

ELIMINATING ACADEMIC AGONY

Trouble Shooting Tips

ADHD Conference
Riyadh, Saudi Arabia October 27, 2008

Chris A. Zeigler Dendy & Dr. Billie Abney

chris@chrisdendy.com

www.chrisdendy.com

ADHD Academic Challenges

- 90% academic problems
- 25-50% SLD
 - 65% written expression
 - 26% math
 - 24% spelling
 - 19% reading
- 30-50% deficits in executive functions
- 33-50% special education eligible
- low academic achievement scores

Common Problems that Impact Learning

- | | |
|---|--|
| <ul style="list-style-type: none">■ Learning Disabilities■ Output:<ul style="list-style-type: none">• Oral Expression• Written Expression<ul style="list-style-type: none">□ Slow Writing• Math Calculation■ Input:<ul style="list-style-type: none">• Listening Comp• Reading Comp.<ul style="list-style-type: none">□ Slow Reading | <ul style="list-style-type: none">■ ADHD/EF Symptoms<ul style="list-style-type: none">• Inattention/Impulsivity• Working memory• Poor Organization• Getting started■ Learning Problems<ul style="list-style-type: none">• Poor Memory• Poor Fine Motor• Slow Processing Speed<ul style="list-style-type: none">□ Slow retrieval of info.■ Dev. Delay/30% (4-6 yr) |
|---|--|

Students with ADHD are at Risk! for example at school...

- 29 percent will fail a grade (3X)
- 35% drop out of high school
- 46% suspended (10x)
- 11% expelled (7x)
- 95% do not graduate from college
- Predictor of substance use & JJ issues

Russell Barkley, Ph.D

Four Key Reasons for School Failure:

1. Executive function deficits & related learning problems
2. 30 percent developmental delay
3. Untreated coexisting conditions
4. Medication is not right

Understanding Executive Functions Is Critical for Effective Teaching!

Executive Function

Management functions of the brain

in other words, the

“conductor of the orchestra!”



Tom Brown, PhD

Executive Function

(components)

Impact on Academics & Behavior

- **W**orking memory
- **A**lertness, activation, and effort
- **R**econstitution—analysis and synthesis

- Internalizing language (self-talk)
- Controlling emotions

Executive Function Deficits

Impact on Schoolwork: Practical Implications

- getting started and finishing work
- remember chores and assignments
- memorizing multiplication tables
- writing essays
- remembering what is read (comprehension)
- controlling emotions
- analyzing and problem solving
- planning for the future

Sometimes,
we adults make
moral judgments about
EF Deficits because.....



children with EF deficits
look like they have made
a conscious choice to be
lazy and unmotivated!

8 Types of Accommodations

1. **Quantity of practice**
Reduce number of problems or items to learn.
Add interesting practice activities/worksheets.
2. **Time**
Give extended time; individualize timelines.
3. **Level of support**
Increase level of support/supervision; more personal assistance, peer tutors, peer buddies.
Structure environment.

Adapted from material by Dianna B. Wright

8 Types of Accommodations

4. **Input**
Adjust instructional strategies: visual aids, concrete examples, hands-on activities, sample of finished product.
Preteach key concepts.
5. **Difficulty**
Adjust skill level or problem type: use a calculator; simplify directions.

Adapted from material by Dianna B. Wright

8 Types of Accommodations

6. **Output (alternatives to writing)**
Vary method of response: verbal, video, audiotape; show knowledge with hands on material.
7. **Participation (engagement)**
Minimize one student only responses. Use choral response, hand signals, specific task to do, things to listen for, white boards.
8. **Functional curriculum**
Use different instructional methods or materials: Practice keyboarding skills while others continue practicing cursive.

Adapted from material by Dianna B. Wright

Executive Function Deficits...



have a huge impact on
Written Expression!

Brilliant Ideas Lost Forever

You know you have an attention deficit if....

- Your ideal essay is short, maybe three sentences long.
- You have fantastic, creative ideas but you can't get them out of your head and written down on paper.
- You'd rather have your teeth drilled than revise a rough draft.
- Your rough draft is the final copy.

Brilliant Ideas Lost Forever

FACTS:

- 65% have written expression problems.
- Requires strong executive function skills.
- Have limited working memory capacity.
- Difficulty recalling grammar and spelling rules.
- Have difficulty processing information
 - Slow retrieval of information.
 - Difficulty selecting the main point, sequencing, summarizing and paraphrasing.

Written Expression Challenges

- Limited working memory capacity
 - Copying from board or overheads (limit)
- Unsophisticated ideation
- Slow processing speed
- Poor fine-motor skills (handwriting)
 - (print, memory demand less - 26 sequences)
- Written language production problem
- Organizational/planning problems
- Difficulty getting started & choosing a topic



Mel Levine, M.D.

Deficits in Analysis & Synthesis

(Problem solving, sequencing--reconstitution)

Impact the ability to...

- Analyze and break down a project/problem.
- Identify the problem and correct it.
- Write reports or essays. They don't always...
 - Know where to start and how to proceed.
 - Brainstorm, generate ideas, & link knowledge.
 - Hold info. in mind, manipulate, and sequence it.
 - Process information quickly.
 - Express oneself clearly and concisely while speaking or writing (verbal fluency).

Improving Writing: Modify Assignments

- **Give Extended Time for Writing**
- **Reduce Amount of Written Work**
 - Allow student to dictate report to scribe
 - Cut and paste written work on computer
- **Allow Use of Spell & Grammar Check**
- **Substitute Creative Assign.**
 - Dictate report on a tape recorder
 - Videotape the assignment

Improving Writing: Modify Assignments (cont.)

- **Model Writing Essay** - overhead
- **Give Joint Assignments;**
 - Student scaffolds (builds) on other's work
- **Offer High Interest Topics**
- **Use Graphic Organizers**
- **Allow Student to Print**
- **Use a Mechanical Pencil**

Improving Writing: Modify Testing and Grading

- **Do Not Grade Early Work**
 - give credit for effort
- **Select Key Elements to Grade; content**
 - Tell will grade only one aspect (verbs)
- **Give Two Grades; one each for**
 - 1) creative content & 2) grammar/spelling
- **Give Recognition Tests Essay/Recall**
- **Provide Prompts for Essay Exams**
 - Give word banks; "starter" sentences

Masterpiece Sentences Jane Fell Greene

Prepare your canvas; base subject and verb.

1. **Paint your verb.**
 - how? when? where? how much? how many? how often?
2. **Move the verb painters around.**
3. **Paint your subject.**
 - which? what kind of? how many?
4. **Detail your words.**
 - birds--sea gulls, flew--soared
5. **Apply finishing touches.**
 - Refine the wording. Move sentence parts. Ck sp. & punctuation

Masterpiece Sentences

- The birds flew.
- At sunset, a thousand giant white sea gulls burst through the clouds with wings outstretched and soared above the thundering tide.

Improving Writing Skills (www.webster.commnet.edu)

THE ROYAL ORDER OF ADJECTIVES								
Determiner	Observation	Physical Description			Origin	Material	Qualifier	Noun
		Size	Shape	Age				
a	beautiful			old	Italian		touring	car
an	expensive			antique		silver		mirror
four	gorgeous		long-stemmed		red	silk		roses
her			short		black			hair
our		big		old	English			sheepdog
those			square			wooden	hat	boxes
that	dilapidated	little					hunting	cabin
several		enormous		young	American		basketball	players
some	delicious				Thai			food

WRITING STRATEGIES

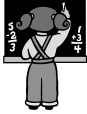
Bald Eagles
Interesting things about our National Bird

<p>3) Eagles in danger</p> <p>farmers put DDT on crops to kill bugs</p> <p>fish eat the bugs when they wash into the water</p> <p>DDT makes the fish, and DDT gets in them</p> <p>DDT makes egg shells thin, so they break</p>	<p>1) baby Bald Eagles</p> <p>takes 6-8 weeks for eggs to hatch</p> <p>lay only 1-2 eggs white with blue spots</p> <p>if baby falls out of nest, it dies</p> <p>babies have brown heads, not white</p>	<p>2) What they eat</p> <p>Mostly eat fish & dead animals</p> <p>Steal food from other birds</p> <p>Poor hunters</p>
---	---	---

The next time you see a picture of one, think about how these threats are in danger.

Executive Function Deficits...

have a huge impact on **Mathmatics!**



Why Is Math So Hard?

(Deshler - 2006 Presidential Commission)

- **Math book shortcomings:**
 - Too many concepts/too many pages in books.
 - eg. 20 concepts first grade
 - (limit to key topics each yr--maybe 150 pg/not 700)
 - Focused coherent progression of skills
 - Introduces new concepts too fast
 - Presentation of strategies not logical
 - Instructional activities unclear
 - Transition time from teaching to independent work too short.
 - Not enough content review.

Why Is Math So Hard?

(Deshler - 2006 Presidential Commission)

- **Math book shortcomings:**
 - Too many concepts/too many pages in books.
 - eg. 20 concepts first grade
 - (limit to key topics each yr--maybe 150 pg/not 700)
 - Focused coherent progression of skills
 - Lack mastery/introduces new concepts too fast
 - Presentation of strategies not logical
 - Instructional activities unclear
 - Transition time from teaching to independent work too short.
 - Not enough content review.

Mastering Math: *Modify Teaching Methods*

- Keep step-by-step problem on board
- Pair with another student
- Use peer tutoring; provide class time
- Teach math short cuts
- Use calculators
- Use dry-erase boards
- Use graphic organizers

Mastering Math: *Modify Teaching Methods*

- List steps for problem on board.
 - Copy steps from board
- Keep step-by-step problem on board.
- Pair with another student.
 - for answering questions
 - for checking accuracy & assignments
 - teaching each other
- Use peer tutoring; provide class time.
- Try on-line Algebra (NOVAnet):
- Try multisensory algebra: www.msalgebra.com

Mastering Math: Modify *Testing*

- Give extended time on tests.
 - Finish before or after school,
 - Finish during study hall
 - Give one page of test per class period
- Use word bank for test: formulas.
 - Allow use of laminated list of formulas
- Modify test grading:
 - Drop lowest grade
 - Earn extra credit; correct errors, extra work

Mastering Math: *Miscellaneous Tips*

- Ensure math homework is known.
 - weekly reports if needed
- Use color to highlight.
 - instructions, formulas, & changes in signs
- Use memory tips.
 - Please Excuse My Dear Aunt Sally
 - FOIL: First, Outer, Inner, Last
- Teach math short cuts.
- Schedule math for peak med. time.
 - between 1-2 hours after meds take effect

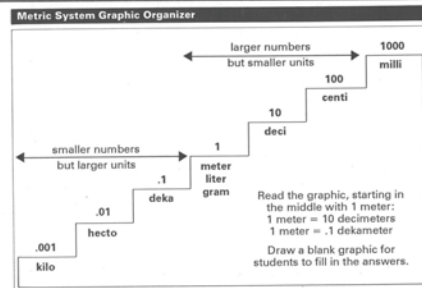
Improving Math Skills (action/strategy words)

- Give students a list of strategy or action words and the appropriate math procedures they translate into. Sometimes the terms in word problems such as "combined,"

Addition	Subtraction	Multiplication	Division
how many? altogether total* sum combined in all*	the difference how much less? how many more? more than less than subtracted from less	product times times as much multiple of twice (a number) times multiplied by	quotient how many groups? divided into divided by one-third of one-fourth of what part?
perimeter total cost* surface area*	increase decrease fewer minus how much change have enough?	times as many area volume surface area* squared total* in all* total cost*	make equal parts factor per unit unit cost

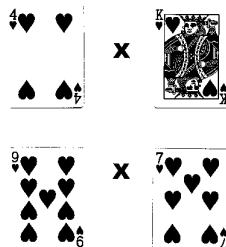
*These words may mean to either add or multiply, so read problems carefully.

MATH - Graphic Organizer



King Henry Died Monday Drinking Chocolate Milk

MATH WAR



Algebra



The real challenge.....

moving from concrete to abstract!

Inventive Algebra

(Brad Witzel, Ph.D. – WU)

Guided Practice

- I do it. We do it. You do it.
- Model thinking aloud.
- Ask questions: What do you do first?

Inventive Algebra

(Brad Witzel, Ph.D. – WU)

CRA Strategies

- Concrete – hands on
- Representational – draw, craft sticks
- Abstract

$$3N + 10 - 5$$

www.msalgebra.com

WORD PROBLEMS

John bought 7 boxes that contained 6 pencils each. He gave 6 pencils to Alex. John is 8 inches taller than Alex. How many pencils does he have left?

1. CIRCLE needed facts.
2. MARK OUT any unnecessary facts.
3. PUT SQUIGGLY LINE under the strategy word or phrase.
4. 2-STEP PROBLEMS:
 1 LINE under first step;
 2 LINE under second step.

MNEMONICS FOR MATH

Order of Operations when addition, subtraction, multiplication or division may be mixed into the problem.

1.1 Try this acronym when parentheses are involved
 Please guess my dear Aunt Sally (PEMDAS):

parenthesis,	$(2 \times 6) + (4 \times 3) - 2 = ?$	$(6 + 8) \times (12 - 4) \div 7 = ?$
exponents,	$12 \div 12 - 2 = ?$	$14 \times 8 \div 7 = ?$
multiply,	22	$112 \div 7 = ?$
divide,		16
add,		
subtract,		

First do parenthesis
 Next do addition & subtraction together from left to right.
 When multiplication and division are together,
 do them left to right.
 When addition and subtraction are together,
 do them left to right.

1.2 Multiplying binomials
 FOIL perform multiplication of terms in the following order:

ex. $(x+2)(3x-5)$

combine like terms

First $x \cdot 3x = 3x^2$

Outside $x \cdot -5 = -5x$

Inside $2 \cdot 3x = 6x$

Last $2 \cdot -5 = -10$

$3x^2 - 5x + 6x - 10$

$3x^2 + x - 10$

100 Point Spelling Contract

Jonathan Jones, CEO, SOAR Camping Program

- 20 Write words on flash cards.
- 20 Write words 5 times.
- 20 Type words times.
- 40 Use words in a sentence.
- 20 Write words in ABC order.
- 40 Write antonyms for words
- 40 Write definitions for words.
- 20 Illustrate words.
- 20 Air write words
- 20 Build words with letter tiles. (Scrabble)

Spelling Assignments

Linda Blondi - NJ

- "Rainbow" words by tracing over them.
- Draw a tree and put words on leaves.
- Write words creatively: fonts, block, 3-D.
- "Backwriting": write words on back. Parent initials.
- Write words: use nuts, raisins, scrabble. Eat them.
- Write questions: cartoon, super hero.
- Write list; rules for dogs: unused words on back.
- Write about one of your proudest moments.
- Describe an imaginary underwater creature.

Key EF Issues to Accommodate

Accommodations are needed for:

- **Organization** (strategies; folder; friend reminds)
 - **Working memory** (visual cues; prompts)
 - **Processing speed** (extra time; reduce assgn.)
 - **Planning ahead** (organizer; prompts)
 - **Sense of time** (watch; prompts)
 - **Long-term projects** (graphic organizer; 3 parts)
 - **Writing essays** (graphic organizer; dictation)
 - **Complex math** (ex. on board; www.msalgebra.com)
- (Effective strategies for RTI: Response to Intervention)

"ADHD education" is key for all these issues!!

Accommodations for College

- Offer early registration
- Assist with teacher selection.
 - Advise regarding teacher match.
- Provide a notetaker.
- Provide tutoring
- May forget early registration; "force" into class
- Encourage to use "drop add", if needed.
 - remind of date
- Consider a waiver for a foreign language.

A Model ADHD Program

Comprehensive ADHD Program

Judy Bandy & Holly West Jones, MN

- Changed teacher culture, re: ADHD (5 yrs)
- Attendance higher - 80%: students want to come
- More completed assignments
- Increased awareness by students; self-advocacy
- Parents pleased;
- Child no longer ashamed of ADHD
- County-wide reputation, others want to attend

Comprehensive ADHD Program

Judy Bandy & Holly West Jones, MN

- Training for teachers, mentors, students
- Serves 40-50 middle school students
 - Attend twice a week, before or after school
- Learning Lab teaches skills (1/2 hr wkly): self-advocacy, organization, problem solving, project management, time management, cleaning lockers/backpacks, review ed. plan, planning for tests/projects, goal setting
- Mentors supervise work

Comprehensive ADHD Program

Judy Bandy & Holly West Jones, MN

- Trained 15 teachers on ADHD
- Trained 4 mentors/paraprofessionals
 - Available 4 days, before and after school
- 8th graders & HS students return to advise
- Grant, PTA, school support:
- \$300-400 @ student
- \$18,000: pays 4 hrs nurse, director; 4 mentors, supplies