Over-identification for Special Education

A Best Practice Model

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Agenda

• Define over-identification
• Explore variables related to over-identification
• Identify 10 reasons for misidentification of students for special education
• Present a plan of action
• Discuss using current tools in a different way
• Evaluate old way—new way

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What is over-identification?

• Several groups of children affected
  – Number of children “qualified” for special ed
  – Number of children identified with LD
  – Disproportionate number of minority children identified with MR, ED, LD, and other disabilities
  – Disproportionate number of minority children with language disorders who are not identified

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Texas School Population

- A significant shift in demographics of Texas Public Schools
  - Of the almost 4 million students enrolled in 1997-1998, minorities accounted for more than half of the student population
    - 14% African American (14.3% in 03/04)
    - 38% Hispanic (43.8% in 03/04)
    - 3% Other Minority (3.2% in 03/04)
    - 45% White (38.7% in 03/04)

- Dramatic growth in some minority groups from 1987/88 to 1997/98
  - Hispanic students increased by 45% (more than double the growth rate of the total student population). African-American increase was 19%
  - Largest increase was in Other minority group with a 63% rate of growth
    - 90% of this group are Asian/Pacific Islander
    - 10% are native American
  - Only a 5% increase in white students
Texas School Population

– Shift in socioeconomic status
  • Number of economically disadvantaged students increased by 65% (52.8% of students in 2003/04)
  • Projected trends show even greater diversity
    – Greater number of Hispanic children entering school with a smaller number of white children entering (in 97-98, kinder population was 42% Hispanic; 41% White)

• Higher percentage of “problems” related to specific populations
  – More students are retained at 9th grade, and about 25% of African American and Hispanic 9th graders are retained in comparison to 10% of white 9th graders
  – Higher dropout rates for minority children
  – Higher special education enrollment for minority children

Texas Special Programs

• Enrollment of students in special programs
  – Number of students receiving special education increased by 75% from 1987-88 to 1997-98
    • In 1997-98, 12% of Texas students received special education (11.6% in 2003/04)
      – 56% of these are identified as having LD
      – 19% were identified as having speech impairment
  – Considerable variation across state in percent of students receiving special education
Texas Special Programs

– Number of students participating in bilingual education and ESL almost doubled between 1987-88 and 1997-98
  • In 1997-98, 12% of Texas students were participating in special language programs (14.1% in 2003/04, but 15.3% of students identified as LEP)
– Participation in GT programs also doubled from 1988-1998
  • Growth from 5% to 8% (7.8% in 2003/04)

Other Initiatives

• Number of children enrolled in pre-kindergarten programs increased by 72% (1987-88 to 1997-98)
• State grade retention rate of 4.7% in 2003/04
  – 6.0% of African-American children retained
  – 6.1% of Hispanic children retained
  – 2.8% of white children retained
  – 44% of children in Grade 3 who failed TAKS were retained

State Drop Outs 2002-2003

<table>
<thead>
<tr>
<th>Ethnicity</th>
<th>% of School Population</th>
<th>% of Dropout Population</th>
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<tbody>
<tr>
<td>African-American</td>
<td>14.4%</td>
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State Graduation Rates 2002-2003

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<th>Graduation Rate 2003</th>
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<td>84.2%</td>
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<tr>
<td>All Students</td>
<td>82.8%</td>
<td>84.2%</td>
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Big Picture

- In 1997-1998, 44% of all students in Texas were participating in special instructional programs (almost 2 million children) (53.6% in 2003/04 including Career & Tech program)
- Of the almost 700,000 students added to the Texas education system between 1987-88 and 1997-98, 60% were students receiving special education or bilingual education/ESL services

Teachers in Texas in 2003/04

<p>| | |</p>
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<td>Bachelors Degree</td>
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<tr>
<td>5 yrs or less</td>
<td>35%</td>
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1. Referrals are frequently based on poor TAKS scores or fear of such scores.

2. There is a failure to maximize intervention in general education prior to referral.

3. There is a belief that the focus of comprehensive assessment is to “get the child qualified”.

4. Assessment fails to identify at-risk students by targeting areas shown by research to be highly predictive of “real” learning disability.

5. Use of tests/processes that are biased against or not designed to be used with certain groups of children.

6. Lack of understanding about what constitutes a “real” learning disability.
7. Over-reliance on an ability-achievement discrepancy when interpreting test results.

8. Failure to investigate and explain performance across tests that makeup the comprehensive battery.

9. Failure to understand what is required for a “discrepancy”.

10. Inability to use data to establish educational need.

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1. Referrals are frequently based on poor TAKS scores or fear of such scores.
   - Belief that TAKS is irrelevant for special education students
   - Belief that special education students can not pass TAKS
   - Belief that special education students can be exempt from state testing program and not “count” on the campus accountability figures
   - Belief that failure on TAKS is a good indicator of a learning disability
   - Frustration of teachers who don’t know what else to do
   - Pressure from parents to exempt child

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2. There is a failure to maximize intervention in general education prior to referral.
   - Tendency to use retention as the primary intervention strategy
   - Teachers are overwhelmed with demands of students in their classes
   - Teachers are not trained in teaching students with special needs
   - Teachers are not aware of research related to intervention
   - General educators may believe that special needs students can only be taught through special education by special educators
   - General belief that these are students who are destined to fail—why bother?
3. There is a belief that the focus of comprehensive assessment is to “get the child qualified”.

- Belief that testing is all about the numbers (scores)
- Belief that test scores are infallible
- Examiners were not trained in how to interpret test results and link to intervention
- Examiners are unfamiliar with research related to the identification of children with various disabilities
- District is rigid in how test results are used
- There is little time to spend on linking test results to intervention due to case loads of examiners
- Assessment tools do not support linking results to intervention

4. Assessment fails to identify at-risk students by targeting areas shown by research to be highly predictive of “real” learning disability.

- Rely on a “wait to fail” model
- District policy to not identify students in primary grades (i.e., kindergarten)
- Examiner doesn’t know the research that identifies what is “highly predictive”
- Parents are reluctant to have a child participate in “different” instruction
- Parents are reluctant to have a child participate in general education
- School doesn’t know how to fit special needs into early intervention programs
- Disconnect between the identification of children at risk and research-based intervention

5. Use of tests/processes that are biased against or not designed to be used with certain groups of children.

- Budget constraints require that you use the tests that you already have
- Inappropriate criteria are used to select assessment tools
- The comprehensive assessment is not planned
- Test battery is not individualized to the child and the referral question
- Children are referred without a referral question
- Too quick to say that exclusionary criteria do not apply (not sure what to do when they do apply)
6. Lack of understanding about what constitutes a “real” learning disability.

- Disconnect between research and practice
- Lack of knowledge about what constitutes an underlying processing deficit and how to measure it
- Inadequate battery of tests for proper assessment
- Case load does not allow the necessary time for interpretation beyond the scores
- What to do with students who have been served through special ed as LD, who may not be LD
- Need for district support in the appropriate identification process
- Re-education of parents and teachers about what constitutes “real” LD

7. Over-reliance on an ability-achievement discrepancy when interpreting test results.

- IDEA 97 required ability-achievement as part of the LD eligibility process
- TEA required ability-achievement
- Disconnect between research and practice
- Fear that moving away from A-A will open the flood gates to special ed
- Examiners were trained on this model and may not know any other way to assess LD
- It’s fast, it’s simple (DDD: down & dirty diagnostics)
- District may feel more secure going into a due process hearing
- It supports the misconception that failure on TAKS is the result of LD

8. Failure to investigate and explain performance across tests that makeup the comprehensive battery.

- Focus is on the numbers (scores)
- Lack of knowledge about the subtests that are administered
- Don’t formulate and test hypotheses
- Don’t start process with a referral question so may not know the issues
- Don’t understand the statistical issues related to comparing tests or subtests
- Don’t have time
9. Failure to understand what is required for a “discrepancy”.

– Interchange “difference” with “discrepancy”
– May not have the necessary tables in a test manual to determine discrepancy
– May not know how to interpret a discrepancy if there is one

10. Inability to use data to establish educational need.

– Don’t know how to interpret assessment data to identify educational needs (including need for accommodations or modifications)
– Underlying assumption that all children with disabilities require special education
– Disagreement about what to do with students with higher IQs
– Belief that a student will make more progress if assigned to special ed

A Plan of Action

A 3-Tier Model for Assessment and Intervention
Tier 1: Screen students to identify those "at risk"

Tier 2: Provide research-based intervention

Tier 3: Conduct comprehensive assessment

Tier 1: Screening

Goal: To identify students who are **at-risk** for developing learning, behavior, social, emotional problems that impact school achievement
Tier 2: Research-based Intervention

Goal: To eliminate problems through the use of research-based interventions that are effective in general education settings

Secondary Goal: To identify those students who do not respond to this intervention and refer for a more comprehensive evaluation

Tier 3: Comprehensive Evaluation

Goal: To identify reasons why the student has not responded to intervention, to determine whether a disability is present, to establish educational need, and to develop an appropriate individualized education plan.

Tier 1: Screening

- Mandated screening in primary grades to identify students at-risk for reading problems
  - TPRI, ERDA II
  - Reading First grants
- Required Child Find process
  - Screen for a variety of possible disabilities
  - Non-categorical eligibility
- Kindergarten Roundup
  - Early identification of students with problems that could affect early success in school
Remember

- Prognosis is generally better when problems (including disabilities) are identified early and followed with early intervention
- Value of multi-disciplinary evaluation team
- Once a child is identified, something needs to happen—assessment should be linked to intervention

Screening for Reading

- Early Reading Success Indicator (ERSI)
  - Ages 5-10
  - Used by school psychologists, educational diagnosticians
- Early Reading Diagnostic Assessment (ERDA II)
  - Grades K-3
  - Used by teachers
- Pre-Reading Inventory of Phonological Awareness (PIPA)
  - Ages 4.0—6.11
  - Used by teachers
- Reading to Learn: A Dyslexia Screener
  - Ages 3.6—6.5
  - Used by reading specialists, early childhood assessment specialists, school psychologists, educational diagnosticians

Screening for Developmental Delays

- First STEp/Primer PASO
  - Ages 2.9—6.2
  - Administered by early childhood assessment specialists, SLPs, educational diagnosticians
  - Evaluates cognition, communication, motor, social-emotional, and adaptive behavior
- Greenspan Social-Emotional Growth Chart
  - Ages Birth to 42 months
  - Administered by teacher, daycare provider, early childhood assessment specialists
  - Detects deficits in developmental social-emotional capacities
Screening for Language Delays

- **Preschool Language Scale (PLS-4)**
  - Ages Birth-6:11
  - Administered by early childhood assessment specialists, SLPs, educational diagnosticians
  - Evaluates early language development required for auditory comprehension and expressive communication

- **Bracken School Readiness**
  - Ages 2:6—7:11
  - Administered by early childhood assessment specialists, SLPs, educational diagnosticians
  - Non-verbal screener to identify if underlying language deficits are interfering with the acquisition of basic concepts

Screening for Language Differences

- **Diagnostic Evaluation of Language Variation (DELV)**
  - Ages 4—12
  - Administered by early childhood assessment specialists, SLPs, educational diagnosticians
  - Evaluates whether an African-American child speaks a variation of Mainstream American English or is at risk for a language disorder

Screening for Behavior Deficits

- **Adaptive Behavior Assessment System (ABAS II)**
  - Ages Birth—adulthood
  - Administered by early childhood assessment specialists, SLPs, educational diagnosticians, school psychologists
  - Evaluates conceptual, social, and practical adaptive behaviors

- **Brown Attention Deficit Disorder Scales**
  - Ages 3—adulthood
  - Administered by early childhood assessment specialists, SLPs, educational diagnosticians, school psychologists
  - Evaluates the executive functioning aspects of cognition associated with ADD/ADHD not just overt behaviors
Screening for Sensory Deficits

- **Pervasive Developmental Disorders Screening Test (PDDST II)**
  - Ages 18 months and older
  - Administered by early childhood assessment specialists, SLPs, educational diagnosticians, school psychologists
  - Early screener for autistic spectrum disorders
- **Infant/Toddler Sensory Profile**
  - Ages Birth—36 months
  - Administered by teacher, early childhood assessment specialists, SLPs, educational diagnosticians
  - Examines sensory processing patterns in children at risk for sensory-related deficits

An Example of Tier 1 and 2: LA Unified School District

A partnership between LAUSD and the University of Washington formed in 2002-2003 with a focus on reading and writing based on Tier 1 and 2

- Schools were already using research-supported reading programs in general ed (Open Court and Success for All)
- Decided to screen classes for students who were not responding to this code-oriented curriculum. Administered WIAT II Word Reading and Pseudoword Decoding to all first grade classes and identified the lowest 25%tile. 3 process measures were also given.
- Identified at-risk students were randomly assigned to a treatment group or a control group within their own school. The treatment group were given supplementary, research-validated early intervention in reading and writing by the general ed teachers with support from the school psychologists.

- This early intervention was provided 2-3 times a week for 30 minutes while control children did independent assignments in their regular reading program. The intervention began in winter and continued until spring. Instruction was based on the PAL Teacher Lesson Plans for reading and writing.
- Many ELL students from low-income families were included (this process was implemented rather than referral to special ed)
- In the spring, the WIAT II Word Reading and Pseudoword Decoding subtests along with 3 process measures: PAL Receptive Coding, Phonemes, and Rapid Automatic Naming-Letters were readministered.
Results

1. Children in the treatment group improved significantly more than those in the control group in real word reading as measured by the WIAT II Word Reading. The treatment group increased, on average, while the control group decreased, on average.

2. Children in the treatment group improved significantly more in PAL receptive coding, a measure of coding the orthographic word form into STM and processing its constituent letters in working memory. On average, the treatment group moved from the lower limits of the 2nd quartile to above the mean in the 3rd quartile.

3. Both groups improved significantly in phonological decoding, as expected because both instructional programs emphasized phonological awareness and the alphabetic principle.

4. But, the way that the alphabetic principle was taught differed between the 2 groups. The treatment group received explicit and intensive instruction in developing their orthographic coding ability, and in applying the alphabetic principle to read words.

5. Both groups also improved significantly, on average, in 2 other processes related to reading and spelling—phoneme skills and rapid automatic naming of letters.

6. Children in the treatment group were significantly more likely to be a treatment responders than children in the control group. The focus on processing skills was related to specific achievement gains.

7. For example, for those children identified as non-responders in real word reading or in receptive coding, instruction that included Looking Games (Berninger, 1998) improved orthographic coding skills. For those children identified as non-responders in pseudoword reading or phoneme skills, instruction using Sound Games improved phoneme skills.
More info on this ongoing study


Tier 2: Research-based Intervention

- Need for diagnostic information to understand the dynamics of the problem
- Need to use research to inform instruction
  - Understanding that process-related deficits can be taught or remediated
  - Knowledge of critical components of instruction
  - Seeing the importance of explicit, systematic instruction
  - Acceptance that intervention may take time
  - Concept of “what works”
- Necessity of progress monitoring to document and track response to intervention
- Identification of those students for whom intervention has not been effective

- Sometimes a student lacks the appropriate skills because he has not been taught them.
- Use of research-demonstrated effective intervention at Tier 2 including use of PAL Teacher Lesson Plans
  - Found early intervention was more effective when reading and writing were combined rather than focusing solely on reading
- July, 2003, American Academy of Neurology announced Short-term Dyslexia Treatment Strengthens Key Brain Regions (July 22 issue of Neurology)
  - After only 3 weeks of reading intervention—in the summer, brain scans in children with dyslexia develop activation patterns that match those of normal readers.
  - Researcher says these results indicate that instruction doesn’t “rewire” the brain of the dyslexic child, but instead strengthens the normal circuits which are already in use.
Instruments that can be used for progress monitoring

- **criterion-referenced** (e.g., Academic Competence Evaluation Systems or ACES, DiPerna & Elliott, 2000; Academic Intervention Monitoring System or AIMS, Elliott, DiPerna, & Shapiro, 2001; and The Texas Primary Reading Inventory, Texas Educational Agency, 2000)

**Role of Pre-referral Team**

- Consider non-responders
- Evaluate what assessment has already been done
- Evaluate what intervention has been provided
- Identify the elements of the problem that drives the referral
- Formulate a referral question(s)

**Tier 3: Evaluation of Learning Disability**

- Movement away from Ability-Achievement Discrepancy Model
  - Has increased by 300% the number of children qualified for special ed since 1976
  - Contributes significantly to the disproportionate minority representation in special ed (Reschley, 2002)
  - Generally lacks research support as the sole determinant of identifying children who need individually tailored instruction
• Importance of differential diagnosis
  – There is a difference between diagnosis and meeting eligibility criteria
  – LD has primarily been a diagnosis based on exclusionary rather than inclusionary criteria
  – In Texas, differentiate between dyslexia and other types of reading disorder
  – Identify those students who have underlying language-based learning disorders
  – Consider the role played by general intelligence ($g$)
  – Consider diagnosis when planning intervention (e.g., dyslexic needs different intervention than language-based reading disabled)

• Call for a more flexible approach
  – Predictive achievement model
  – Enlightened use of IQ tests
  – An approach that is still psychometrically sound
  – An understanding that there may be multiple sources of evidence for a learning disability

• Support for a Process Assessment approach
  – Research has identified those processes relevant to the acquisition of reading and writing skills
  – Research has identified processes related to learning disabilities
  – Continue to be issues related to how to use process-related information to inform instruction/intervention, but progress related to reading/writing
General Guidelines for a Process-oriented Approach

- Test information must be integrated with other information available about the child, his cultural background, and his home and school environments.
- A process-oriented approach can be visualized as a process of information aggregation that combines details within a conceptual framework unit to produce a more easily distinguishable pattern.

More About the Process-approach

- Belief that how a child performs tasks is as important, and often even more important, than the score he obtains at the subtest and above levels of aggregation.
- Understanding performance on individual items, including the kinds of errors a child makes, can provide rich clinical information when it can be established that the observations reflect a pattern of behavior observed in multiple contexts.

More About the Process-approach

- Understanding the multiple component processes involved in performing individual items of a subtest can add substantial depth to the clinical interpretation of test performance.
- Describing the strategies a child employs when performing tasks provides a basis of interpretation that resonates deeply with parents and teachers and even with the child.
Using Current Tools in a Different Way To Diagnose LD

WISC-IV Model

Condition 1
Statistical
Significance

Condition 2
Base Rate
Interpreting Index Scores

1. Enter the various index standard scores on the Analysis page from the Summary page.
2. Calculate the difference between scores.
3. Use Table B.1 to identify Critical Value by age.
4. Use Table B.2 to identify the Base Rate.

General Ability Index Scores

- Consider using for eligibility purposes when there is a discrepancy between VCI and WMI or between PRI and PSI.
- Using GAI does not mean the FSIQ is irrelevant; rather, it is another way to interpret test results.
- Obtain GAI from PsychCorp.com website or call 1-800-211-8378 and ask for WISC IV Technical Report #4

WISC IV LD – Reading Study

<table>
<thead>
<tr>
<th></th>
<th>RD</th>
<th>Match</th>
<th>Diff</th>
<th>Signif</th>
<th>Effect</th>
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<td>PRI</td>
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WISC IV Performance of Children with Reading Disorder

56 children aged 7-13 who were identified with Reading Disorder according to DSM-IV-TR diagnostic criteria.

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<th>Subtest</th>
<th>Reading Disorder Mean</th>
<th>Matched Control Mean</th>
<th>Standard Difference</th>
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<tr>
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WISC IV LD – Reading & Writing

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WISC IV Performance of Children with Reading and Writing Disorder

35 children aged 8-13 who were identified with both Reading Disorder and Disorder of Written Expression according to DSM-IV-TR diagnostic criteria

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WISC IV LD – Math Study

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### WISC IV Performance of Children with Math Disorder

33 children aged 8-13 who were identified with Math Disorder according to DSM-IV-TR diagnostic criteria

<table>
<thead>
<tr>
<th>Subtest</th>
<th>Math Disorder Mean</th>
<th>Matched Control Mean</th>
<th>Standard Difference</th>
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<td>Digit Span*</td>
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### Digits Subtests

<table>
<thead>
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<th>Subtest</th>
<th>Math Disorder Mean</th>
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<th>Standard Difference</th>
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<tr>
<td>Digits Forward</td>
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<tr>
<td>Digits Backward</td>
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</table>
WISC IV Integrated Model

• Process Analysis
  – Derive process scores and perform process-level discrepancy comparisons
  – Interpret performance within the 4 cognitive domains
  – Use data for decision-making related to intervention planning as well as to support diagnosis
  – Use data to fully understand performance on WISC IV standard battery (e.g., FSIQ)

4 Cognitive Domains

**Verbal Domain**
- Core Subtests
  - Similarities
  - Vocabulary
  - Comprehension
- Supplemental Subtests
  - Information
  - Word Reasoning
- Process Subtests
  - Similarities Multiple Choice
  - Vocabulary Multiple Choice
  - Picture Vocabulary Multiple Choice
  - Comprehension Multiple Choice
  - Information Multiple Choice

**Perceptual Domain**
- Core Subtests
  - Block Design
  - Picture Concepts
  - Matrix Reasoning
- Supplemental Subtests
  - Picture Completion
- Process Subtests
  - Block Design Multiple Choice
  - Block Design Process Approach
  - Elithorn Mazes

**Working Memory Domain**
- Core Subtests
  - Digit Span
  - Letter-Number Sequencing
- Supplemental Subtests
  - Arithmetic
- Process Subtests
  - Visual Digit Span
  - Spatial Span
  - Letter Span
  - Letter-Number Sequencing Process Approach
  - Arithmetic Process Approach
  - Written Arithmetic

**Processing Speed Domain**
- Core Subtests
  - Coding
  - Symbol Search
- Supplemental Subtests
  - Cancellation
- Process Subtests
  - Coding Recall
  - Coding Copy
WISC IV VCI and WIAT II Correlations

<table>
<thead>
<tr>
<th></th>
<th>WIAT Reading</th>
<th>WIAT Math</th>
<th>WIAT Written Language</th>
<th>WIAT Oral Language</th>
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WIAT II and LD

Look at the scores
- Discrepancies at the composite level
- Dissociations among subtests that contribute to a composite
- Student profile of relative strengths and weaknesses (subtest level data)
- Supplemental scores (e.g., compare WE Word Fluency to OE Word Fluency)
- Discrepancies between ability and achievement at composite and subtest levels

WIAT II and LD

Look at the qualitative data
- Qualitative Observation Checklists
- Error analysis by subtest
- Skills analysis by subtest
- Overall behavioral observations
- Consider
  - Automaticity of word reading
  - Oral reading fluency
  - Reading rate
  - Verbal fluency
Automaticity and Fluency

- **Automaticity relates to fluency** but the concepts are not interchangeable and automaticity of decoding does not ensure fluency.

- Development of word recognition skills has been associated with better reading comprehension skills and this is likely due to automatization of decoding.

- The fluent reader is able to decode quickly, effortlessly and accurately with appropriate expression.

Fluent readers are multi-tasking, decoding, determining syntax and deriving meaning simultaneously. (Executive Functions)

Recent research has documented that (a) some forms of reading disability may only be detected with rate-based measures, and (b) the **automaticity of single word recognition and fluency of oral reading of text** are critical for the reading development of all students (see Kame’enui & Simmons, 2001, Lovett, 1987; Wolf, 2001).

Where does Dyslexia fit in?

According to TEA, the following are the reading/writing/spelling characteristics of dyslexia:

<table>
<thead>
<tr>
<th>Difficulty reading single words in isolation</th>
<th>Word Reading</th>
</tr>
</thead>
</table>
| Difficulty accurately decoding nonsense or unfamiliar words | Pseudoword Decoding
| Word Reading |
| Slow, inaccurate or labored reading (lack of fluency) | Word Reading
| Pseudoword Decoding
| Reading Comprehension-Sentences |
| Difficulty with learning to spell | Spelling
| Written Expression |
TEA also says that

The reading/writing/spelling characteristics of dyslexia are the result of:

- Difficulty with the development of phonological awareness, including segmenting, blending, and manipulating sounds in words;
- Difficulty learning the names of letters and their associated sounds;
- Difficulty with phonological memory (holding information about sounds and words in memory); and/or
- Difficulty with rapid naming of familiar objects, colors, or letters of the alphabet.

Using WISC IV and WIAT II

The verbal comprehension factor (VCI) on the WISC IV should be compared to accuracy and rate measures of single word reading or passage reading and dictated spelling (WIAT II Reading subtests) to consider dyslexia—a disorder in which reading and spelling fall below the population mean and below expected level based on verbal comprehension (Berninger, 2001b; Berninger, Abbott, Thompson, & Raskind, 2001).

Not all R-LD is Dyslexia

- Children with language learning disability learn language more slowly during the preschool years but may appear to have normal language skills during the school years unless carefully assessed to document problems in using language to learn academic skills and executive functions related to language use.
- Unlike dyslexics who tend to have relative strengths in morphology and syntax and relative weaknesses in phonology, the language learning disabled have relative weaknesses in phonology, morphology, and syntax.
Over-identification for Special Education

Language-Learning Disabled

- Evaluation of reading and oral language abilities indicated that 55% of reading disordered children displayed impaired oral language skills and 51% of language disordered youth exhibited reading deficiency suggesting a high degree of overlap between these groups.

Does Diagnosis Matter?

- Dyslexics benefit from explicit decoding instruction in the context of balanced reading instruction (Berninger, Nagy et al., 2003).
- Language learning disabled also need explicit instruction in morphological and syntactic awareness, vocabulary, and reading comprehension (Berninger et al., 2002; Wallach & Butler, 1994).
- Those with SLI need very intensive, systematic, and specialized language therapy by a qualified professional.
- Children with executive function disorders may require instructional as well as behavioral intervention and accommodations.

Process Assessment of the Learner Test Battery (PAL)

- WIAT II
  “There is a significant discrepancy between the student’s achievement and ability in the area of reading and/or writing...” and “these are the skill areas where the student is deficient.”

- PAL Test Battery for Reading and Writing
  “The reason that the student has the deficit(s) in reading and/or writing is because...” In other words, PAL TB can be used to diagnose the nature of reading- or writing-related processing problems in students who have exhibited an ability/achievement discrepancy.
Processes Related to Reading

1. **phonological** (Morris et al., 1998; Wagner & Torgesen, 1987; Wagner, Torgesen, & Rashotte, 1979);
2. **orthographic** (Berninger, 1994a, 1994b, 1995, 2001a);
3. **rapid automatic naming or RAN** (Wolf, 1986; Wolf, Bally, & Morris, 1986; Wolf & Bowers, 1999; Wolf, Bowers, & Biddle, 2000);
4. **morphological** (Nagy, Berninger, Abbott, Vaughan, & Vermeulin, in press); and
5. **receptive and expressive language** (Catts, 1993).

Assessing the Underlying Processes

<table>
<thead>
<tr>
<th>Skill Area</th>
<th>Process</th>
<th>PAL Subtest</th>
</tr>
</thead>
<tbody>
<tr>
<td>Word Recognition</td>
<td>Orthographic coding in short-term memory</td>
<td>Receptive Coding</td>
</tr>
<tr>
<td></td>
<td>Orthographic representation in long-term memory</td>
<td>Word Choice</td>
</tr>
<tr>
<td></td>
<td>Phonological coding in short-term memory</td>
<td>Phonemes</td>
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<td>Rapid Automated Naming</td>
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<td>RAN Words</td>
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Assessing the Underlying Processes

<table>
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<tr>
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<th>Other Subtest</th>
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<tbody>
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<td>Verbal reasoning</td>
<td>VCI from Wechsler IQ</td>
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<tr>
<td></td>
<td></td>
<td>• Information</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Similarities</td>
</tr>
<tr>
<td></td>
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<td>• Vocabulary</td>
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## Assessing the Underlying Processes

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<td><strong>Reading Rate</strong></td>
<td>Automaticity of letter coding</td>
<td>RAN Letters</td>
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<tr>
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<td>Receptive Coding A-E</td>
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<tr>
<td></td>
<td>Word automaticity</td>
<td>RAN Words</td>
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<tr>
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<td>Automaticity of word-specific mechanism</td>
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## Assessing the Underlying Processes

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<td>Finger function</td>
<td>Finger Sense</td>
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<td></td>
<td>Storing or retrieving letter forms in memory</td>
<td>Receptive Coding</td>
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<td>Expressive Coding</td>
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<td></td>
<td>Integrating receptive coding with written output</td>
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<td>Representation in long-term memory</td>
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Assessing the Underlying Processes

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Assessing the Underlying Processes

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<td>Word Choice</td>
</tr>
</tbody>
</table>

Working Memory and LD

- Performance on working memory tasks has been found to predict reading comprehension performance in non-disabled readers above the effects of decoding and vocabulary abilities (Seigneuric, Ehrlich, Marie-France, Oakhill & Yuill, 2000).

- Increasingly, working memory is becoming an important construct in the understanding of cognitive difficulties experienced in a variety of clinical conditions.

- 4 classes of executive functions contribute to writing (Denkla, 1996): initiating, sustaining, inhibiting/stopping, and set shifting. Working memory is an initiating behavior.
What about Executive Function?

Skills associated with Executive Functioning:
- mental flexibility
- set formation and maintenance
- behavioral initiation/productivity
- planning
- self-monitoring
- abstract reasoning/concept formation
- Inhibition of impulsive/pre-potent responses
- rule learning

Writing and Research

- Research (Hooper et al, 2002) found statistically significant differences between the poor and good writer groups in 4th and 5th graders on initiation and set shifting domains.
- Recent research (Altemeier et al, in press) using select subtests from WIAT II (Reading Comprehension and Written Expression), PAL Test Battery (Copy Tasks A and B, Alphabet Writing), DKEFS (Inhibition from Color-Word Interference subtest, Letter Fluency from Verbal Fluency subtest), NEPSY (Tower subtest), Wolf Rapid Automatized Switching (Letters and Numbers), and WJ-R Numbers Reversed.

Research Results

- 5th graders performed better (statistically) than 3rd graders on Task A (read passage and take notes) and B (use notes to write response); girls scored higher than boys.
- For Task A for both 3rd and 5th graders, the best predictor of performance was WIAT II Reading Comprehension paired with PAL Copy Task B, WIAT II Written Expression, and DKEFS Inhibition.
- For Task B for 3rd graders, the best predictor of performance was WIAT II Reading Comprehension, WIAT II Written Expression, DKEFS Verbal Fluency, and Tower of Hanoi (NEPSY).
- For Task B for 5th graders, the best predictor of performance was WIAT II Reading Comprehension, DKEFS Verbal Fluency, WIAT II Written Expression, and PAL Alphabet Task.
Research Conclusions

• Executive functions influence the writing process
• Executive functions contribute uniquely to the integration of the reading-writing process over and above reading and writing achievement alone
• Different executive functions were important, depending on the reading-writing task. Inhibition was found to contribute most to the note-taking task. Verbal fluency was most important to the report writing task.
• Different executive functions were important, depending on grade level. 3rd graders appeared to need to rely more on their planning abilities (NEPSY Tower) while 5th grades relied more on language generation (Verbal Fluency on DKEFS) and writing automaticity (PAL Alphabet).
• Working memory alone (as measured by WJ-R Numbers Reversed and supervisory attention (Wolf RAN tasks) did not increase the predictive power on either task at either grade for predicting reading-writing integration.

DKEFS Tests

• Trail-Making Test (Ages 8-89)
• Verbal Fluency (8-89)
• Design Fluency (8-89)
• Color-Word Interference Test (8-89)
• Card Sort Test (8-89)
• Word Context Test (8-89)
• Twenty-Questions (8-89)
• Tower Test (8-89)
• Proverbs Test (16-89)

Body of Evidence

• Evidence from cognitive assessment using WISC IV and WISC IV Integrated
• Evidence from achievement assessment using WIAT II
• Evidence from reading/writing process assessment using PAL
• Evidence from assessment of executive functions using DKEFS
Old Way and the New Way

| Ability-Achievement Discrepancy Model | Body of Evidence Model |

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