of mental retardation. This strongly implies that there is a negative perception of some eligibility classifications while others are perceived as an entitlement. This is understandable, as many parents do not like their child referred to as “Seriously Emotionally Disturbed” or “Mentally Retarded.” The connotations to these labels perpetuate the image of IQ tests as the villains, causing these children to receive positive or negative labels. There is also a perception that the nature of the placement, learning disabled versus mentally handicapped, results in superior versus inferior services and outcomes.

The criteria for classifications are not defined the same way among educational professionals, which results in various definitions of eligibility. This inconsistency is also associated with the labels chosen for eligibility classification. The labels themselves suggest “causation” rather than being descriptive of the actual problem. For instance, the term *learning disability* implies that underlying neurocognitive processes causes poor academic performance, which affects the acquisition of knowledge or skill in a particular domain. In some cases, the child may have specific processing weaknesses while in other cases the child may not speak English as their primary language. Other educational classifications such as “Serious Emotional Disturbance” and “Educable Mental Handicap” have strong negative perceptions. Serious emotional disturbance suggests that the child’s academic and behavior problems are not cognitive. Therefore, identified problems appear to be more under the child’s control. Mental retardation implies complete mental deficiency even if the child has other strengths. These labels have contributed to the confusion between the goal of the MDT between eligibility for specific services and diagnosis. If the goal of the MDT were to make a diagnosis, particularly with respect to making inferences regarding

brain-behavior relationships, then they would need sufficient training and experience in educational, psychiatric, and neuropsychological diagnostic procedures to do so. As a result of this process, there is a tendency to place children in learning disabled category because the term is more palatable and more socially acceptable.

Arguably, the terms *intelligence test* and *IQ* feed into the misapplication, misinterpretation, and negative connotation associated with the mental retardation categories. The term *mental retardation* reflects the historical concepts of "g," which suggests that there is one primary cognitive ability that accounts for an individual's performance on a wide variety of problem-solving tests. It is supported by the fact that performance of complex problem-solving tasks among healthy individuals is highly correlated and, primarily, one skill is being measured. Most measures of intelligence are moving away from this concept toward a more neuropsychologically oriented approach. Recent research supports the existence of related, but dissociable skills, such as verbal versus visual perceptual skills, and crystallized versus fluid intelligence. Working memory and processing speed also have been reliably measured with intelligence tests. Recent advances in neuropsychological and cognitive neuroscience have produced more sophisticated intelligence measures and increased our understanding of processing difficulties associated with specific clinical and educational problems, such as learning disorders. In the most recent version of the *Wechsler Intelligence Scale for Children,* (Wechsler, 2003) the clinician is encouraged to use factor scores that measure specific cognitive abilities, such as working memory, rather than to focus on a single score. Clearly, a single score does not adequately represent the sum of an individual's problems-solving abilities.

Issues of Defining and Identifying the Learning Disabled

Achievement, like many cognitive abilities, occurs along a normal continuum. Some children simply learn to read faster than others given the same instruction, just as some children learn music or art or physical skills at different rates. On standardized measures of academic achievement, by virtue of scaling, 25% of the children will display low average or lower level of achievement. These children may or may not be doing poorly in school, depending on the composition of the classroom and the relative achievement of their classmates. Using cut scores based on achievement testing alone, one could arbitrarily select a score that captures 2–25% of the population. This approach may miss brighter students who are struggling to keep up with peers in the classroom but do just well enough, through adaptive compensatory mechanisms, on testing to not be identified.

The *achievement–ability discrepancy model* is the psychometric equivalent to the definition of learning disability as an unexpected failure to learn in the presence of adequate general cognitive ability. The issue with discrepancy models is that the predictor and criterion both have some measurement error. Discrepancy values have more measurement error than the predictor or criterion in and of themselves. When the predictor and criterion are correlated, the measurement error of the difference score increases. This makes the discrepancy score more unstable and likely to change over time or between test sessions. Using a specific cut-off score based on a discrepancy score as single diagnostic criteria invites inconsistency and diagnostic unreliability. Few researchers would argue that using a single cut-off score in the absence of other evidence for learning problems is difficult to justify in the study of learning disabilities. This does not mean that the *model* of dissociation between intact general problem solving ability and specific ability to learn is invalid.

According to Pasternak (2002), there is no need to distinguish between high ability–low achieving versus low ability–low achieving students either educationally or in clinical research. These statements are driven, in part, by meta-analytic research that suggests there are small differences between low ability and high ability groups on measures related to reading and behavior. It would be illogical to assume that children of low ability, meaning they tend to score poorly or below average on nearly every test they take, would in some way outperform children with learning disabilities on measures of phonological processing, rapid automatic naming, verbal memory, vocabulary or any reading ability measure. By the same token, children who have problems learning to read will perform poorly or below average on measures related to reading such as phonological processing, rapid automatic naming, auditory working memory, declarative verbal memory, vocabulary or any reading related measures. Children with reading problems also have a higher rate of co-morbidity with attention deficit disorder and on group statistics, they appear to have similar ratings on behavior problems as children of lower ability.

The low ability group–low achievement group is an inappropriate comparison group for clinical research. The differences between the groups, particularly in the visual-perceptual domain, are not strongly tied to reading ability. If these skills were linked to reading, then the reading disabled group would not be impaired to start with as they would simply recruit their better visual-perceptual skills to help them read. The desire to study students with low ability–low achievement is related to the eligibility issue. The lack of services available for children functioning in the lower end of average to borderline range results in these children not qualifying for services that are consistent with their cognitive needs. Services tend to focus on their behavior problems that result from the discrepancy between the environmental demands and their capacity to fulfill them. This is a source of great frustration for school psychologists and advocates for this group of children who are at great risk for a number of negative social consequences due to their cognitive limitations.

When IQ Tests Should Be Used

By the time a child is referred for more intensive evaluation, it is expected that he or she has had some form of early reading screening that would have included measures of phonemic awareness, phonological processing, basic semantic abilities and rapid automatic naming. The child would have received some classroom intervention and the referral agent, the teacher, or other school personnel would be able to articulate some of the primary issues, such as the child's behavior or learning, and would have completed checklists or surveys to further refine their knowledge of the child.

At the initial stage of determining a child's eligibility for special education, it may not be necessary to complete a comprehensive assessment that includes IQ testing. An assessment of current academic skills and documented classroom observations may be sufficient. The exception to this should be for cases in which a child has a known disability with a high probability of cognitive impairment. This may include, but is not restricted to, children born very prematurely or who have

- a history of exposure to alcohol or anti-seizure medication in utero
- seizure disorder or traumatic brain injury
- genetic disorders
- autistic disorder
- documented histories of significant delays in language development

Children who have received intervention and have not made progress within one year should be referred for a more comprehensive evaluation. Progress must be defined specifically and not left to impressions. Specific goals must be set and documentation that the child has attained the goals or surpassed them must be provided. Any child who does not make adequate progress toward specific educational goals for a period of more than two years should certainly be referred for a comprehensive assessment.

The parents of a child with known cognitive impairments or strongly suspected cognitive impairments due to documented medical or developmental disorders should have the right to request a comprehensive evaluation of the child if he or she has demonstrated poor academic progress or significantly disruptive behavior. Parents should also have the right to request an evaluation of a child without known cognitive impairments but has exhibited chronic school failure despite receiving program modifications and appropriate intervention. This should not be restricted to children who are suspected of school failure due to learning disability but should include academic problems due to on-going behavior problems or impaired attention. The school psychologist should be given the authority to recommend a comprehensive evaluation of a child that has been referred for early intervention if they deem that the evaluation is necessary due to psychosocial factors or if they believe that the child may need more modification to programming than is typically offered at the initial stages of the referral process.

In terms of re-evaluation, not all children in special education services will require a comprehensive re-evaluation. Children with mild cognitive difficulties that are making reasonable progress towards their educational goals do not need a full battery of tests. These children may need an evaluation of specific cognitive areas such as executive functioning that impact academic performance as the children become older. Children with moderate to severe disabilities or multiple disabilities may need a comprehensive re-evaluation if they appear to be making no progress or in some cases regressing in their academic or behavioral functioning. This process should not be done arbitrarily such that all children need re-evaluation at specified intervals. Rather, the process needs to be interactive with the teacher, school psychologist, and multi-disciplinary team monitoring the child's progress at regular intervals. The school psychologist or the team may decide to re-evaluate at any point in the special education process.

How IQ Tests Should Be Used

Intelligence testing is a good point *at which to start* a comprehensive evaluation. IQ tests are sensitive to a number of cognitive difficulties and answers a number of questions about the child relative to children of the same age. The IQ test should be used in conjunction with some specific measures related to the age of the child and to the referral question. IQ–Achievement discrepancies may be calculated as being informative and one possible criterion for receiving services under the specific learning disability category. For instance, a 9-year-old child who has behavior problems, primarily, and has difficulties with course grades but not content mastery would be evaluated with the WISC–IV, a continuous performance test, subtests from the *Delis–Kaplan Executive Functioning System* (Delis, Kaplan, & Kramer, 2001), and a checklist for symptoms of Attention Deficit Disorder. Specific academic measures from the *Wechsler Individual Achievement Tests,* such as reading comprehension and writing may be included if these were areas of identified academic weakness. Additional measures related to mood disturbance such as the *Beck Youth Inventory* (Beck, Beck, & Jolly, 2001) may be included if deemed appropriate. The intellectual assessment provides information regarding the integrity of the child's overall problem solving ability with specific focus on working memory and processing speed as well as the differentiation of problems with the ability to understand the correct answer

versus the ability to articulate the correct answer. The child may also exhibit specific strengths such as their ability to process visual-perceptual information versus verbal information.

A battery of tests, used flexibly, by the school psychologist would be able to pinpoint the specific areas of cognitive strengths and weaknesses that would be used to develop interventions for use in the classroom. A referral for more intensive services would be based on the multi-disciplinary teams decision of the level of structure needed for the youth based on the global versus more specific cognitive limitations, disruptiveness of behaviors to other students and safety issues. The purpose of the evaluation is not necessarily to make a specific diagnosis, such as attention deficit disorder, but to identify the sources of the child's difficulty in adapting to the traditional classroom environment.

In the past, IQ tests have been used peripherally as part of the classification process. Their strength is in the purpose they serve in creating individualized interventions. The ability to create individualized interventions depends upon the cooperation and effective collaboration of the classroom teacher with the multidisciplinary team and the involvement of other school staff such as librarians, assistive technology personnel, and resource experts. The role of IQ tests should not confined as a mechanism to determine diagnosis or eligibility, although useful for such purposes, but should provide the special education team and classroom teacher a means to identify what intervention the child needs. The intervention may be a modification in their curriculum (e.g., more visually oriented projects or fewer problems per page); modifications to instruction (e.g., use of directive, concrete, simple language versus higher level, complex and abstract language); modification of classroom environment (e.g., increased structure, incentives, more breaks); or accommodations (e.g., use of external aids such as a calculator, shorter tests, tests that do not only measure ability to articulate a response but test knowledge of the correct response, as well). The multi-disciplinary team may choose to use the results of testing as part of the eligibility process but would not rely on a single score or a discrepancy score in doing so. IQ tests would not be used in isolation as other tests of cognitive functioning would be used in conjunction with IQ measures.

The IQ tests, in conjunction with other data about the child, would be incorporated into the child's individualized educational plan (IEP). The current system of developing IEPs fails to specify how the child's cognitive resources have affected their learning and behavior. The IEP tends to reflect specific academic and behavior goals for the student and provides significantly less information about what modifications are necessary to the curriculum, instruction, and educational environment to enable the child to meet those goals. Staff who have direct contact with the student should be aware of the his or her strengths and limitations, and obtain any additional training necessary to respond appropriately to the child's needs.

IQ Tests Measure Skills Related to Reading

Intelligence tests measure multiple cognitive constructs that relate to the development of reading. Two measures on intelligence tests appear to play a significant role in understanding a child's weaknesses in learning to read. Researchers have hypothesized that the working memory system, which is the ability to temporarily hold information in conscious awareness with the intent to use that information to solve an immediate problem, is comprised of three component processes. These components include a phonological or articulatory loop in which auditory information is kept active by rehearsal; a visual-spatial sketchpad that allows visual information to be maintained in active memory until necessary mental operations are performed on that information; and a central executive component, which manages cognitive resources and

attentional conflicts. Components of working memory have been identified as important contributors to efficient reading and some children with reading difficulties may exhibit deficits in these skill areas. Children identified as poor readers (decoding and comprehension) display deficits in auditory working memory and phonological short-term memory. Children with poor reading comprehension but not impaired decoding exhibited deficits in auditory working memory but average phonological short-term memory. The deficiency in auditory working memory for reading disabled children is observed in comparison to age-matched children without reading delays but not compared to younger children having the same reading level. Auditory working memory predicts reading comprehension in both skilled and disabled readers and predicts components of writing ability. Auditory working memory tasks that contain an element of storage and active manipulation of the information are good predictors of language comprehension, in general. Working memory skills have also been linked to math abilities in children and adults.

The level of a child's verbal intelligence has been found to be a predictor of his or her reading decoding and comprehension abilities. Verbal intelligence accounts for a large amount of the variance in a variety of language-based skills. The rate of a child's response to intervention for reading comprehension relates to his or her verbal ability. Among children from low socioeconomic settings, verbal ability was found to predict the children who would attain average reading skills versus those who would achieve below-average reading skills. *Reading disability* is characterized by greater difficulties in decoding single words compared to abilities in verbal reasoning and ability to comprehend aspects of written text. Children with IQ's over 100 who have a reading disorder display a stronger genetic link for phonological processing impairments than children without the large ability–reading discrepancy. In families in which a member is diagnosed with dyslexia, Verbal IQ correlates with reading comprehension in the non-affected sibling and related to reading rate, spelling, and text composition among the dyslexic group.

The link between reading and intelligence, particularly verbal intelligence, is so significant that in medical-legal and dementia evaluations reading tests are used to estimate an individual's intelligence before their injury or illness.

Legislating Clinical Practice

Requiring schools and school psychologists to eliminate or significantly restrict IQ testing as part of their clinical practice puts the government in the position of legislating clinical practice. This requirement is similar to stating that physician's treating Medicare and Medicaid patients are not allowed to order specific tests, ever! If the physician orders an MRI to be completed on a patient, it is because it has diagnostic relevance in that particular case. Legislating clinical practice has significant implications for psychologists and other professionals. In the future, it may be decided that speech-language pathologists should not use tests to diagnose language learning disabilities but rather they should simply talk to the parents and the school. They should provide service to anyone that seems like they have a language disorder. If the child fails to improve in treatment, then they can make a diagnosis. The psychologist is uniquely trained in the administration and scoring of intelligence tests. If the clinician believes that the test will provide useful, diagnostic information, they should not be legislated into not using the information in a school or other clinical environment.

Alternatives to IQ Testing

Early Screening and Intervention

Early identification of delayed language and pre-reading skills development for the purpose of identifying children in need of intervention is an excellent idea. Few researchers and educators would disagree with the importance of early identification. The goal of screening children in kindergarten and first grade for poorly developed pre-reading skills is a useful means for identifying children at risk for referral to special education. The goal of screening will be to identify the specific areas of weakness such as phonemic awareness, letter knowledge, rapid semantic access and general weaknesses in language development. Intervention is provided to individual's meeting specified criteria.

It will be important to insure that tools developed for screening children have rigorous standards in terms of psychometric qualities and validity for predicting reading problems. Also, like standardized tests of intelligence, these tests should undergo thorough review for content and prediction bias for linguistic minorities. Further, studies will need to identify appropriate cut-off scores for those to receive intervention and in consideration of the measurement error of the tool.

The screening instrument and intervention (scientifically based) program should be designed to be administered by the classroom teacher or appointed member of the schools reading support team. Children involved in this intervention should be monitored for progress in the targeted domain. For children that do not exhibit any progress, additional assessment may be required.

Effects-Based Diagnosis and Intervention

Those opposed to the use of IQ testing as part of the special education process have proposed what could best be described as an "Effects" based approach to diagnosis and intervention. Children referred by their classroom teacher for slow reading skills would be provided some form of intervention. If the child's reading improved then they would no longer need additional intervention and they would return to the standard curriculum. If they failed to respond to initial intervention, they would receive more intensive intervention. If the child failed to respond to that intervention, we could diagnose them as having a disability and provide more intensive remedial services. If the child continues to struggle despite our best efforts, they probably have an educable mental handicap and may require a different set of services. This process may take years to determine, perhaps the child will eventually get the services they need.

If this logic is applied to other specific behaviors, such as the ability to remain seated and not interrupt others, the following scenario could occur. The child that is having problems staying seated is identified by the schoolteacher and referred for intervention. An initial intervention strategy is devised and implemented. The child continues to have difficulty staying seated and continues to disrupt other children. A more intensive behavioral intervention is implemented but still does not sufficiently reduce the targeted behavior. Because the child has not responded to intervention, they must have attention deficit disorder and need medication. The child is placed on medication but continues to have problems remaining seated. The child's medications are changed several times to no effect. Because the child has not responded to expected interventions, they must have oppositional defiant disorder and need a placement consistent with those behaviors.

Ironically, the second example is not far-fetched and does occur in the absence of an adequately administered and interpreted psychological assessment. Some children with social skills impairments interrupt others and do not follow the rules. Some children with gross-motor weakness and coordination problems have difficulty remaining seated and attentive due to being easily fatigued. Even anxiety and depression may contribute to difficult to manage behaviors.

Dr. Pasternak's contention that the current system of special education is bad because it uses a "wait to fail" model suggests a seriously biased perception of the educational system and the proposed model is not very different from what actually happens. He does not give credit to the early screening and identification programs that already exist in many school districts (e.g., Childfind). He also blames a child's failure to read to poor instruction. If poor instruction were the only variable associated with problems learning to read then whole classrooms would be referred at a time. Also, children struggling with reading in the classroom do come to the attention of the teacher and the teacher will make accommodations and provide additional supports to those children. Most school districts will require that a child have been given appropriate intervention prior to making a recommendation for a more restrictive level of service. The only differences between the proposed model and the current system is the inclusion specific measures related to early reading in early intervention screening programs, specification of the types of reading interventions that should occur and the refusal to allow for further evaluation to determine if the child is getting what they need. How many years will kids need to fail in the proposed model before they can be deemed to have *failed enough* to be classified? What will this do to the child's confidence to know that they have failed all the best interventions? And what can the school do differently to help the child if they do understand the cognitive processes in play? They can always guess at what the child needs for a few more years.

The only benefit to this model is that the child will receive intervention that (at least for reading) has *some* scientific backing. The most recent re-evaluation of the National Reading Panels meta-analysis suggests the power of specific interventions such as systematic phonics instruction was significantly overstated and the actual effect size is approximately half that originally reported. There are many children, particularly those with multiple disabilities, for which these interventions will not produce any significant impact. A diagnosis should **never** be made based solely on a failure to respond to specific interventions. Poor achievement is not a diagnosis; it is a symptom that may have many different causes. A failure to understand the causes of the symptom will lead to poorly crafted interventions and inappropriate conceptualizations about why the child is doing poorly.

This model also overstates the degree to which interventions are successful in helping individual children. The average effect sizes across studies tend to be larger for non-disabled youth and are typically in the moderate effect range of about .5–.6 for improvements in reading. The number of children that make no progress is not known and the amount of progress would not likely result in a change in classification from poor reader to average reader. On a standardized measure of reading, this level of effect for a child starting in the borderline range (e.g., standard score = 70) would by the end of the intervention score at 78, also in the borderline range.

The use of this model produces a need to set criteria for establishing what is a successful response to reading intervention. Does the child need to show that they are reading at a level consistent with peers for the intervention to have worked? Does the child just need to be able to read more regardless if they are still very far behind their peers? What tests should be used to demonstrate improvement? Who decides when the child has failed enough and should be diagnosed? How does one diagnostically differentiate no treatment response from marginal treatment response? There are no established criteria for using this type of approach to make any of these determinations. All criterion measures will also have measurement error and how will this be addressed? Are the criteria biased against minorities? If decisions are left up to individual impressions of the child, the potential for stereotypes and bias is dramatically increased.

This model promotes the use of packaged intervention programs that are known to work for some children but not necessarily all children. A one-size-fits-all mentality truly illustrates a lack of

awareness that there is a large degree of variability among children with learning disabilities or with any diagnosis for that matter. The application of interventions developed for reading may not apply at all to a child that struggles to read due to traumatic brain injury, mild autism or other types of disability. Children with cognitive impairments have been found to not respond to specific interventions such as systematic phonics instruction. Individuals not responding to specific treatments are not necessarily mentally deficient, either. It will be impossible to make any type or reasonable diagnosis or individualized intervention without having some understanding of the cognitive and emotional strengths and weaknesses of that child.

Minority Issues

Dr. Pasternak suggests that IQ testing has produced the over-representation of minority youth in special education programs. It should be considered that in other settings that do not use IQ tests minorities are treated differently. IQ tests cannot be blamed for the disproportionate arrest, detainment and length of detainment of minority youth. The Office of Juvenile Justice and Delinquency Prevention (OJJDP) reports that disparity in the decision-making processes in the juvenile justice system contributes to the higher rate of minorities that are confined. It is not unlikely that a similar process occurs within the school system. IQ testing does not dictate the number of minority children in special education. The number of minority children referred for special education will dictate the number of minority children in special education. IQ and achievement tests are not used to screen children for placement in special education nor are IQ and achievement tests supposed to be the sole criteria on which a child is classified under a specific eligibility group. There is considerably higher number of minority children classified under the mentally deficient classification. Making a determination of mental deficiency requires not only low scores on IQ tests but also documented, by parent and teacher, of impaired daily living skills that are achievable by most children of the same age. The latter component is intended to prevent individual children that do poorly on testing but are not mentally deficient from being diagnosed or classified as such. If they are not able to perform the simple tasks associated with age appropriate daily living skills, then they may indeed need more help than would be offered in a traditional learning disability setting.

On the most recent revision of the *Wechsler Intelligence Scale for Children,* the average difference between whites and African-Americans is half as much as observed on predecessor versions. This smaller difference, in conjunction with appropriate use of the test, would result in fewer African-American children being placed in classes for mild mental deficiency. Hispanic-American children tend to perform more poorly than whites on verbal tests and classification of mental retardation would not be higher if visual-perceptual scores were used as the basis for making the decision. It does need to be considered that it is difficult for a child to function in an English-speaking classroom if they do not have age-appropriate mastery of the language for their age. Appropriate interventions to improve mastery of English-language may be more appropriate than receiving services for mild mental deficiency. IQ tests can help make that distinction. It has been found in Spanish speaking children that Verbal IQ and oral language proficiency measured in English predicts word reading ability in both English and Spanish but Verbal IQ measured in Spanish did not correlate with reading words in English only word reading in Spanish.

Ultimately, the way to reduce minority representation in special education is to reduce the number of children being referred. This suggests that the traditional classroom environment is not conducive for some minority children to learn. The eligibility process itself needs to be studied to understand the circumstances in which minority children may be treated differently. More

research is needed to understand the different learning needs and most appropriate learning environment for minority children.

Summary

The re-authorization of IDEA has sparked an intense debate regarding the role of IQ-Achievement discrepancies and intelligence testing in special education. Forces within the department of education have attempted to influence researchers, clinicians and politicians that IQ testing, particularly in relation IQ-Achievement discrepancy, has no role in special education. The arguments are made to suggest that there is a consensus among clinicians, educators and researchers in the fields of reading, learning disabilities and psychology about the nature and treatment of learning disabilities and teaching of reading in general.

IQ testing is a powerful indicator of the integrity of the individual child's problem-solving system. It is the only means for differentiating global cognitive impairments associated with mild mental retardation from more specific learning problems such as learning disabilities and language disorders. The profile of intellectual strengths and weaknesses provides important information about the child's educational needs. When IQ tests are used with other cognitive measures, the clinician is able to obtain invaluable information about the child's learning style resulting in appropriate recommendations for educational intervention, modification, or accommodation.

The proposed alternatives to current practices in learning disability determinations focus on the use of empirically based reading interventions that will purportedly differentiate disabled from non-disabled students and serve as the primary diagnostic mechanism. Unfortunately, empirically based reading interventions at best have only a moderate effect on improving reading and in reality have less impact. Many children will not improve only because treatment does not work for all children and the degree of improvement from these interventions will not likely to turn poor readers into average readers. No diagnostic criteria exist for making a diagnosis on the basis of failing to respond to intervention.

The elimination of cognitive testing will result in greater inconsistency in identifying and servicing children with learning disabilities. Children with special needs with be subject to the personal bias and stereotypes of the decision-makers within their school district. The number of children serviced as learning disabled with dramatically increase as it has in states that do not use discrepancy formulas. Parents will have inadequate answers to the question of why their child is failing to learn.

Tests of intelligence are a good starting point for most comprehensive evaluations. These tests are sensitive to adverse developmental and environmental events that affect brain development and subsequently impinge upon learning and adaptive problem solving. IQ tests may not be necessary for every student referred for learning difficulties depending upon the circumstances of their learning problem and their responsiveness to intervention. Many children will require comprehensive testing to understand their individual education needs. The school psychologist should be empowered to make decisions regarding the need for comprehensive/intellectual assessment.

The results of intellectual assessment should not focus on one score but evaluated for meaningful variability in information processing. These sources of variability should be further explored with more specific measures to identify the source of the cognitive difficulty and integrated with observational and functional assessments to provide a complete picture of the child's skills. It is in the identification of the profile of intellectual, academic, behavioral and psychosocial strengths

and weaknesses that interventions, modifications, and accommodations can be developed. The nature of the derived educational plan should drive eligibility decisions. School districts and program administrators will need to evaluate how their decision-making processes affects the placement and services provided to minorities. In light of changes to IDEA, there is greater potential for individual stereotypes and biases to impact decisions regarding individual children.

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