

Think Smart : Using Mindsets and Metacognition for Student Success – DAY 1

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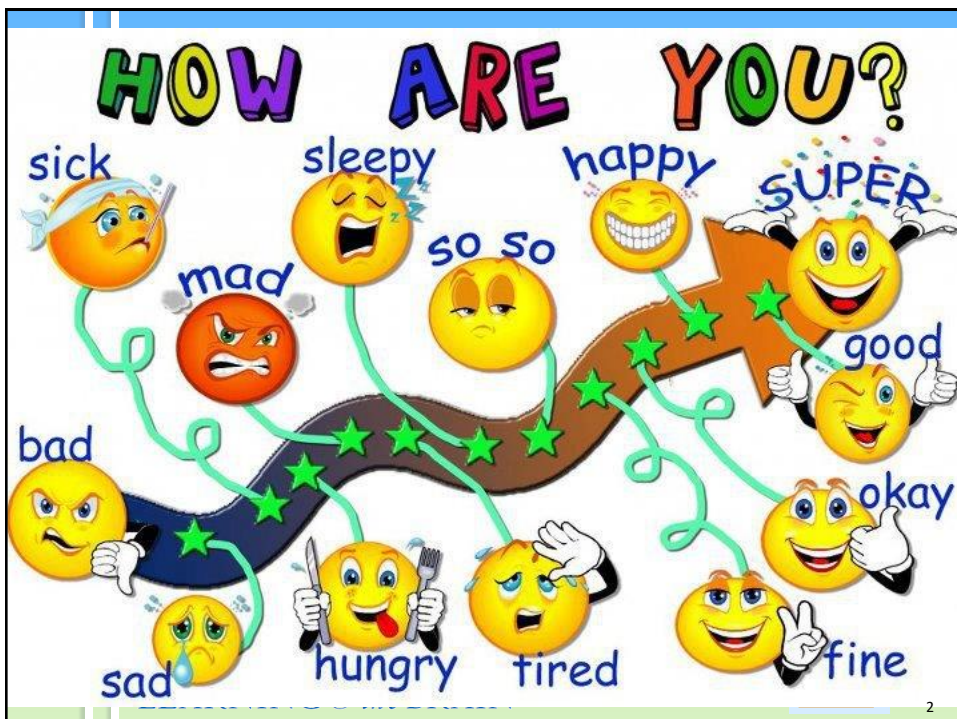
Kathleen M. Kryza, MA
International Educational
Consultant, Infinite Horizons



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Getting to Know You



- Your name and where you're from
- Your cultural background
- Your professional role.
- What brings you to the Summer Institute
- Something interesting that people would be surprised to know about you.

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STAND & SHARE: Who's Here?

Please Stand if...

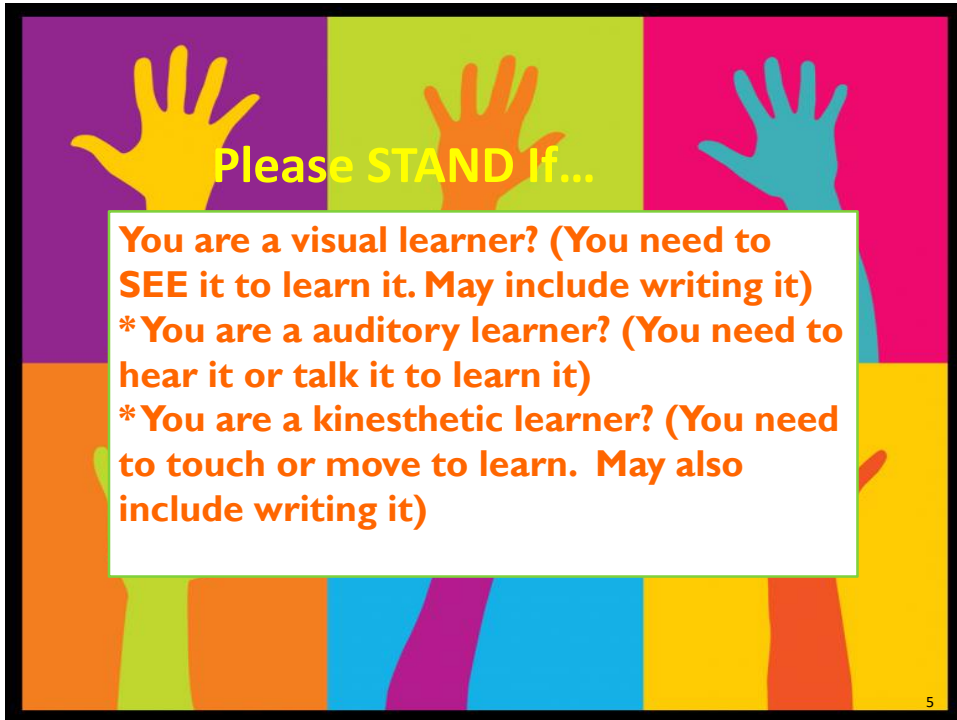
- You are an elementary teacher
- A middle or high school teacher.
- School Coach or Consultant
- School Administrator
- Psychologist, therapist or other counseling specialist.
- Speech Pathologist



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Please STAND If...

You are a visual learner? (You need to SEE it to learn it. May include writing it)

*** You are an auditory learner? (You need to hear it or talk it to learn it)**

*** You are a kinesthetic learner? (You need to touch or move to learn. May also include writing it)**

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- **Please Stand if...**
- **You were born in North American**
- **South or Central America**
- **Europe**
- **Asia**
- **Africa**
- **Australia/New Zealand**
- **Other? (Islands, Antarctica)**

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Jack's Background

- Interest in intelligence and instruction
- Experience
 - How can
- Experience
 - Test deve
 - Need for
- We can help
understand
and intelli



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Kathleen's Teaching Journey



Secondary &
Elementary
Classroom
Teacher



Special
Education



Talent
Development



Multicultural
Learners



Juvenile
Delinquents



Teacher of Teachers
Teacher Researcher

My Intention:
To open the heart, nourish the mind,
and inspire the spirits of learners
and teachers.

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Married May 17, 2014



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Wedding the Art and Science of Teaching: Theory Into Reality



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Routines & Procedures

- Daily Goals
- Mindful Moments
- Double Entry Journals
- Sound of Coming Together
- Core Groups
- Norms
- Chat Chums

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Settle Your Glitter!!

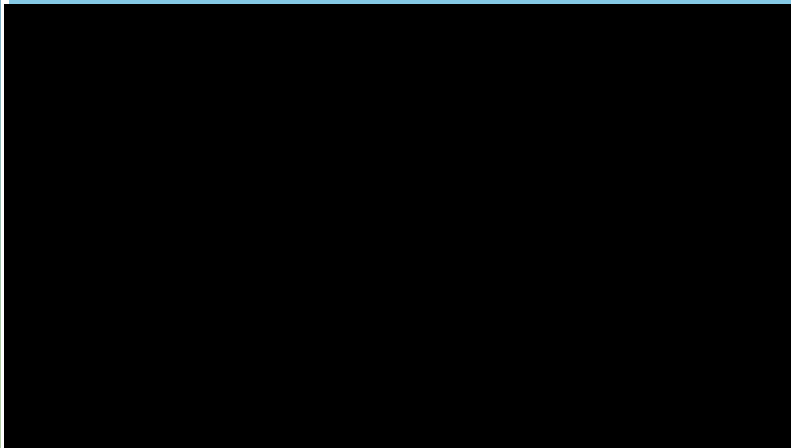


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Settle Your Glitter App



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Goals for The Institute



- Use advances in neuropsychology to better understand what it means to be smart
- Empower students at all grade levels by teaching them about how their brains work
- Teach students how to 'Think Smart' and use their neurocognitive abilities efficiently
- Use knowledge of students' cognitive strengths and challenges to guide and provide interventions for teachers, parents and the students themselves.
- Effectively teach strategies for maximum impact, ownership and improved behavioral and academic performance

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Goals for The Institute



- Day 1: Create a safe learning environment that engages all learners (culturally, emotionally and academically) and encourages academic risk-taking and mistake making.
- Day 2-5 Understand the relationship between cognition and social-emotional competence.
- Day 2-5. Evaluate students' cognitive skills to maximize and plan for effective student learning

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Here's Where We're Going Today

- Introduction/Routines and Procedures
- The History of Intelligence
- A New View
- Creating a "Think Smart" Classroom.
- Foldables and Final Projects
- Conclusion



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Decades of Research shows...

- In most classrooms, 20% of the students do 80% of the talking and thinking.
- Today, we will all be talking and **Thinking Smart** together, using strategies you can use in your schools.




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Inspiring Learners Strategies Help Kids “Think Smart!”

ILS Alert/ Big Ideas	Why Use Them/Why Important
	<ul style="list-style-type: none"> •Brain friendly •Engaging •All Participating •Honor All Learners CEA

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Move Constructively!



Ironing Boards as Desks and Bouncy Balls For Kids
Who Need to Wiggle to Learn

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Core Groups

- Groups of 3-4
- Establish roles:
 - Coach
 - Organizer/Time Keeper
 - Recorder
 - Energizer

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Let's chat...

**WHEN IT'S TIME TO TALK
WITH YOUR CHAT CHUM:**

- Share with your Core Group...
- Your Name
- Where you are from
- What do you do
- What brings you here

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Messages that Support a Safe Classroom Environment

Fair is not everybody getting the same thing...fair is everybody getting what they need to be successful!



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THIS IS A RISK-TAKING, MISTAKE MAKING CLASSROOM

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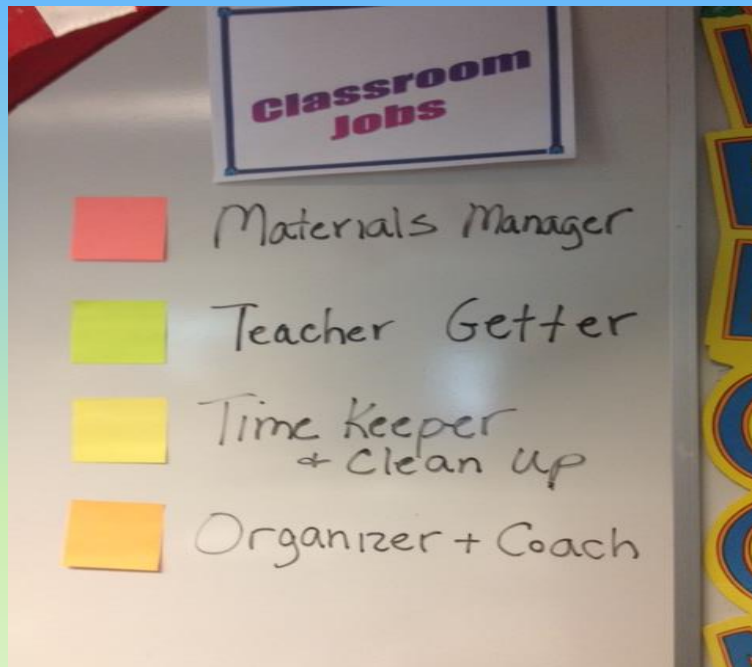
Create Norms for This Week



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Time to share...



- Knee to Knee, Eye to Eye
- Share....
- Remember back to your own school days. Do you recall being taught how to “think smart?” Yes or no? Share memories.



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Let's Practice: Thinking Together

- As you watch the following video, think...
- What was the teachers goal in this skit?
- Was the goal achieved ?
- Why was it so hard to get the students to think?
- Your own questions and thoughts..



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Lesson on Saturday Night Live



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Time to Talk

➤ Task:

- What was the teachers goal in this skit?
- Was the goal achieved ?
- Why was it so hard to get the students to think?

➤ STAND AND SHARE

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WHY AREN'T KIDS THINKING



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Mountain View High School Student Comments

- 'The teacher was frustrated because the students weren't thinking about what he was saying'
- 'They should have paused before responding so that they could think'
- 'When you feel pressure you'll say anything if you don't know the answer'

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Mountain View High School Student Comments

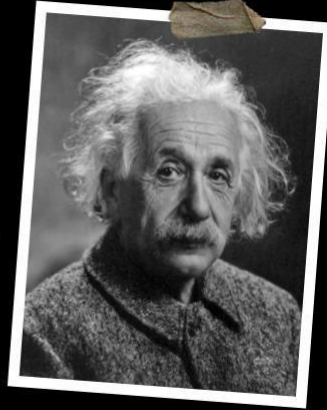
- We need to know why the teacher is getting us to learn history
- The way the teachers run the class stops you from thinking because they tell you there is only one way to do something – but it's a fact that there is more than one way to solve a problem'
- 'That's what I like about this class, there are different ways to solve the problems'

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**"Education is not
the learning of
facts, but the
training of the mind
to think."
-Albert Einstein**



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Let's Take a Mindful Moment or Brain Break (or Syn-nap)

The brain needs time
process!

- **Stretch**
- Cross Laterals
- Walk and Talk
- Energizers
- Relaxers



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Why Brain Breaks?

- **SYN-NAPS: Neurotransmitters, brain transport proteins, needed for memory construction and attention are depleted after as little as ten minutes of doing the same activity. *Syn-naps* are brain-breaks where you change the learning activity to let the brain chemicals replenish.**
- **The Syn-naps can be stretching, singing, or acting out vocabulary words. After just a few minutes, refreshed brains will be ready for new memory storage. (Dr. Judy Willis)**



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“Just Think!”

- What do we mean – Just think?
- Thinking has many names
 - Metacognition, executive function, mindfulness, cognitive processing, IQ, intelligence, attention, reasoning, problem solving, memory etc.
- Psychologists have used these terms when defining thinking -- especially intelligence
- We need to reflect on the concept of IQ and intelligence to define how to THINK SMART



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Case of Alejandro

Note: this is not a picture of Alejandro

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CASE STUDY: ALEJANDRO (C.A. 7-0 GRADE 1)

REASON FOR REFERRAL

➤ Academic:

- Could not identify letters/sounds
- October 2013: Could only count to 39
- All ACCESS scores of 1

➤ Behavior:

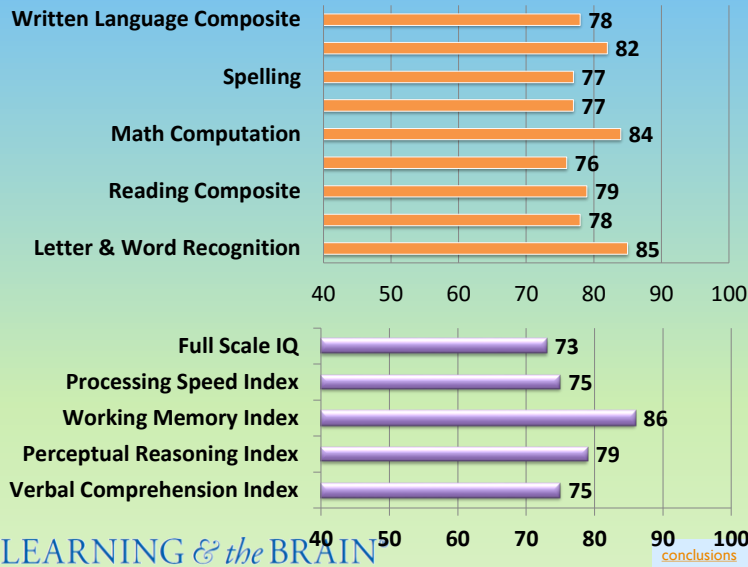
- Difficulty following directions
- Attention concerns
- Refusal/defiance

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WISC-IV ASSESSMENT



Stand and Share



&



What would you say about Alejandro's abilities based on this assessment?

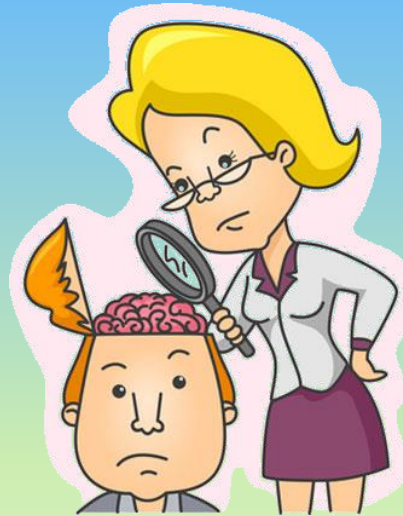
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WHY DO WE MEASURE IQ THE WAY WE DO?

THE HISTORY OF IQ TESTS



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Evolution of IQ

<http://www.jacknaglieri.com/cas2.html>

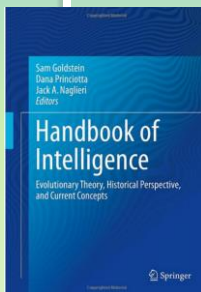
Hundred Years of Intelligence Testing: Moving from Traditional IQ to Second-Generation Intelligence Tests

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Jack A. Naglieri

"Do not go where the path may lead, go instead where there is no path and leave a trail."

—Ralph Waldo Emerson



Context

April 6, 1917, is remembered as the day the United States entered World War I. On that same day a group of psychologists held a meeting in Harvard University's Emerson Hall to discuss the possible role they could play with the war effort (Yerkes 1921). The group agreed that psychological knowledge and methods could be of importance to the military and utilized to increase the efficiency of the Army and Navy personnel. The group included Robert Yerkes,

Training School in Vineland, New Jersey, on May 28. The committee considered many types of group tests and several that Arthur S. Otis developed when working on his doctorate under Lewis Terman at Stanford University. The goal was to find tests that could efficiently evaluate a wide variety of men, be easy to administer in the group format, and be easy to score. By June 9, 1917, the materials were ready for an initial trial. Men who had some educational background and could speak English were administered the verbal and quantitative (Alpha) tests and those that could not read the newspaper or speak English were given

Origins of Traditional IQ

- April 6, 1917 is remembered as the day the United States entered World War I.



Origins of Traditional IQ

On that day same a group of psychologists held a meeting in **Harvard University's Emerson Hall** to discuss the possible role

psychologists could play with the war effort (Yerkes, 1921). Some of the members: Yerkes, Thorndike, Seashore, Terman, Otis and others...



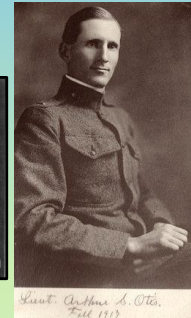
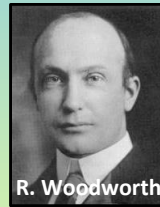
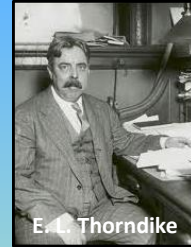
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Origins of Traditional IQ

- They met at the Training School in Vineland, New Jersey on May 28, 1917 to construct a test
- Once they had a collection of tasks they conducted research on the newly devised measures



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Origins of Traditional IQ

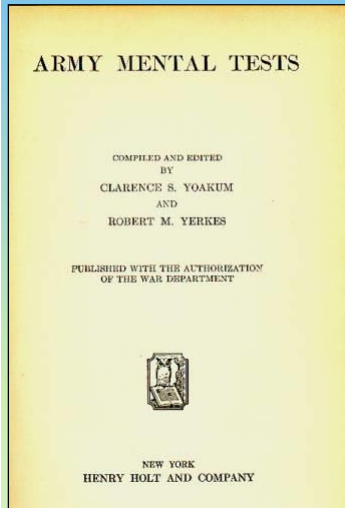
- On July 20, 1917 the authors concluded that the Army Alpha and Beta tests could
 - “aid in segregating and eliminating the mentally incompetent, classify men according to their mental ability; and assist in selecting competent men for responsible positions” (p. 19, Yerkes, 1921).
- **Thus, July 20, 1917 is the birth date of the verbal, quantitative, nonverbal IQ test format -- Traditional groups and individually administered IQ tests.**
 - **In 1 year we can celebrate the 100th year of IQ**

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IQ's Origins



- Yoakum & Yerkes (1920) created IQ tests used today

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1920 Army Testing

- | | |
|---|--|
| <ul style="list-style-type: none"> ➤ Army Alpha <ul style="list-style-type: none"> ▪ Synonym- Antonym ▪ Disarranged Sentences ▪ Number Series ▪ Arithmetic Problems ▪ Analogies ▪ Information | <ul style="list-style-type: none"> ➤ Army Beta <ul style="list-style-type: none"> ▪ Maze ▪ Cube Imitation ▪ Cube Construction ▪ Digit Symbol ▪ Pictorial Completion ▪ Geometrical Construction |
|---|--|

Verbal &
Quantitative

Nonverbal

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Army Mental Tests - vocabulary (WISC-V)

Test J, *vocabulary*.

Materials.—Accompanying five series of words.

Directions.—Place the list so that subject may see the words and pronounce them if he wishes. If a word is pronounced incorrectly, examiner should give the correct pronunciation. Formula: "What does the word mean?" If subject hesitates or seems to think that he must give a formal definition, examiner says, "It doesn't matter how you say it. All I care for is to find out whether you know what the word means. Tell me the meaning any way you want to express it." Subject is encouraged as liberally as necessary.

Ordinarily it will not be necessary to secure responses to all of the 40 words in a series, as some will obviously be too hard or too easy for the subject being tested. This is especially true in series 1, the words of which have been graded accurately according to difficulty. In each series, however, the testing should be over a wide enough range to secure an accurate score.

Scoring.—Credit each response as + or -. Occasionally half credits may be given, but in general this should be avoided.

The score is + if the response shows that subject knows at least one approximately correct meaning of the word. It is not necessary that the meaning given be the most common one. The form of definition is disregarded in computation of score, but for clinical purposes it is well to designate especially superior definitions by ++.

Series 1.

1 lecture	11 forfeit	21 conscientious	31 gelatinous
2 guitar	12 majesty	22 philanthropy	32 milksop
3 scorch	13 shrewd	23 exaltation	33 declivity
4 bonfire	14 Mars	24 frustrate	34 irony
5 misuse	15 dilapidated	25 flaunt	35 incrustation

Army Mental Tests - Information (WISC-V)

No. 1.1

PSYCHOLOGICAL EXAMINING IN THE UNITED STATES ARMY.

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EXAMINATION Q

Test 5 Information.

- 1 The color of fresh snow is white blue brown green
- 2 The ears are used in breathing digestion hearing seeing
- 3 Cows eat mostly meat grass nuts fruit
- 4 Dogs like best to eat grass seeds fruits meat
- 5 Thorns grow on daisies buttercups sun-flowers roses
- 6 Bull Durham is the name of chewing-gum aluminum-ware tobacco clothing
- 7 America was discovered by Drake Hudson Columbus Cabot
- 8 The apple grows on a vine bush tree reed
- 9 Berlin is the capital of Russia Germany England France
- 10 Blood is pumped by the lungs liver heart kidneys
- 11 Molasses is obtained from honey petroleum turpentine sugar-cane
- 12 Bowling is played with rackets cards balls dice
- 13 Baltimore is in Maryland Virginia Pennsylvania Ohio
- 14 St. Paul is in Missouri Minnesota Mississippi Florida
- 15 Ordinary flour is made from barley rye oats wheat
- 16 The lemon is most like the apple pear peach orange
- 17 The sacrifice hit comes in foot-ball tennis base-ball hand ball
- 18 Gas engines are lubricated by gasoline air water oil
- 19 Buenos Ayres is a city of Spain Argentina Brazil Portugal

Army Mental Tests - Arithmetic (WISC-V)

TEST 2

Get the answers to these examples as quickly as you can.
Use the side of this page to figure on if you need to.

- SAMPLES { 1 How many are 5 men and 10 men? Answer (15)
 { 2 If you walk 4 miles an hour for 3 hours, how far do you walk? .. Answer (12)
- 1 How many are 40 guns and 6 guns? Answer (46)
 - 2 If you save \$6 a month for 5 months, how much will you save? Answer (30)
 - 3 If 32 men are divided into squads of 8, how many squads will there be? Answer (4)
 - 4 Mike had 11 cigars. He bought 3 more and then smoked 6. How many cigars did he have left? Answer (8)
 - 5 A company advanced 6 miles and retreated 3 miles. How far was it then from its first position? Answer (3)
 - 6 How many hours will it take a truck to go 48 miles at the rate of 4 miles an hour? Answer (12)
 - 7 How many pencils can you buy for 40 cents at the rate of 2 for 5 cents? Answer (16)
 - 8 A regiment marched 40 miles in five days. The first day they marched 9 miles, the second day 6 miles, the third 10 miles, the fourth 9 miles. How many miles did they march the last day? Answer (6)
 - 9 If you buy 2 packages of tobacco at 8 cents each and a pipe for 55 cents, how much change should you get from a two-dollar bill? Answer (1)
 - 10 If it takes 8 men 2 days to dig a 160-foot drain, how many men are needed to dig it in half a day? Answer (32)

ARMY MENTAL TESTS

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● NONVERBAL TESTS

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Army Mental Tests → Picture Arrangement & Block Design (WISC-V)

Test 9.—Picture Arrangement

E. presents demonstrational set and allows S. to see it for about 15 seconds. Then, making sure that S. is attending, he slowly rearranges the pictures and points to each one in succession, attracting attention to the most important features. E. presents set (a), points to each picture, and indicates the correct arrangement. Then, E. shows set (b). S. is to select the correct arrangement as (a), except

Test 4.—Cube Construction

(a) E. presents model 1 and the corresponding blocks, points to bottom, top, and sides of model; then places it upon the table and assembles the blocks rather slowly, turning each block over in the fingers and pointing to painted and unpainted sides. E. now presents the same model and the blocks in irregular order, then points in order to S., to the model, to the blocks, and nods affirmatively. E. repeats, if S. does not understand.

(b) E. presents model 2 with the nine blocks for its construction; shows S. bottom, top, and sides of model; then places it

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Army Mental Tests - WISC Digit Symbol (Coding (WISC-V) & Mazes

Test 7.—Digit Symbol

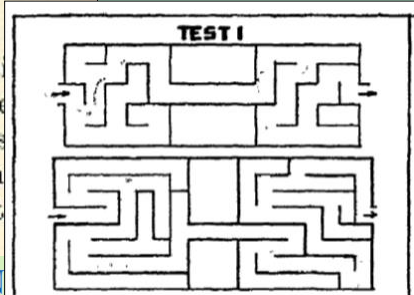
record sheet, points to blank below 2 and writes in same way with the other parts of the record sheet. E. points to space below 3 in the test

1	2	3	4	5	6	7	8	9
—	W	J	L	U	O	A	X	E

3	1	2	3	2	1	2	1	3	4	7	5	4	1	6

Test 8.—The Maze

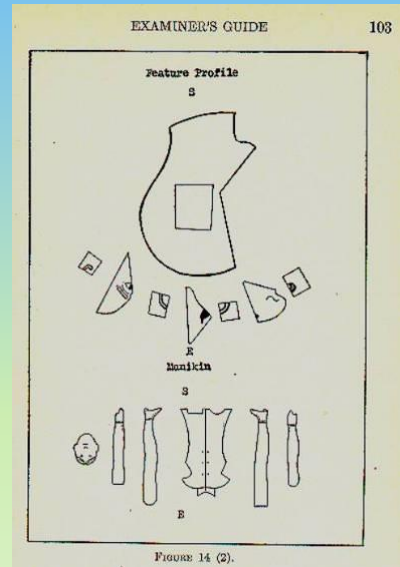
demonstration maze (a), and with his pencil marks the shortest way out. At critical points he points to the correct way in wrong direction without marking, S. continues to work in the right direction. E. presents maze A, gives S. pencil, points to start



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Army Mental Tests - WISC Object Assembly

- Wechsler used the Army tests as a basis for his tests
- Wechsler's nonverbal tests were much like those included in the Army Beta



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How did the US Army tests become IQ?

Because of David Wechsler

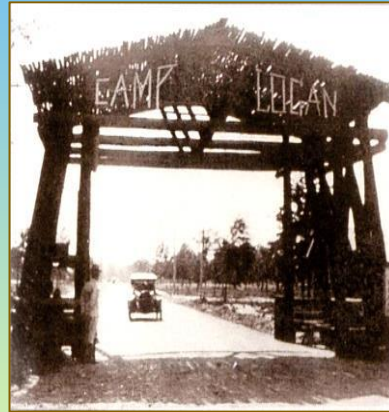
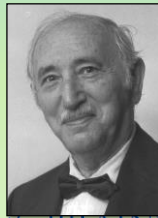
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Origins of Traditional IQ

- In May of 1918 a 22 year-old David Wechsler administered the Alpha and Beta (Yerkes, 1921, p. 40) at Camp Logan in Texas
- He made a version of the Army tests for use by clinical psychologists
- He contacted the Psychological Corporation, and spoke to



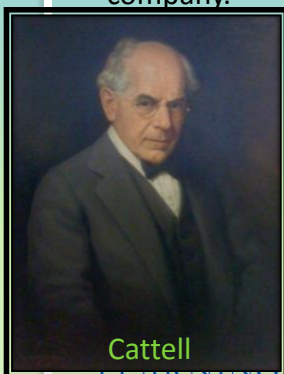
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The Psychological Corporation

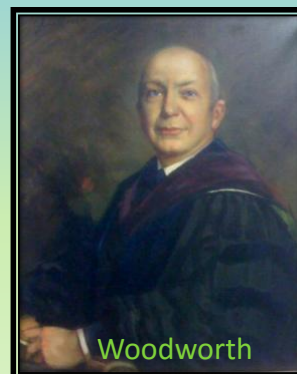
Cattell, Thorndike and Woodworth all have portraits at corporate headquarters of The Psychological Corporation (now Pearson) in San Antonio, Texas. They were on the board of the and instrumental in the formation of the company.



Cattell



Thorndike



Woodworth

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Army Alpha and Beta

- The Army Alpha (Verbal & Quantitative) tests became Wechsler's **Verbal IQ scale**
- The Army Beta (visual-spatial) tests became Wechsler's **Performance IQ**, which is now referred to as Nonverbal
- **Did this mean Wechsler believed in Verbal and Nonverbal intelligences?**

What a Nonverbal Test Measures

(Naglieri, Brulles, & Lansdown, 2008)

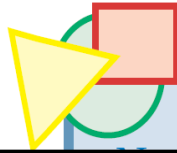
 Helping All Gifted Children Learn: A Teacher's Guide to Using the NNAT2

It is important to understand that even though Wechsler's intelligence (IQ) tests were organized into verbal and nonverbal sections, he did not mean that verbal and nonverbal are different types of ability. Wechsler (1958) explicitly stated that the organization of subtests into verbal and performance scales did *not* indicate that two distinctive types of intelligence were being measured. In fact, he

What a Nonverbal Test Measures

(Naglieri, Brulles, & Lansdown, 2008)

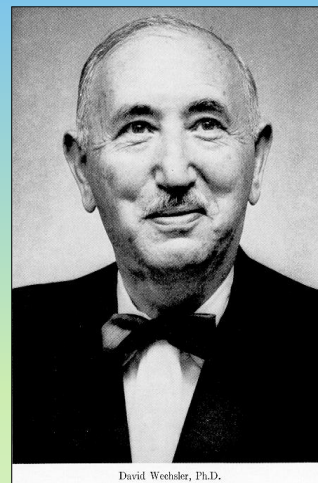
wrote: “the subtests are different measures of intelligence, not measures of different kinds of intelligence” (p. 64). Similarly, Naglieri (2003) further clarified that “the term nonverbal refers to the content of the test, not a type of ability” (p. 2). Thus, tests may differ in their content or specific demands, but still measure the concept of general intelligence.



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Wechsler's Definition

- Definition of intelligence does not mention verbal or nonverbal *abilities*:
“The aggregate or global capacity of the individual to act purposefully, to think rationally, and to deal effectively with his environment (1939)”



David Wechsler, Ph.D.

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Verbal Nonverbal Intelligence?

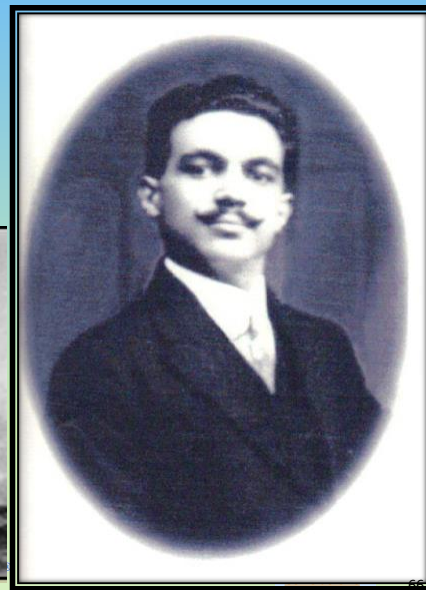
- Verbal / Nonverbal is a practical division
- Advantages of Verbal tests
 - they correlate with achievement because they have achievement in them
 - Information, Vocabulary, Arithmetic
- Advantages of Nonverbal Tests
 - they correlate with achievement without having achievement in them
- **Why NONVERBAL ?**

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Antonino Mirenda - 1906



Antonino Mirenda - 1907

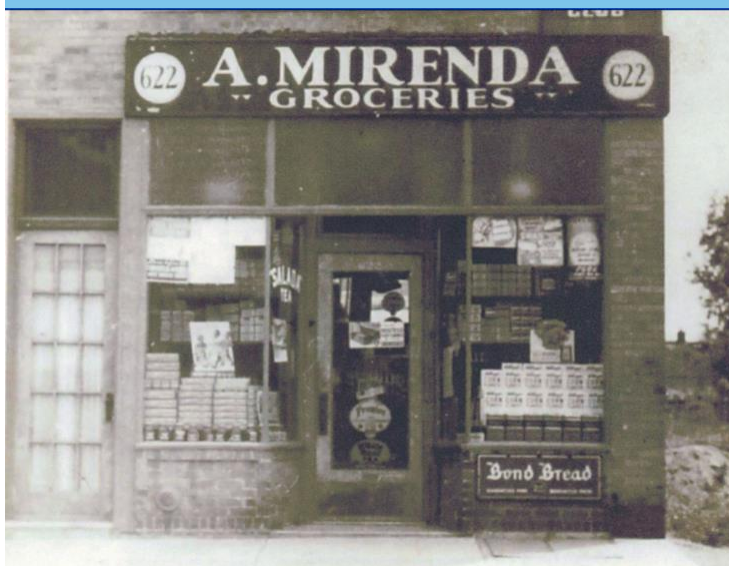


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A. Mirenda Groceries 622 Ave X, Brooklyn, NY



lusions

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1927 Army Testing

METHODS AND RESULTS

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Why Beta?

Men who fail in alpha are sent to beta in order that injustice by reason of relative unfamiliarity with English may be avoided. Men who fail in beta are referred for individual examination by means of what may appear to be the most suitable and altogether appropriate procedure among the varied methods available. This reference for careful individual examination is yet another attempt to avoid injustice either by reason of linguistic handicap or accidents incident to group examining.

Note there is no mention of measuring verbal and nonverbal intelligences – it was a social justice issue.

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Who do you know who's intelligence could have been inaccurately assessed with a test measure that is biased by verbal skills?

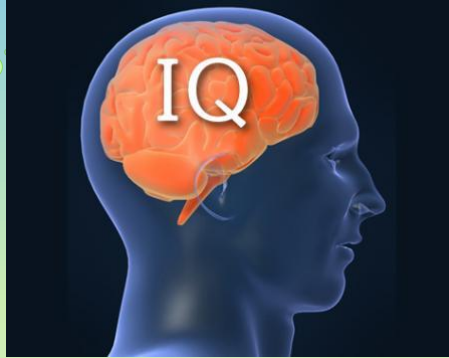
WALK AND TALK: Movement and Talk helps cement learning

LEARNING & the BRAIN®

conclusions

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ARE VERBAL IQ TEST ITEMS DIFFERENT FROM ACHIEVEMENT TEST ITEMS?



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conclusions

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Verbal intelligence or achievement?

<http://www.jacknaglieri.com/nnat.html>

CHAPTER

4

Traditional IQ: 100 Years of Misconception and Its Relationship to Minority Representation in Gifted Programs

Jack A. Naglieri

Introduction

The underrepresentation of minority children in classes for the gifted has been and continues to be one of the most important problems facing educators of gifted students (Ford, 1998; Naglieri & Ford, 2005). The severity of the problem was made obvious in the United States Department of Education's recent report that Black, Hispanic, and Native American students are underrepresented by 50–70% in gifted education

72 conclusions

The First IQ TEST: Alpha

1. Bull Durham is the name of a **tobacco**
2. The Mackintosh Red is a kind of **fruit**
3. The Oliver is a **typewriter**
4. A passenger locomotive type is the **Mogul**
5. Stone & Webster are well know **engineers**
6. The Brooklyn Nationals are called **Superbas**
7. Pongee is a **fabric**
8. Country Gentleman is a kind of **corn**
9. President during the Spanish War **Mckinley**
10. Fatima is a make of **cigarette**

From: Psychological Examining the United States Army (Yerkes, 1921, p. 213)

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conclusions

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VIQ is Achievement - Vocabulary

What does scared mean?

(The child answers orally)

Someone who is glad is

- (a) tall
- (b) proud
- (c) happy
- (d) alone

Wechsler or Binet Vocabulary item presented orally by the examiner:

Stanford Achievement Test Reading Vocabulary

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conclusions

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VIQ is Achievement - Arithmetic

"A boy had twelve books and sold five. How many books did he have left?"

Stanford-Binet 5th Ed.
Quantitative items

Peter counted seventeen lily pads at the pond. There were frogs sitting on five of the lily pads, and the rest were empty. How many lily pads were empty?

(a) 22 (b) 13 (c) 12

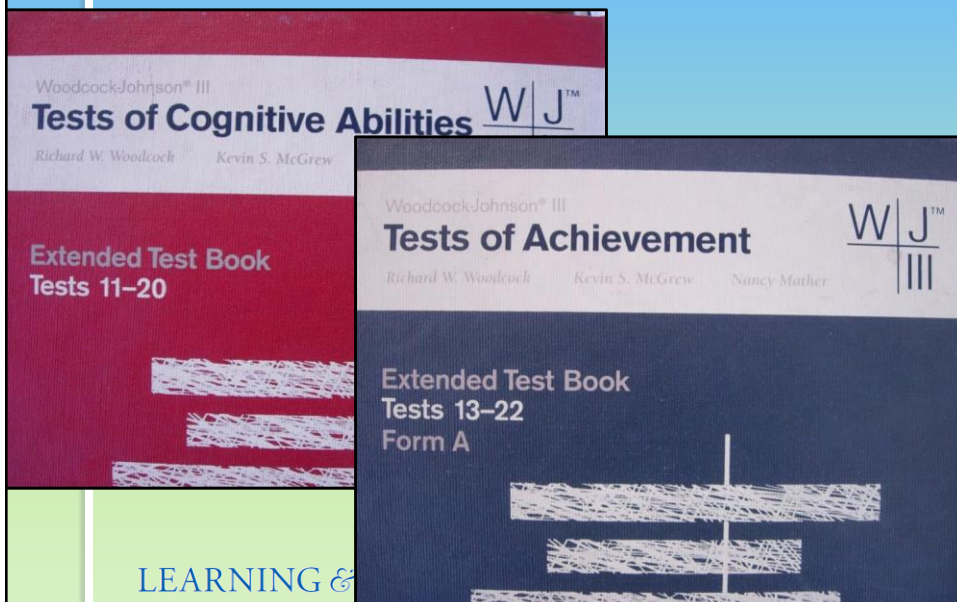
Stanford Achievement Test
Math item

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Ability or Achievement ?



Which is Ability and which is Achievement?

<p>Test 14 Picture Vocabulary</p> <p>Scoring</p> <ul style="list-style-type: none"> 1 = Correct response 	<p>Test 1A Verbal Comprehension–Picture Vocabulary</p> <p>Administration Overview</p> <ul style="list-style-type: none"> Test 1 Verbal Comprehension is comprised of four subtests—1A Picture Vocabulary, 1B Verbal Comprehension–Synonyms, 1C Verbal Comprehension–Antonyms, and 1D Verbal Comprehension–Verbal Analogies. You must administer all four subtests to obtain a score for Test 1 Verbal Comprehension.
<p>Test 1B Verbal Comprehension–Synonyms</p> <p>Administration Overview</p> <ul style="list-style-type: none"> Test 1 Verbal Comprehension is comprised of four subtests—1A Picture Vocabulary, 1B Verbal Comprehension–Synonyms, 1C Verbal Comprehension–Antonyms, and 1D Verbal Comprehension–Verbal Analogies. You must administer all four subtests to obtain a score for Test 1 Verbal Comprehension. 	<p>Test 17A Reading Vocabulary–Synonyms</p> <p>Administration Overview</p> <ul style="list-style-type: none"> Test 17 Reading Vocabulary is comprised of three subtests—17A Synonyms, 17B Antonyms, and 17C Analogies. You must administer all three subtests to obtain a score for Test 17 Reading Vocabulary.
<p>Test 1C Verbal Comprehension–Antonyms</p> <p>Administration Overview</p> <ul style="list-style-type: none"> Test 1 Verbal Comprehension is comprised of four subtests—1A Picture Vocabulary, 1B Verbal Comprehension–Synonyms, 1C Verbal Comprehension–Antonyms, and 1D Verbal Comprehension–Verbal Analogies. You must administer all four subtests to obtain a score for Test 1 Verbal Comprehension. It is essential that you know the exact pronunciation of the word for each administering this test. 	<p>Test 17B Reading Vocabulary–Antonyms</p> <p>Administration Overview</p> <ul style="list-style-type: none"> Test 17 Reading Vocabulary is comprised of three subtests—17A Synonyms, 17B Antonyms, and 17C Analogies. You must administer all three subtests to obtain a score for Test 17 Reading Vocabulary. On this test, the subject reads the stimulus words aloud. You may wish to record oral reading errors for later error analysis. However, only the response is scored.
<p>Test 1D Verbal Comprehension–Verbal Analogies</p> <p>Administration Overview</p> <ul style="list-style-type: none"> Test 1 Verbal Comprehension is comprised of four subtests—1A Picture Vocabulary, 1B Verbal Comprehension–Synonyms, 1C Verbal Comprehension–Antonyms, and 1D Verbal Comprehension–Verbal Analogies. You must administer all four subtests to obtain a score for Test 1 Verbal Comprehension. 	<p>Test 17C Reading Vocabulary–Analogies</p> <p>Administration Overview</p> <ul style="list-style-type: none"> Test 17 Reading Vocabulary is comprised of three subtests—17A Synonyms, 17B Antonyms, and 17C Analogies. You must administer all three subtests to obtain a score for Test 17 Reading Vocabulary.

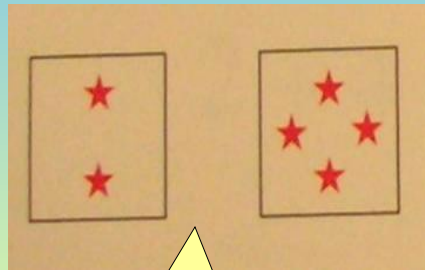
Quantitative Ability or Achievement?

- “Neal had five marbles. Then his mother gave him three more marbles. How many marbles did he have then?”



Wechsler Individual Achievement
Numerical Operations Subtest

- “How many stars are there all together?”



Stanford-Binet 5
Quantitative Reasoning

N®

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Quantitative Ability or Achievement?

- “Drinks and snacks cost money. Show me how much money these drinks and snacks would cost.”



SB5 Quantitative Reasoning

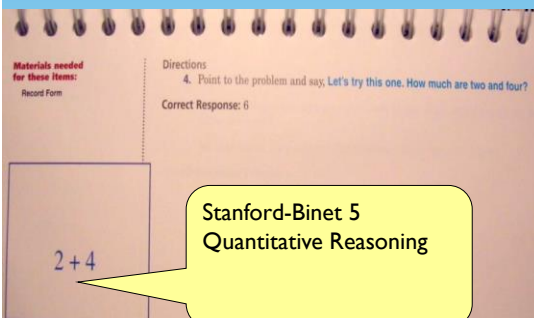
- “If you bought both balls and you had this much money, how much money would you have left?”



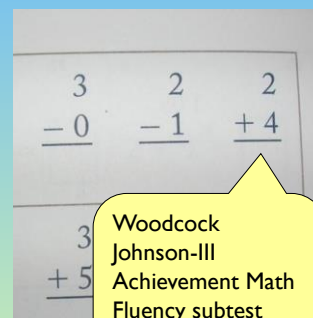
WJ-III ACH Applied Problems

79

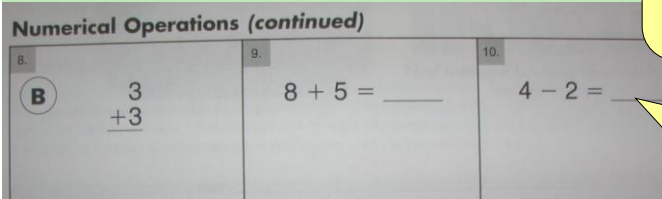
The Same Arithmetic Item!



Stanford-Binet 5
Quantitative Reasoning



Woodcock
Johnson-III
Achievement Math
Fluency subtest



WIAT-II
Numerical
Operations

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Think and Talk



&



- Share some of your new Aha's and Wonderings with your group.
- How does this impact identification of students intelligence?

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conclusions

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Myth of Verbal IQ - Conclusions

- The lack of a clear distinction between ability and achievement tests has corrupted the very concept of "verbal ability"
- A child who does not have an adequately enriched educational experience will be at disadvantage when assessed with so-called Verbal and Quantitative reasoning "ability" tests

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Poverty and Test Scores

- Children from homes with limited enrichment receive low test scores because of unequal opportunity to learn
- Too many minority students are penalized on traditional tests of intelligence leading to under- and over-representation
- Many children with Specific Learning Disabilities do poorly on Verbal and Quantitative tests because of school failure and get LOW IQs

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conclusions

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Minority Representation

- The over-representation of minorities in special education is a significant problem (Naglieri & Rojahn, 2000).
- There is under-representation of minorities in gifted (Ford, 1998).
 - Black, Hispanic, and Native American students by 50% to 70% (U.S. Dept of Education, 1993)
 - What do the percentages mean in terms of real numbers?

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Gifted Students Missed

Number and Percentage of Students in US Public Schools Grades K-12 in 2015.

Race/Ethnic	% in US	N	8 % GT	N Missed
White	49%	24,700,000	1,976,000	
Black	15%	7,700,000	616,000	308,000
Hispanic	26%	13,100,000	1,048,000	419,200
Other	9%	4,600,000	368,000	
Total	100%	50,100,000	4,008,000	727,200

Note: N Missed is based on 50% of Black and 40% of Hispanics

➤ From: Naglieri, J. A. & Otero, T. M. (2017). *Essentials of CAS2 Assessment*. New York: Wiley.

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IDEA 2004

“(3) ADDITIONAL REQUIREMENTS.—Each local educational agency shall ensure that—

“(A) assessments and other evaluation materials used to assess a child under this section—

**non
discriminatory
assessments**

“(i) are selected and administered so as not to be discriminatory on a racial or cultural basis;

“(ii) are provided and administered in the language and form most likely to yield accurate information on what the child knows and can do academically, developmentally, and functionally, unless it is not feasible to so provide or administer;

“(iii) are used for purposes for which the assessments or measures are valid and reliable;

“(iv) are administered by trained and knowledgeable personnel; and

“(v) are administered in accordance with any instructions provided by the producer of such assessments;

“(B) the child is assessed in all areas of suspected disability;

“(C) assessment tools and strategies that provide relevant information that directly assists persons in deter-

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BREAK TIME



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conclusions

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Foldables for Capturing BIG Ideas



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21st Century and The Learning Brain

- We are at an exciting and challenging crossroads in education. Science, especially neuro-imaging, is giving us real-time visual images of how the brain learns and which teaching strategies most successfully effect the learning process.



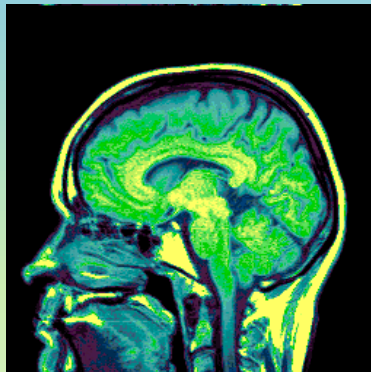
- Judy Wills, Neurologist and Teacher

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INTELLIGENCE IN THE 21ST CENTURY CONCEPTUALIZED AS BRAIN FUNCTION



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conclusions

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From IQ to Brain Function



➤ Learning is based on BRAIN function

- Wechsler (traditional IQ) not based on brain
- We can redefine intelligence as neurocognitive processes based on brain function (A. R. Luria)

➤ Reinvent IQ based on the brain

- Measure brain function, not IQ
- Do not include achievement test questions
- Measure **thinking** not **knowledge**

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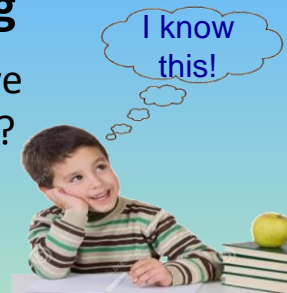
conclusions

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Knowledge vs. Thinking

➤ What does the student have to **know** to complete a task?

- *This is dependent on developing content understanding*



➤ How does the student have to **think** to complete a task?

- *This is dependent on developing the metacognitive brain*



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Brain Rule #4 - Medina

“We need to repeat to remember”



Talking

about an event
immediately after it has
occurred

enhances

memory

for that event

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A Brain-Based view of Intelligence

and how this changes our view of students

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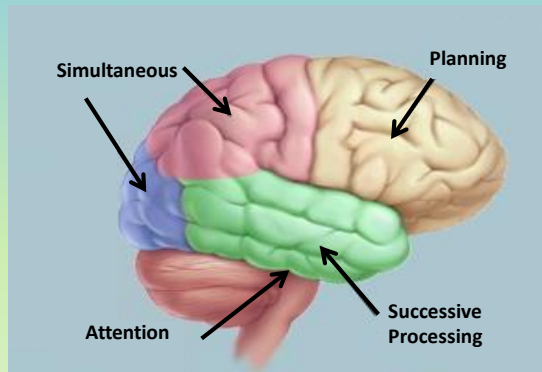
conclusions

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PASS Neurocognitive Theory

- The brain is the seat of abilities called PASS
- These neurocognitive processes are the foundation of learning (Naglieri & Otero, 2011)

Naglieri, J. A. & Otero, T. (2011). Cognitive Assessment System: Redefining Intelligence from A Neuropsychological Perspective. In A. Davis (Ed.). *Handbook of Pediatric Neuropsychology* (320-333). New York: Springer Publishing.



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conclusions

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PASS Neurocognitive Theory

- **Planning** = THINKING ABOUT HOW YOU DO WHAT YOU DECIDE TO DO
- **Attention** = BEING ALERT AND RESISTING DISTRACTIONS
- **Simultaneous** = GETTING THE BIG PICTURE
- **Successive** = FOLLOWING A SEQUENCE
- **PASS theory** is a way to measure neuro-cognitive abilities related to brain function

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A Theory of Learning

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Cognitive Assessment System: Redefining Intelligence From a Neuropsychological Perspective

Jack A. Naglieri and Tulio M. Otero

INTRODUCTION

Pediatric neuropsychology has become an important field for understanding and treating developmental, psychiatric, psychosocial, and learning disorders. By addressing both brain functions and environmental factors intrinsic in complex behaviors, such as thinking, reasoning, planning, and the variety of executive capacities, clinicians are able to offer needed services to children with a variety of learning, psychiatric, and developmental disorders. Brain-behavior relationships are investigated by neuropsychologists by interpreting several aspects of an individual's cognitive, language, emotional, social, and motor behavior. Standardized instruments are used by neuropsychologists to collect information and derive inferences about brain-behavior relationships. Technology, such as magnetic resonance imaging (MRI), functional MRI (fMRI), positron emission tomography, computerized tomography, and diffusion tensor imaging, has reduced the need for neuropsychological tests to localize and access brain damage. Neuropsychological tests, however,

Such tools should not only provide the necessary processes necessary for efficient functioning but also provide for the detection of deviations and address the question of how to

FROM NEUROPSYCHOLOGY TO ASSESSMENT

Luria's theoretical account of brain-behavior relationships is perhaps one of the most influential in the field (Luria, 2008). Luria conceptualized brain-behavior relationships in terms of three orders that the clinician must consider: the biological, the functional, and the social. The brain, the functional syndromes and impairments, and the clinical methods of assessment and treatment are all interconnected. Luria's theoretical formulations, methods, and ideas are articulated in works such as *Higher cortical functions in man* (1966, 1980) and *The Working Brain* (1973). Luria viewed the brain as a functional mosaic, the parts of which interact in dif-

Handbook of PEDIATRIC Neuropsychology

Andrew S. Davis
Editor

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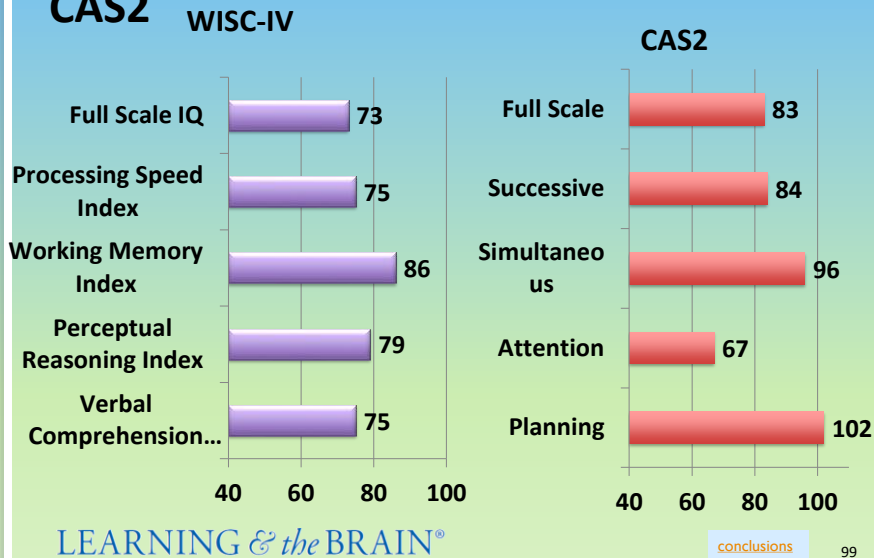
BACK TO ALEJANDRO

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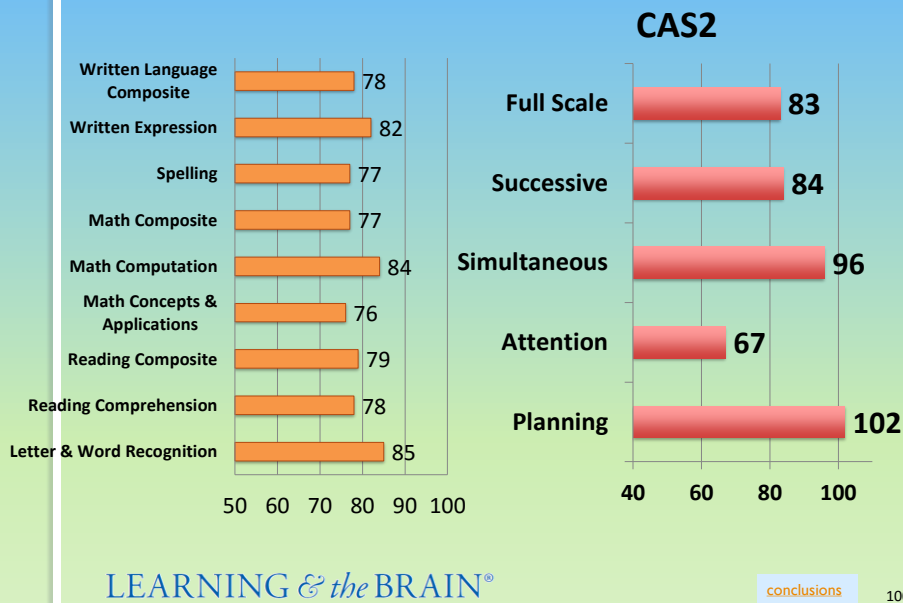
conclusions

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Assessing Brain Function Paints a Different Picture: PASS Scores from CAS2



Alejandro's Results



Alejandro and PASS (by Dr. Otero)

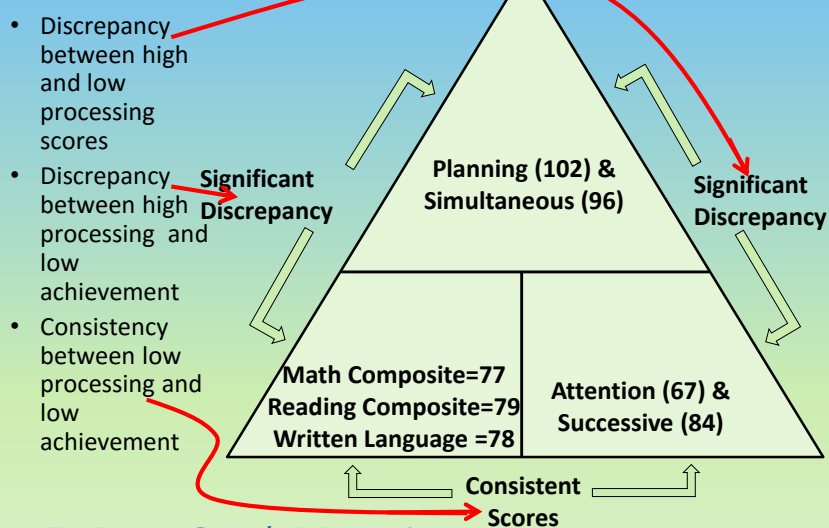
- ▶ Alejandro is not a slow learner.
- ▶ He has good scores in basic psychological processes:
 - ▶ Simultaneous = 96 and Planning = 102
- ▶ He has a “disorder in one or more of the basic psychological processes”
 - Attention = 67 and Successive = 84
- ▶ And he has academic failure which equals an SLD determination.

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conclusions

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Discrepancy Consistency Model for SLD



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conclusions

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Think and Talk



&



- Which test results make more sense? Why?
- Did CAS2 Results change your mind about his abilities? How?
- Your thoughts...

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LET'S TAKE A BRAIN BREAK or Syn-Nap



The brain needs time to **process!**

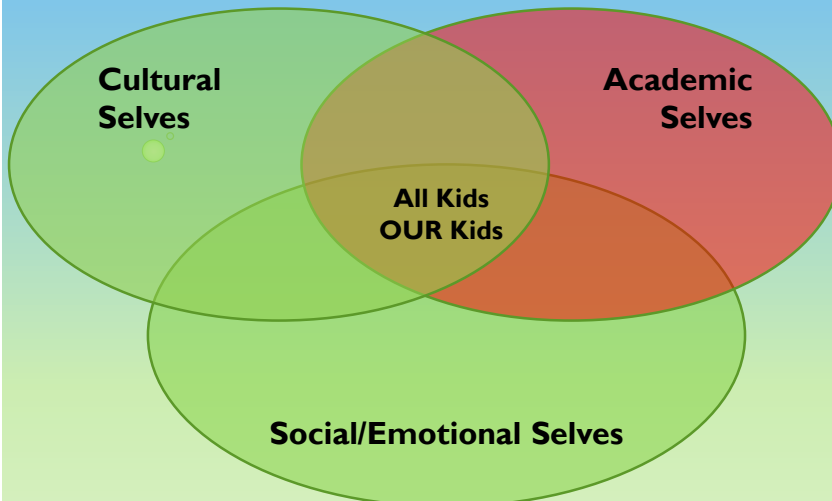
- **Stretch**
- **Cross Laterals**
- **Walk and Talk**
- **Energizers**
- **Relaxers**



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CREATING A SAFE CLASSROOM FOR THINKING SMART



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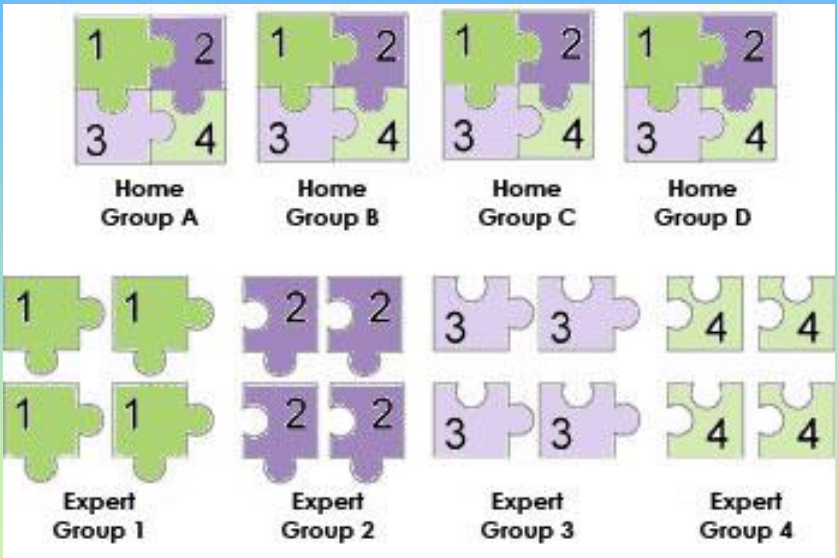
105



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Home Group A Home Group B Home Group C Home Group D

Expert Group 1 Expert Group 2 Expert Group 3 Expert Group 4

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Jigsaw: Let's Process

- Share THREE ideas with your Core Group members that are important for them to remember about the brain from your area of focus. (Cultural, Emotional or Academic)

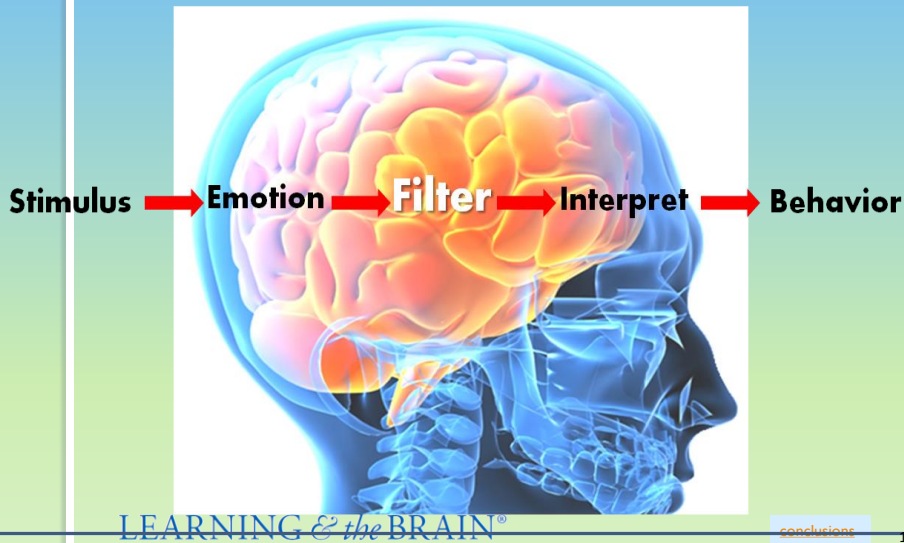


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Our Emotional Brains



The Brain and a Safe Learning Environment

- **DESTRESS:** Stress causes the brain intake systems to send information into the Reactive brain (automatic-fight, flight, freeze) and prevents information flow through to the Reflective prefrontal cortex where long-term memory is constructed. **Supportive classroom communities lower brain stress and open filters for learning.**

➤ Dr. Judy Willis



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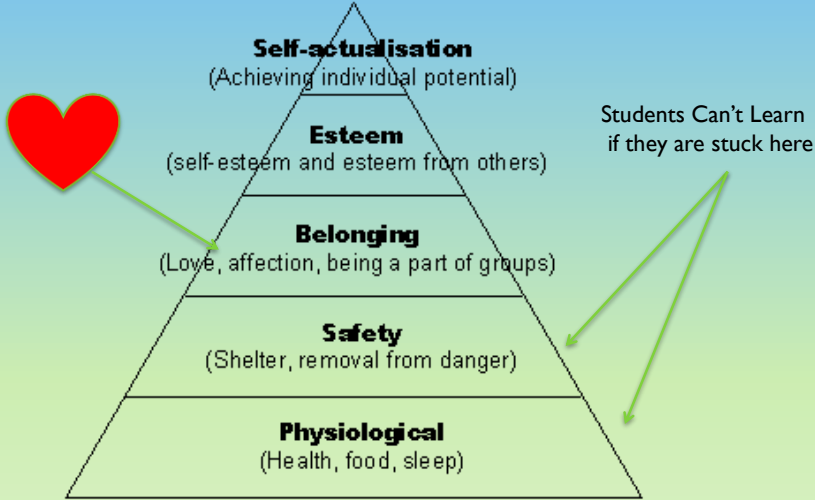


**Students don't care
what you
know,
Until they know
that you care**

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Maslow Was Right On!



Self-actualisation
(Achieving individual potential)

Esteem
(self-esteem and esteem from others)

Belonging
(Love, affection, being a part of groups)

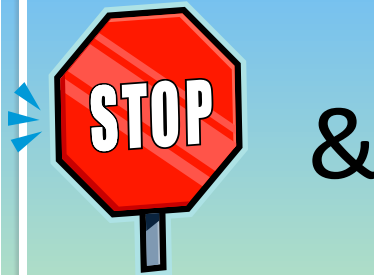
Safety
(Shelter, removal from danger)

Physiological
(Health, food, sleep)

Students Can't Learn
if they are stuck here

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conclusions 112



&



Chat Chums: What is a way you create a safe environment for Thinking Smart in your school or classroom?

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conclusions

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Self Reflection: Questions to Ask Yourself

- How does my own *emotional* Hero's Journey help or hinder my teaching?
- When a student triggers you, ask yourself, "Is the student behavior a result of the student's social-emotional needs?"



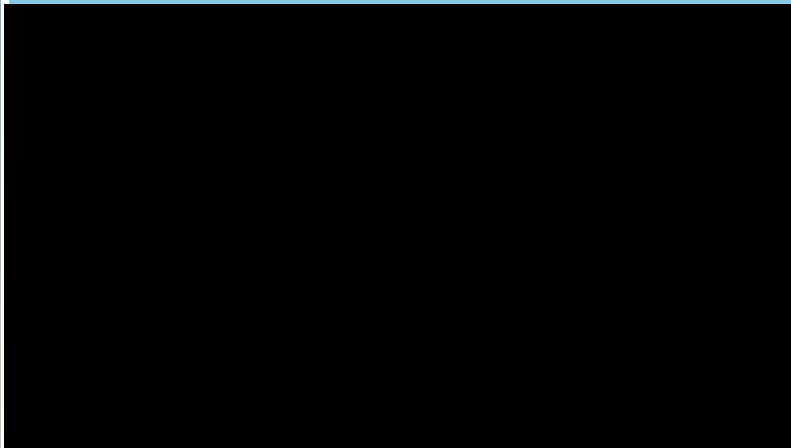
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Our Cultural Brains



Culture Clash?

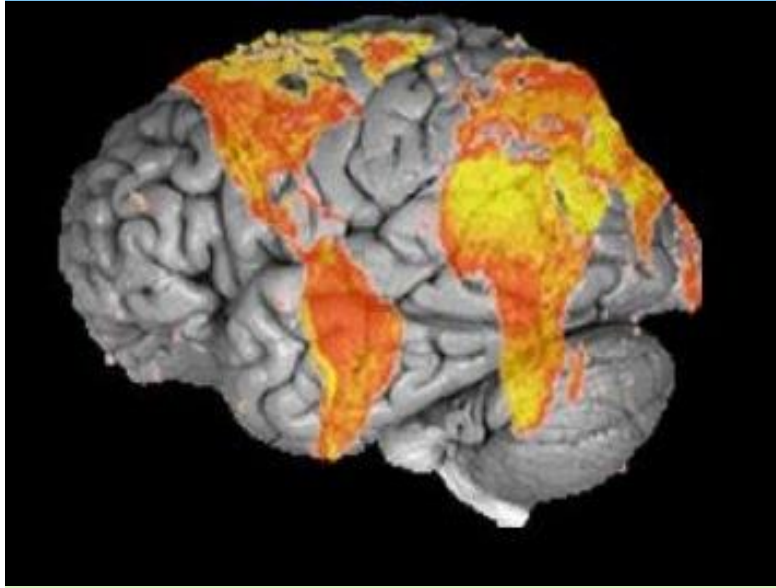


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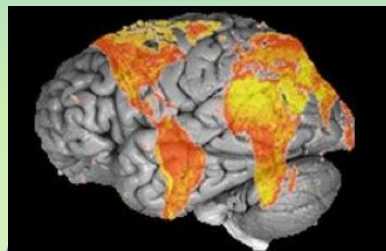
Cultural Neuroscience: The study of how our environment shapes our brain function.



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Cultural Neuroscience & Equity Pedagogy

- Research is suggesting that the way that Chinese and Americans learn math may be culturally different.
- Chinese language is made up of images and writing, so areas of the brain that respond **to vision and movement are used when solving math problems.**
- English is a sound-based language, so areas in the brain linked to **language processing and verbal information may be more involved.**
 - Nalini Ambady, Stanford University, 2011



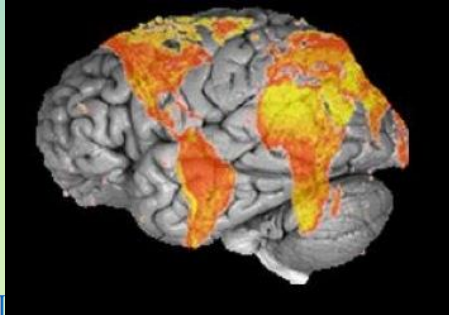
LEARNING & the BR.

ions

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Cultural Neuroscience & Equity Pedagogy

- Although Chinese and Americans alike would arrive at the conclusion that $2+2=4$, *the internal paths they navigate to get there seem to be quite different.*



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conclusions

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Transform Your Teaching Big Idea About Culture

- | | |
|---|--|
| <p>➤ Collectivist Cultural Values</p> <ul style="list-style-type: none"> ▪ Emphasis is on groups as the primary entity ▪ Choices are made with consideration of the group ▪ Interactions are interdependent based on the role a person plays in the group ▪ Individuals always seen as a part of the collective. | <p>➤ Individualistic Cultural Values</p> <ul style="list-style-type: none"> ▪ Emphasis is placed on the needs, ideas and development of the individual. ▪ A person's actions are his or her own, ▪ Choices are based on personal concerns ▪ Interacting in a group they do so as an individual. |
|---|--|

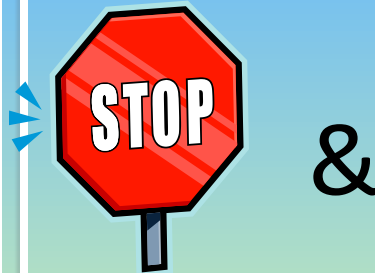


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Pg. 2

conclusions

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&



How have we been learning both collectively and individually thus far today? How have we learned in varied modalities?

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conclusions

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Self Reflection Questions to Ask...

- How does my own *cultural* Hero's Journey help or hinder my teaching?
- When a student triggers me, ask myself, "Is the student's behavior a result of deep cultural values that drive different actions or behaviors? "

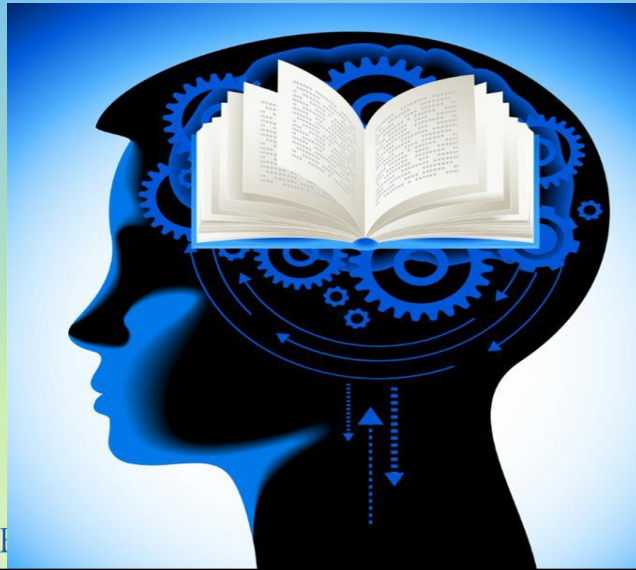


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conclusions

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Our Academic Brains



LE

conclusions

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The Brain and Learning

In the classroom, the more ways the materials in the are introduced to the brain and reviewed, the more dendritic pathways of access will be created. There will be more cell-to-cell bridges and these pathways will be used more often, become stronger and remain safe from pruning.

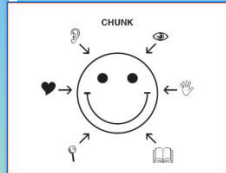


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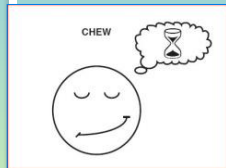
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Differentiating for ALL Learners



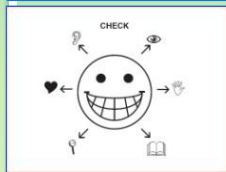
CHUNK – Acquire/Input

Chunk: how students acquire/take in new information



CHEW – Process

Chew: how students make sense of information



CHECK – Show What You Know/Output

Check: how students demonstrate their understanding

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conclusions

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Chunk, Chew and
Check - that's
how the brain
learns best!



CHANT IT,
REMEMBER IT!

- For every 10 minutes you teach something new...
- The brain needs one to two minutes to chew!

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conclusions

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Chat Chums



Smaller Chunks,
More time to chew?
More perspectives?
More modalities:
pictures, technology,
movement?
Leveled Text?

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conclusions

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Self Reflection: Questions to Ask Yourself

- How does my own *academic* Hero's Journey help or hinder my teaching?
- When a student triggers you, ask yourself, "Is the student behavior a result of an academic challenges?"



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conclusions

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The Brain and Making Learning Stick

- **PRACTICE MAKES PERMANENT:** Review material using multiple sensory lessons so different neural networks store the knowledge in multiple brain regions. Their brains will build multiple pathways leading to the stored memory, which makes retrieval more efficient. **When a memory has been recalled often, their repeated activation strengthens its neuronal circuits - like exercising a muscle**
- Dr. Judy Willis



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www.kathleenkryza.com
conclusions

Teaching for Transfer

If we want learning to stick, we have to make it sticky.

ILS Make Learning Stick!



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Six Learning Foundations that Work for ALL Learners

- Safe Environment
- Routines and Procedures
- Growth Mindsets
- Student Talk
- Student and Teacher Self Reflection
- Mindfulness



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conclusions

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Let's Unpack the Day

How have we addressed the 6 Foundations in today's workshop?



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Stand and Share



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Think back to the SNL video this morning. Why do we need to develop these six foundations if we want kids to “Think Smart?”

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Foldables for Capturing BIG Ideas



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Three Categories for Each Day

- Summarize the Big Idea and WHY it's important.
- List 3-5 facts you want to remember
- Note at least three take away strategies or ideas you plan to use in your work with students.



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Your Final Project for This Week

- Using the notes from your foldables, and working with your core group, come up with a 3 minute presentation that summarizes the big ideas of what you have learned in this Summer Institute.
 - Song/Rap/Poem
 - Skit or Video
 - Art Project
 - Chart/Graph
 - Your Choice



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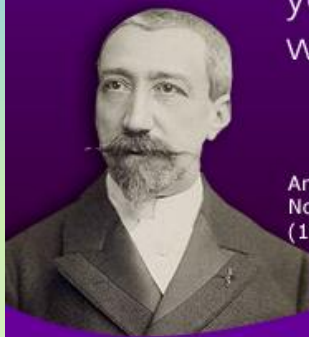
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Your Ticket out the door!

140704130208	<p>What are your greatest concerns about getting students to Think Smart?</p> <p>What do you most hope to walk away with by the end of this week?</p>	140704130208
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"An **education isn't** how much you have committed to memory, or even **how much you know**. It's being able to **differentiate between** what you do **know and** what you **don't**."



Anatole France
Novelist and Nobel Prize winner,
(1844-1924)



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