### "Intellectual" or "Emotional"? Why Not *Both*?



Kenneth Wesson Educational Consultant: Neuroscience San Jose, CA kenawesson@aol.com The greatest obstacle to discovery is not ignorance - it is the *illusion* of *knowledge.*" -- Daniel J Boorstin

It's not what we don't know that makes learning so difficult. It is what we have learned that is the bigger obstacle to formal education.

We have been trained to close our minds to one of the most important factors influencing student learning although it is literally right in front of us every minute, but we've been convinced that it should be ignored -- Emotions.







Happy



Anary



Anary Open







Disgusted Open Disgusted

Fearful

Fearful Open

Happy Open













#### The four 21<sup>st</sup> century pillars of education:

- learning (in order) to know
- learning (in order) to do
- learning (in order) to be
- learning (in order) to live together.

(UNESCO, 2009)





#### "Intellectual" or "Emotional"? Why Not *Both*?

- Learning (IQ) begins with and is sustained by emotions, and teachers should be keenly aware of the role that emotions play every minute in the classroom (and in life), particularly the emotional basis of all student learning → memory.
- Emotional safety is a school requirement (a priority).
- How do we create the classroom conditions that advance learning and development through SEL (empathy) and "Positive Psychology"?





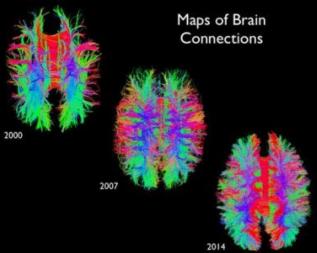
A Teacher's Mindset

## "What formal education for one child for one year depends on what his/her teacher believes, knows, and does and doesn't believe, doesn't know, and doesn't do".



#### A Teacher's Mindset

- Knowing <u>who</u> you teach (a child with 100B neurons capable of making an infinite number of learning connections for a lifetime) is just as important as what you teach (disciplinary content).
- "I teach mathematics." No, you teach students whose brains prefer to learn by actively making elaborate connections inside their brains.

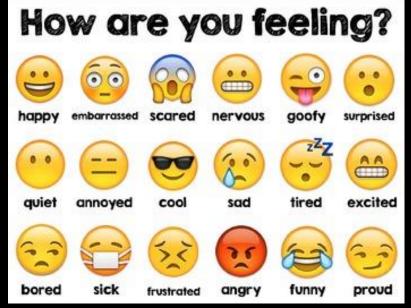




#### A Teacher's Mindset

Children/students (young brains)...

- grow and learn at different rates/ways
- reach competence in some skills more quickly than others
- learn through different strategies/means
- have different strengths and capabilities)
- have different emotional needs, emotional ranges, and dispositions on *different days!*







#### "I Have a Discipline Problem." No! You Have an *Engagement* Problem







### Engagement

- Phenomena-based learning
- Inquiry (an onslaught of questions)
- Social connections

Emotions → attention → learning → memory (integrated in the brain)

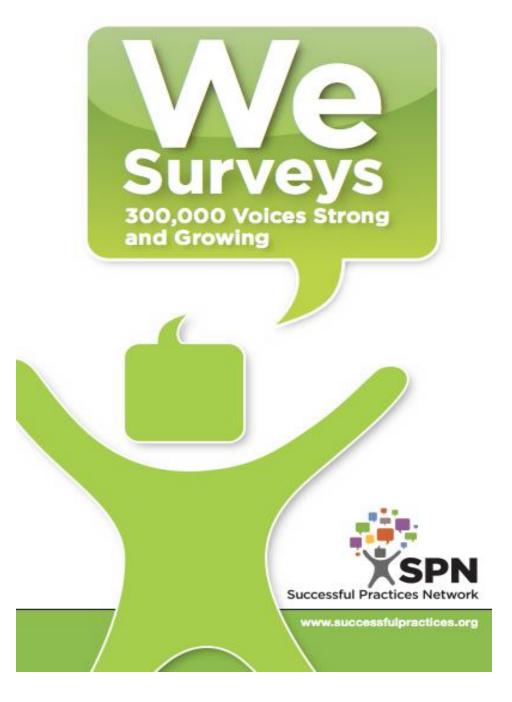




### Building

Supportive Relationships **PRE-school** = Positive Relational

Experiences



### We Lead

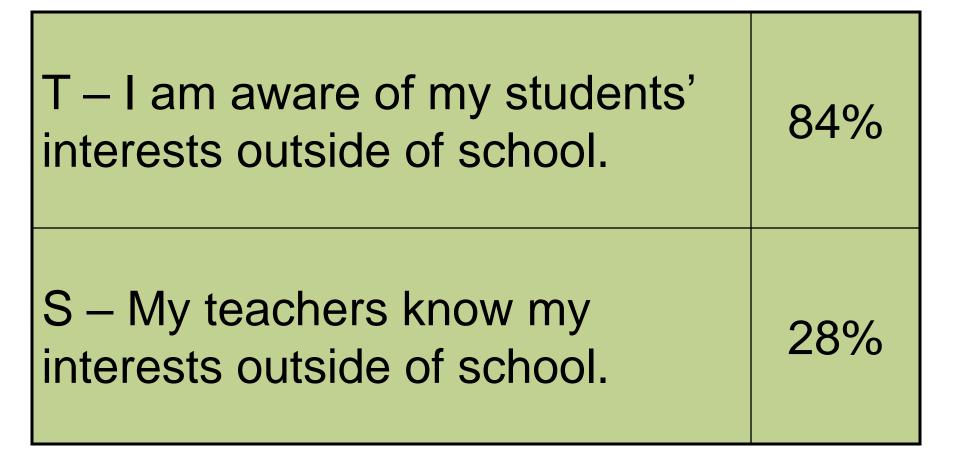
### We Teach

### We Learn

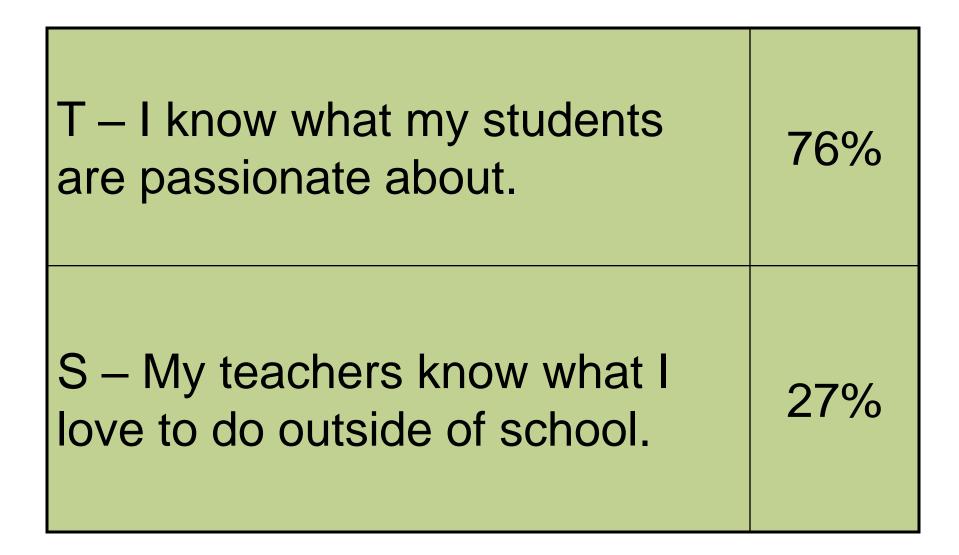
We Support

217,596 students 21,028 teachers

### **Teacher – Student Comparisons**



#### **Teacher – Student Comparisons**





### Selected Data—My Voice Survey TEACHER AS EMOTIONAL MODEL

## 46% Teachers care about my problems and feelings.

50% Teachers care about me as an individual.

49% Teachers care if I am absent from school.

50% If I have a problem, I have a teacher with whom I can talk.



### **The Four Basic Emotions\***



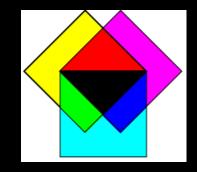
### (+ surprise, disgust)







Dr. Robert Plutchik



The three primary colors can be combined to make all other colors, but the other colors cannot make the primary colors.





### It's Written All Over Your Face

# How do we connect with others emotionally? - It is partially dependent on how they see *themselves*.

The emotions you feel are revealed largely through your facial expressions. Other people respond to you based on the "signals" that you send via your facial cues (vitally important non-verbal social and survival information).



### **Emotional Literacy**



**Emotions:** Internal subjective states that we infer in ourselves/others.

- Emotions are private experiences.
- We use operational definitions because we cannot actually <u>see</u> <u>feelings</u> (so, we "read" faces)
- We infer observable behavior and associate it with an emotion we recognize (from experience), and we do this without any conscious effort or awareness.



### **Emotional Literacy: Relationship Skills**





- Think about children you know who are well liked and friendly...
- What do you notice about their behavior and expressions that make it easier for them tobe liked and to make friends?
- What makes them different?



1. 30 people will receive a headband that describes an emotional state. (+ 5 blank headbands where a partner will indicate your emotional state)

2. Select an individual who will wear the headband. (Do not let them see what is written on their headband). That individual will close his/her eyes as the headband is placed around their forehead so others can "read" them.

3. We will interact with those individuals with their emotions "written on their faces" (based on what we "read" from their headband.)



#### The headbands will indicate one of the following emotions or emotional states:

- 1. Irritable
- 2. Fearful
- 3. Unhappy
- 4. Passionate
- 5. Angry
- 6. Bitter
- 7. Furious
- 8. Cheerful
- 9. Melancholy
- 10. Abandoned

- 11. Bubbly
- 12. Mellow
- 13. Sweet
- 14. Hostile
- **15. Depressed**
- 16. Grouchy
- 17. Attractive
- **18. Terrified**
- 19. Shy
- 20. Ashamed

- 21. Ambivalent
- 22. Lonely
- 23. Rejected
- 24. Cranky
- 25. Tense
- 26. Worried
- 27. Joyful
- 28. Scared
- 29. Dispirited
- **30. Enthusiastic**



### It's Written All Over Your Face

- 1. Did the treatment/reactions of others begin to modify your own feelings/emotions about yourself?
- 2. Were you beginning to understand how others were seeing you based on their perceptions of your emotional state?
- 3. What did you discover about the emotional signals/ messages we "send" to others (on a regular basis) recognizing how it will shape your self-concept?
- 4. What should educators communicate to students about the moods we display or "project" to others?

"We do not always attract what we want, but what we are."



### **Indirect Teaching**



 Offer emotional labels as children witness/experience various emotional states –

"Brianna and Tanya seem really happy to be playing together! They keep hugging each other!"

 Describe what you see that tells you they are happy.



#### **Direct Teaching of Emotional Literacy**



- How do your feel today?
- Would you like to feel differently?
- What do you need to do to change how you feel?

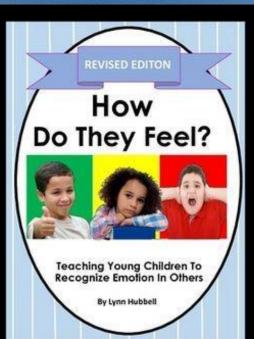


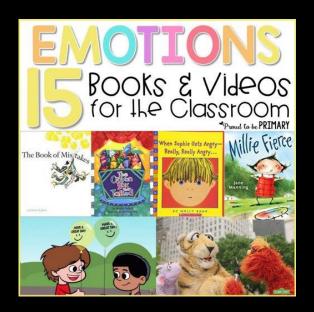
#### **Managing Emotions: Making Choices**

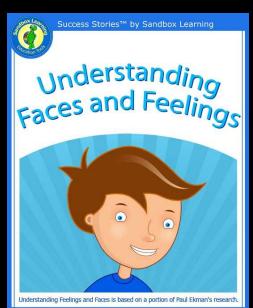
#### On Monday When It Rained



by Cherryl Kachenmeister Photographs by Tom Berthiaum













**COPING STRATEGIES** problem solving for kids





#### **Managing Emotions: The Turtle Technique**

Recognize that you feel angry.

Go into your

shell, take 3

and think

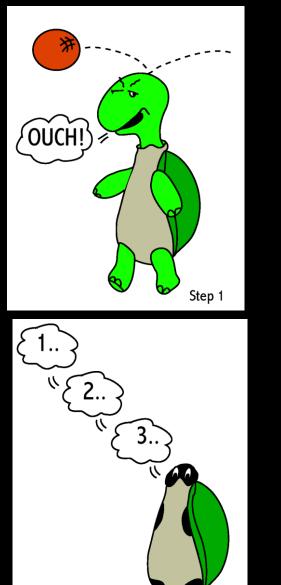
beach").

deep breaths,

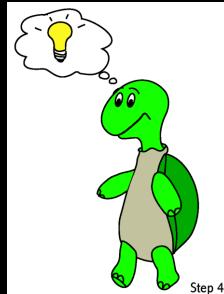
calming/coping

thoughts ("your

last walk on the



Step 3



60

Step 2

"Stop and Think"

-- Rochelle Lentini

Come out of shell when you are calm and/or have thought of a solution.

### Harry Harlow: Isolation of Infant Monkeys

- Partially vs. fully-isolated monkeys
  - Partially isolated (occasional social contact)
    - Repetitive circling of cages, blank staring, and occasional self mutilation
  - Total social deprivation (6, 12, 24 months)
    - 6 months = emotional shock when reintroduced: rocking and clenching, rare anorexia
    - 12, 24 months = "obliterated the monkeys socially"
  - All isolated monkeys exhibited little to no recovery



FIG. 1.-Semisocial isolation living cage.



#### **Prolonged Stress and the Romanian Orphans**

 Correlation between ↑ localized neural connections and ↑ glucose (energy) consumed to maintain those regional connections. A ↑ energy consumed in support of normal localized brain functions.

- Areas of decreased glucose metabolism found in the Romanian orphans included the...
  - Amygdala
  - Temporal lobe (emotions, memory)
  - Prefrontal infralimbic cortex
  - Orbital frontal cortex
  - Orbital gyrus
  - Lateral temporal cortex
  - Medial temporal cortex
  - Brainstem

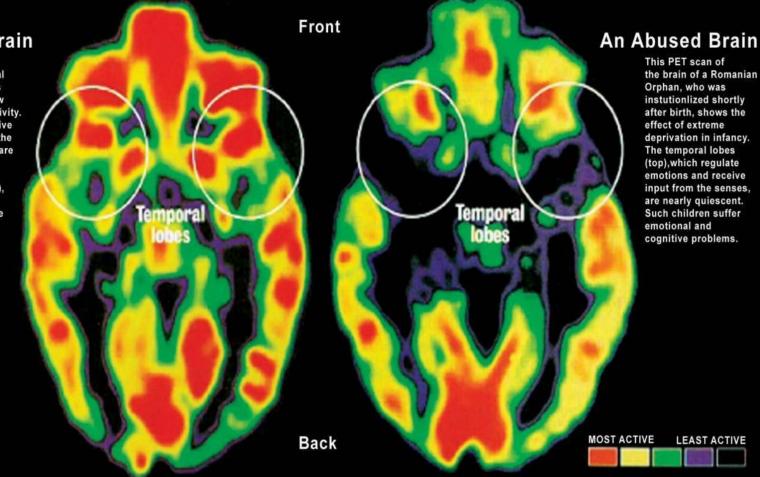
...seldom recover from lonely beginnings



#### Global Neglect and Reduced Brain Development

#### **Healthy Brain**

This PET scan of the brain of a normal child shows regions of high (red) and low (blue and black) activity. At birth, only primitive structures such as the brain stem (center) are fully functional; in regions like the temporal lobes (top), early childhood experiences wire the circuits.



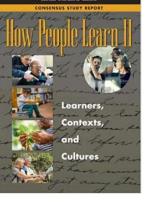


- A mother rat licking and grooming infants initiates a cascade of events that turn on genes for growth.

 Researchers found that merely stroking infants with a small brush could prevent the effects.

 Rats who received physical attention in youth had considerably less hippocampal cell loss during old age and they performed better on certain memory tasks in old age.





#### **Emotions and Learning**



Inclusion. interactions

and involvement

Interpersonal/social aspect

of memory formation

The environmental preconditions that should be experienced by students *prior to* initiating formal instruction include...



After satisfying these prerequisite neurophysiological and hierarchical conditions, *students are biologically ready for...* 



Learning Students feel their immediate environment is secure enough for them to take risks, explore and discover

Source: Kenneth Wesson (2011). Education for the Real World; Six great ideas for parents and educators Brain World, issue 2, Volume II Winter 2011

Students who have chronic safety concerns also tend to *underperform* academically (Pratt, Tallis, & Eysenck, 1997).





 Many students need someone who will listen to them, give them a hand to hold, and a heart to that understands them. (adolescents)



 When a student hears, "Seeing how hard you are working really made my day!" That will make his/her day (promotes the "growth mindset" and activates our "mirror neurons")





Setting the Emotional Stage for the Day

## When students walk into the classroom daily, have music already playing:

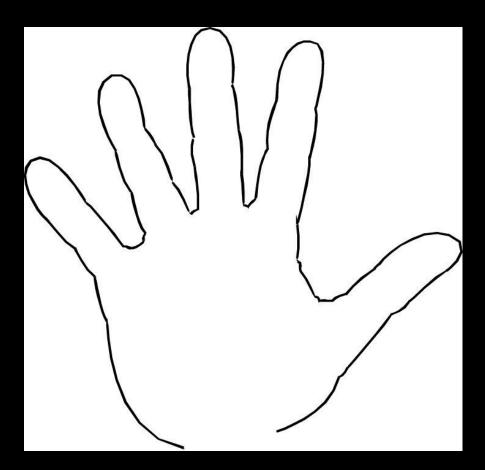
- "Celebration Time"
- "Happy"
- Music at 60 beats/minute



 Take time out to sit and think or reflect on *positive* thoughts (mindfulness)



#### Emotional Fulfillment: A Helping Hand Fosters Growing Minds



### Have each student write the name of a classmate who helped him/her along the path of learning a given concept in class

Source: Kenneth Wesson (2011). Education for the Real World; Six great ideas for parents and educators. Brain World, Issue 2, Volume II Winter 2011.



### The Helping Hand "Create" the Classroom Culture

- "Find someone in the classroom who can help you with..."
- It directs students to non-judgmental/low-risk,

developmentally-appropriate help

- It validates the helper
- "To teach is to learn twice."
- Decreases bullying -- simultaneously builds relationships
- The Strive Research Group at Stanford University



### **Positive Emotional Climate**

- Showing respect and empathy
- Taking a personal interest in a child (one-to-one communications)
- Active listening "being there" for the moment
- Frequent contact through "face-time"
- Encouragement (not praise) "You really worked hard..."
- Avoiding all "Put Downs" use positive humor
- Displaying children's work (confirming), celebrating accomplishments (rewards, recognition, etc.)





### **Emotions and Task Performance**

Task

To Start Motivation Desire To Continue

Persistence

Commitment

At the End

Satisfaction/enjoyment

Intrinsic reward



Emotions play a role at every stage in task performance, and the feelings we have about learning.





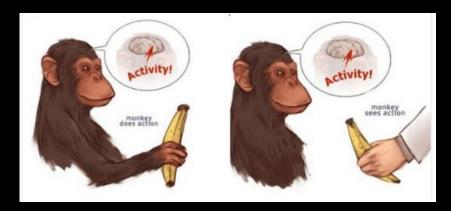
- What does empathy mean?
- Empathy (L.) "feeling from inside" seeing how it feels looking from the inside of someone else's eyes (inside their "mind.")
- It involves experiencing the feelings of another person while maintaining one's *own identity*.
  - Empathy is the identification with and the understanding of another person's emotions/feelings in a given situation.



### The Mirror Neuron System (MNS)

- Mirror neurons are the neurological source of *empathy* (relationship learning).
- When we see a facial gesture, our brains automatically mirror the face and send a message to the limbic system. Once this emotional reaction has kicked in, we understand the other because we have become the other emotionally ("sharing neural circuits" - stories, sports, plays, movies, etc.)







#### **Positive psychology ("positive mindset"):**

A frame of mind where an individual narrow down (decreases) the number of possible outcomes (by mentally eliminating the myriad negative possibilities) and increases his/her expectation of one of the remaining positive outcomes.





- Jan. 2018: Harvard professor Laurie Santos developed a course titled "Psychology 157: Psychology and the Good Life" → the enrollment graph → 100, then 200, then 500 students → the classroom was entirely too small, and the Dean refused to cap the class enrollment roster.
- Eventually = 1,200 students → concert hall → ¼ of all Yale students take the course → now become the most popular course in Yale University's 317-year history.





A.K.A. - the "Happiness" class which emphasizes the most *important* aspects in life. Research has shown happy people do the following ("habits of mind"):

- 1. ...have strong social ties (spending face-to-face time with "real" friends)
- 2. ...take time out to nurture their social connections with others (make new ties -- skipping the self-checkout line, but instead, having a face-to-face conversation/ engagement with another human being)

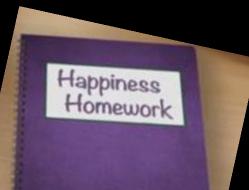
3. ...are mindful of the moment (finding/making "joyful moments" - staying in the present, not the future, long enough to fully "experience the moment" and enjoy it to the fullest). Is my happiness based in others' opinion of my or mine?



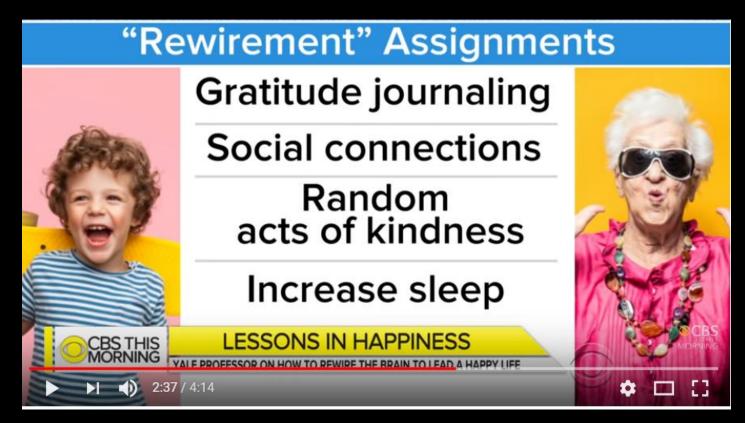
4. ...make a special effort to experience and express gratitude (5 entries every night into a into a "Gratitude Journal")

- 5. ...engage in random acts of kindness (going out of one's way to help others because it feels good, not because there may be some reward)
- 6. ...get plenty of sleep (college students: 3 7 hours)
- 7. ...exercise (↑ time playing Frisbee ↓ time cramming; taking walks with friends; "Do you know John?" "Yes, we walk together.")
- 8. ...meditate for 10 minutes.

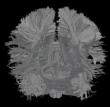
Research: the simpler things in life  $\rightarrow$  greatest sense of personal fulfilment







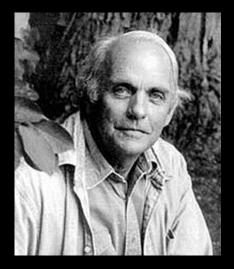
These 8 practices (priorities) became known as the course "Rewire-ments" (not "requirements")





**The Emotional Brain** 

## They may forget what you said, but they will never forget how you made them feel. -- Carl W. Buechner





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