An Advance Organizer (an instructional strategy) for this wee 'chat'

Shadow Assessment: Darkness Made Visible

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One problem with this picture

We must focus on every school in the system …and this is why school self evaluation is so important.

THAT SAID…what you select in terms of making a difference is the key…not simply engaging in evaluation.

Working at the system level is the focus of the Instructional Leadership Project, now in its 16th year.

Why this title?

I am skeptical about trusting our assessment of student learning in terms of inferences we can make about their capacity to learn.

(Predictive Validity)

I Keep in mind I could be wrong

Why the skepticism?

We are focusing more intensely on student self-assessment and self-regulation…and

we are focusing more expansively on school self-regulation and school-self assessment (the focus in tomorrow's session);

however, we are failing to focus on teacher self regulation, teacher self assessment regarding instruction

Shadow Assessment:

Making decisions about students when we fail to assess ourselves … *instructionally*

Teacher A

- **Teacher A does not structure groups effectively. She is also unaware that she does not frame question effectively, nor does she check for understanding effectively. Note that other teachers in her school are very similar. She is a non-user of most instructional innovations that impact student learning. Principal spends most of his/her time managing the school.**

Teacher C

- **Teacher C does structure groups, frame questions, and check for understanding effectively. He also uses a variety of group structures for variety. He also has students do concept maps and mind maps to summarize their learning. He is a routine to refined user of most instructional innovations. Principal has them in teams working at developing better lessons.**

Teacher J

Michelle is kind, thoughtful grade-8 teacher who effectively frames question paying attention to how much wait time students get based on the complexity of the question. (Students aghre routine to refined, shifting to integrative users with almost everything.) She understands and applies Bloom's taxonomy. She is a Tribes trainer in his district. In addition he shows teachers how to integrate Kagan 's small group structures into Tribes. He employs Venn Diagrams, Fish Bone Diagrams, Mind Maps, Concept Maps, Ranking Ladders and Timelines to have students organize their thinking; she also use those graphic organizers on exams and for alternative ways to assess student learning. She constantly reflects on how her teaching affects her students and is currently looking at how brain research can guide her teaching. Staff at Michelle's school are also moving in the same direction; principal is very supportive of all teachers efforts – including going to workshops with them.

So …

- Is it possible for a student to be unsuccessful in teacher A's class and be successful in teacher J's class?

I'm going to play with one component of *Instructional Intelligence…*

Teacher self assessment

…a focus on instruction

* Meaning of Instructional Intelligence

Being able to skillfully intersect the existing wisdom in these 6 areas

1. CURRICULUM WISDOM
2. ASSESSMENT WISDOM
3. INSTRUCTIONAL WISDOM
4. WISDOM RE HOW KIDS LEARN
5. WISDOM REGARDING EDUCATIONAL CHANGE
6. WISDOME REGARDING SYSTEMIC CHANGE

What if one of these 6 areas is missing?

1. CURRICULUM WISDOM
2. ASSESSMENT WISDOM
3. ~~INSTRUCTIONAL WISDOM~~
4. WISDOM RE HOW KIDS LEARN
5. WISDOM REGARDING EDUCATIONAL CHANGE
6. WISDOM REGARDING SYSTEMIC CHANGE

At what point is a chair no longer a chair?

- Back
- ~~Legs, enough for support~~
- Seat for one person

Two vignettes (A & B)

A – grade 7

- Students write a test on cell division (mitosis and meiosis)
- Most students fail
- Teacher takes students to the gym and has them role play both processes using skipping ropes…they discuss the processes
- They all get it

B – grade 12 (leavers)

- Students are struggling to understand how normal DNA shifts to become diabetic DNA
- Teacher has the students role play the shift
- They all get it

1. Positioning Cooperative Learning

In the chart below, where does Cooperative Learning 'FIT'?

Instructional Concepts (cannot enact)	Instructional Skills	Instructional tactics	Instructional strategies	Instructional organizers (cannot enact)
	least complex to most complex →			
Safety	Framing Questions	Think Pair Share	Concept Attainment	Multiple Intelligence
Accountability	Applying wait time to questions	Place Mat	Concept Maps	Research on Cooperative Learning
Interest	Sharing the objective and purpose of the lesson	Venn Diagrams	Academic Controversy	Research on Autism
Authentic	Probing for clarification Suspending judgment	Fishbone Diagram	Jigsaw	Research of Graphic Organizers
Novelty		2 or 3 Person Interview	Johnsons 5 Basic Element	Research on at risk students
Meaningful		6 Thinking Hats	Mind Maps	Brain research
Success		Round Table Share	Role Play & Simulations	

Levels of Use Rubric – Framing Questions

	Mechanical	Routine	Refined/Integrative
Balancing Individual Accountability and safety	Most students do not feel that accountable or safe	Most students feel accountable and safe	All students feel accountable and safe
Active Participation	A few students actively participating	Most students actively participating	All students actively participation
Controls Bloom's Taxonomy	Teacher has minimal control of Bloom's taxonomy	Teacher reasonably skilled; students learning about Bloom's Taxonomy	Teacher and students skilled at applying Bloom's Taxonomy
Distributes question	Rarely	Usually	Always
Applies wait time effectively re student skills and complexity of the question	Working at it	Usually	Always

4.1 Instructional Repertoire
Levels of Use of an Innovation

- ***Non User***
- ***Orientation***
- ***Preparation***
- ***Mechanical***

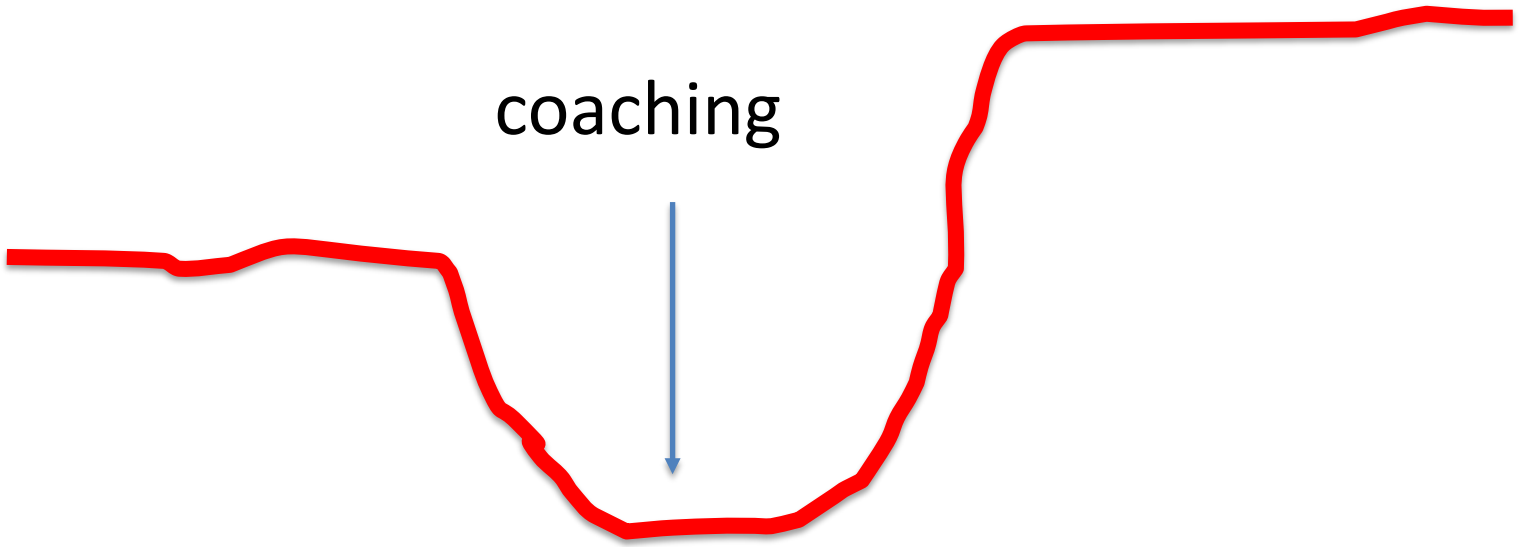
No Impact on student learning

- **Routine**
- **Refined**
- **Integrative**

Impact on student learning

Mechanical Level of Use = Implementation Dip

- Things will get worse before they get better



- The only way to avoid the dip is to go to the workshop … but don't try to implement it.

Work of Joyce and Showers

Bennett, 1987

Skill Training Model

Workshop Components	Understanding	Skill Acquisition	Transfer
Theory (T)	minimal	3%	0%
(T) and Demonstration (D)	increases a bit	5-10%	3%
(T, D) and Practice and Feedback (PF)	solid introductory understanding	90%	10%
T, D, PF, and Peer Coaching	Deeper more integrative understanding	> 90%	> 90%

What is the connection between Levels of Use and Student Achievement?

Higher the level of use by both teachers and students, the higher the student achievement.

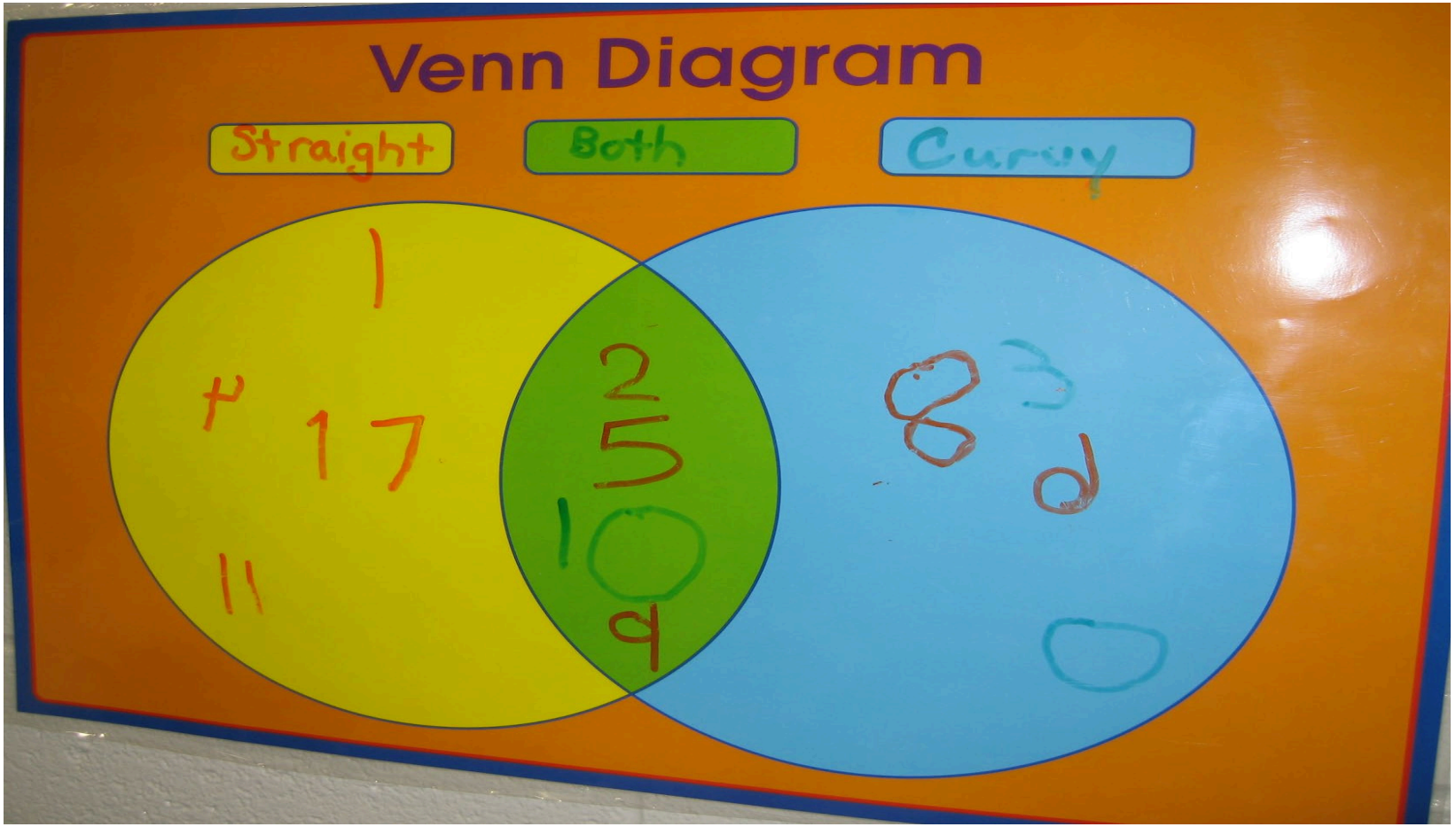
Summative Evaluation
(aka assessment of learning)

What about this one?

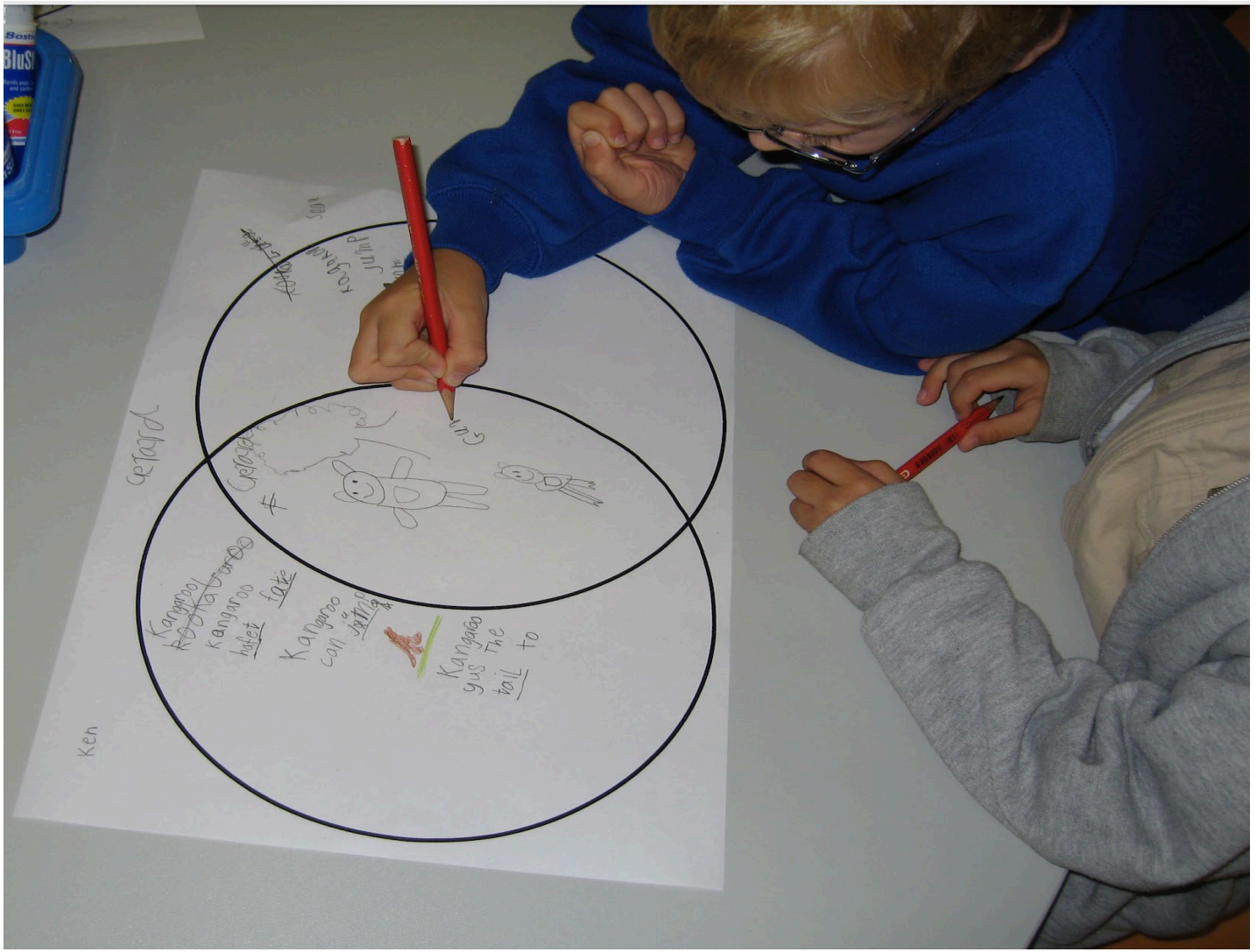
Note: the word ‘POOR’ is feedback, not evaluation, or assessment, or knowledge of results

- Most of these pictures are elementary.
- Why?
- Because students come to secondary school having experienced ‘feedback’… and they bring those experiences (positive and negative) with them into your classrooms…and your homes

Here grade 1 students fill in a Venn diagram to assess their grasp of how numbers are designed (assessment for learning)

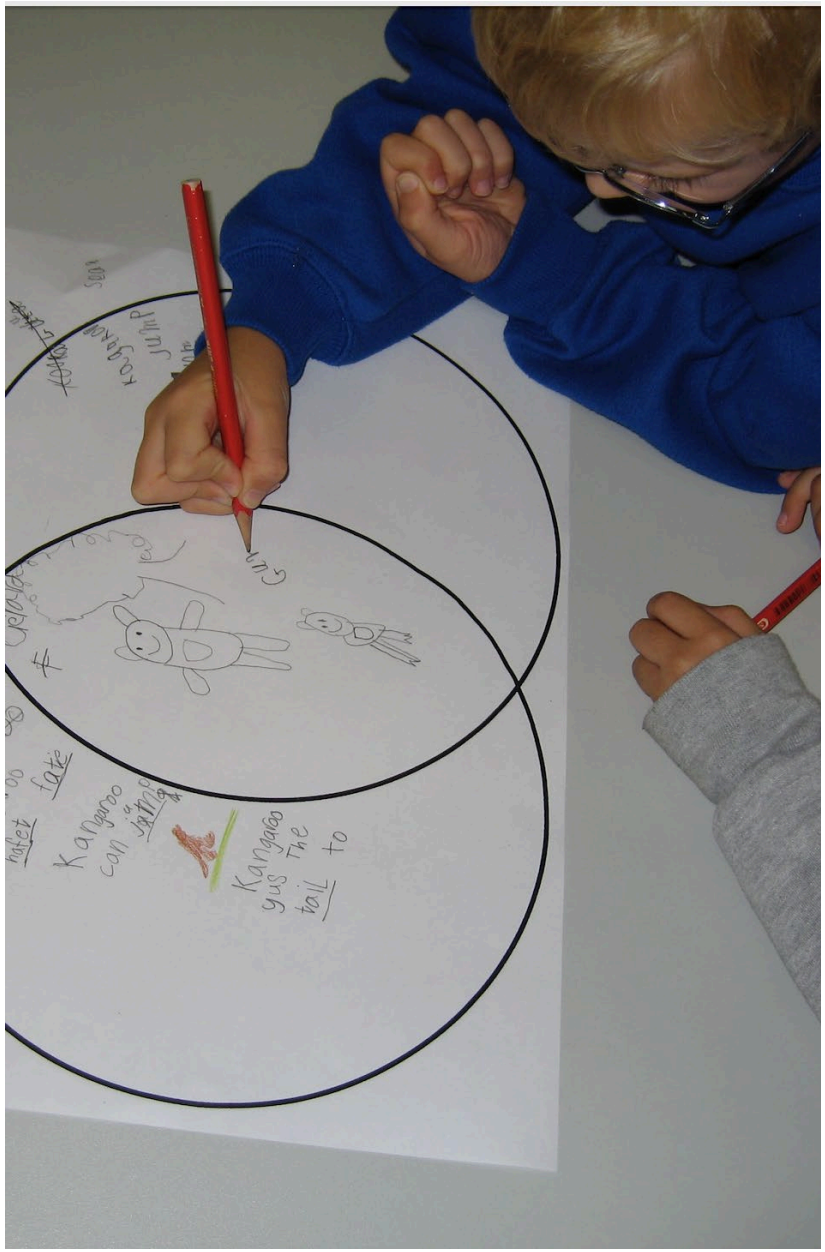


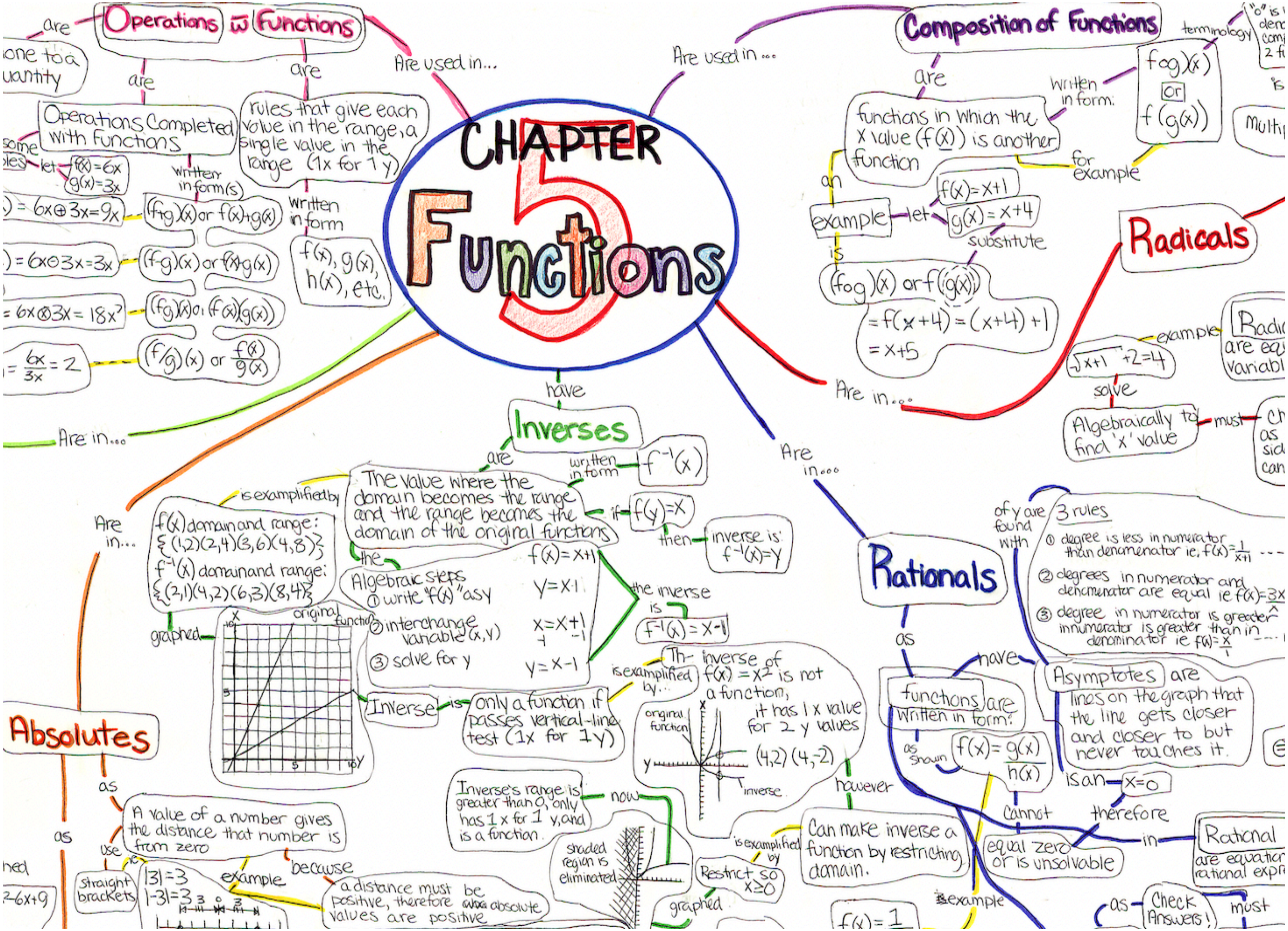
Here, a grade one student co-constructs a Venn diagram (teaches) a kindergarten student



This teacher is operating at a more complex level of use of Venn diagrams (assessment ‘as’ learning)

Here, a grade one student is teaching a kindergarten student how to use a Venn diagram by comparing and contrasting two animals




CHAPTER 5 Functions
Operations ω Functions
are
Are used in...
one to a
quantity
Operations Completed with Functions
rules that give each value in the range, a single value in the range (1x for 1 y)
some
let
f(x)=6x
g(x)=3x
written in form(s)
written in form
f(x), g(x), h(x), etc.
= 6x ⊕ 3x = 9x
(f+g)(x) or f(x)+g(x)
= 6x ⊖ 3x = 3x
(f-g)(x) or f(x)-g(x)
= 6x ⊗ 3x = 18x²
(fg)(x) or f(x)g(x)
= 6x/3x = 2
(f/g)(x) or f(x)/g(x)
Are in...
Are used in...
Composition of Functions
terminology
are
functions in which the x value (f(x)) is another function
written in form:
(f∘g)(x)
or
f(g(x))
for example
an
example
let
f(x)=x+1
g(x)=x+4
substitute
is
(f∘g)(x) or f(g(x))
= f(x+4) = (x+4)+1
= x+5
Multi
Radicals
example
√(x+1) + 2 = 4
solve
Algebraically to find 'x' value
must
Are in...
have
Inverses
are
written in form
f⁻¹(x)
The value where the domain becomes the range and the range becomes the domain of the original functions
if
f(y)=x
then
inverse is: f⁻¹(x)=y
is exemplified by
f(x) domain and range: {(1,2)(2,4)(3,6)(4,8)}
f⁻¹(x) domain and range: {(2,1)(4,2)(6,3)(8,4)}
the
Algebraic steps
① write "f(x)" as y
② interchange variable (x,y)
③ solve for y
f(x)=x+1
y=x+1
x=y+1
y=x-1
the inverse is
f⁻¹(x)=x-1
graphed
original function
Inverse
is
only a function if passes vertical-line test (1x for 1y)
is exemplified by...
The inverse of f(x)=x² is not a function, it has 1 x value for 2 y values
original function
(4,2) (4,-2)
inverse
however
Can make inverse a function by restricting domain.
is exemplified by
Restrict so x≥0
graphed
Inverse's range is greater than 0, only has 1 x for 1 y, and is a function.
now
shaded region is eliminated
Are in...
Absolutes
as
A value of a number gives the distance that number is from zero
use
straight brackets
|3|=3
|-3|=3
example
because
a distance must be positive, therefore absolute values are positive
as
Are in...
Rationals
of y are found with
3 rules
① degree is less in numerator than denominator ie, f(x)=1/(x+1)
② degrees in numerator and denominator are equal ie f(x)=3x
③ degree in numerator is greater in numerator is greater than in denominator ie f(x)=x/1
as
functions are written in form:
as shown
f(x)=g(x)/h(x)
have
Asymptotes are lines on the graph that the line gets closer and closer to but never touches it.
is an
x=0
cannot
therefore
equal zero or is unsolvable
in
Rational are equation rational expr
example
f(x)=1
as
Check Answers!
must

:x+1
-1

x-1

is

$f^{-1}(x) = x-1$

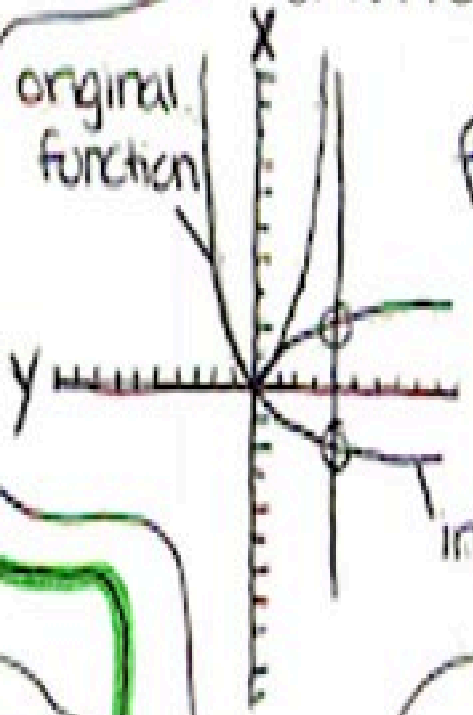
as

ction if
tical-line
or 1 y)

is examplified by...

The inverse of $f(x) = x^2$ is not a function,

it has 1 x value for 2 y values



functions

Written in for

as shown

f(x)

e is
only
y, and

now

however

Can make inverse a

Researchers argue…2 key points

1. **The teacher's instructional repertoire is a key predictor of student achievement.**

But more important is the skill level at which teachers and students operate with the methods within that repertoire.

2. The extent to which the principal supports the teachers in their efforts to extend and refine their instructional repertoire and in addition, their level of expertise.

3. The instructional argument
Drivers of Change – Fullan 2011

- A ‘wrong driver’ is a deliberate policy force
- that has little chance of achieving the desired result,
- while a ‘right driver’ is one that ends up achieving better measurable results for students.

(Fullan) The culprits are …

1. **accountability:** using test results, and teacher appraisal, to reward or punish teachers and schools vs capacity building;
2. **individual teacher and leadership quality:** promoting individual vs group solutions;
3. **technology:** investing in and assuming that the wonders of the digital world will carry the day vs instruction;
4. **fragmented strategies:** promoting disconnected unsupported one class or one school innovation vs integrated resourced systemic strategies.

(Fullan) - Four ‘Right’ Drivers

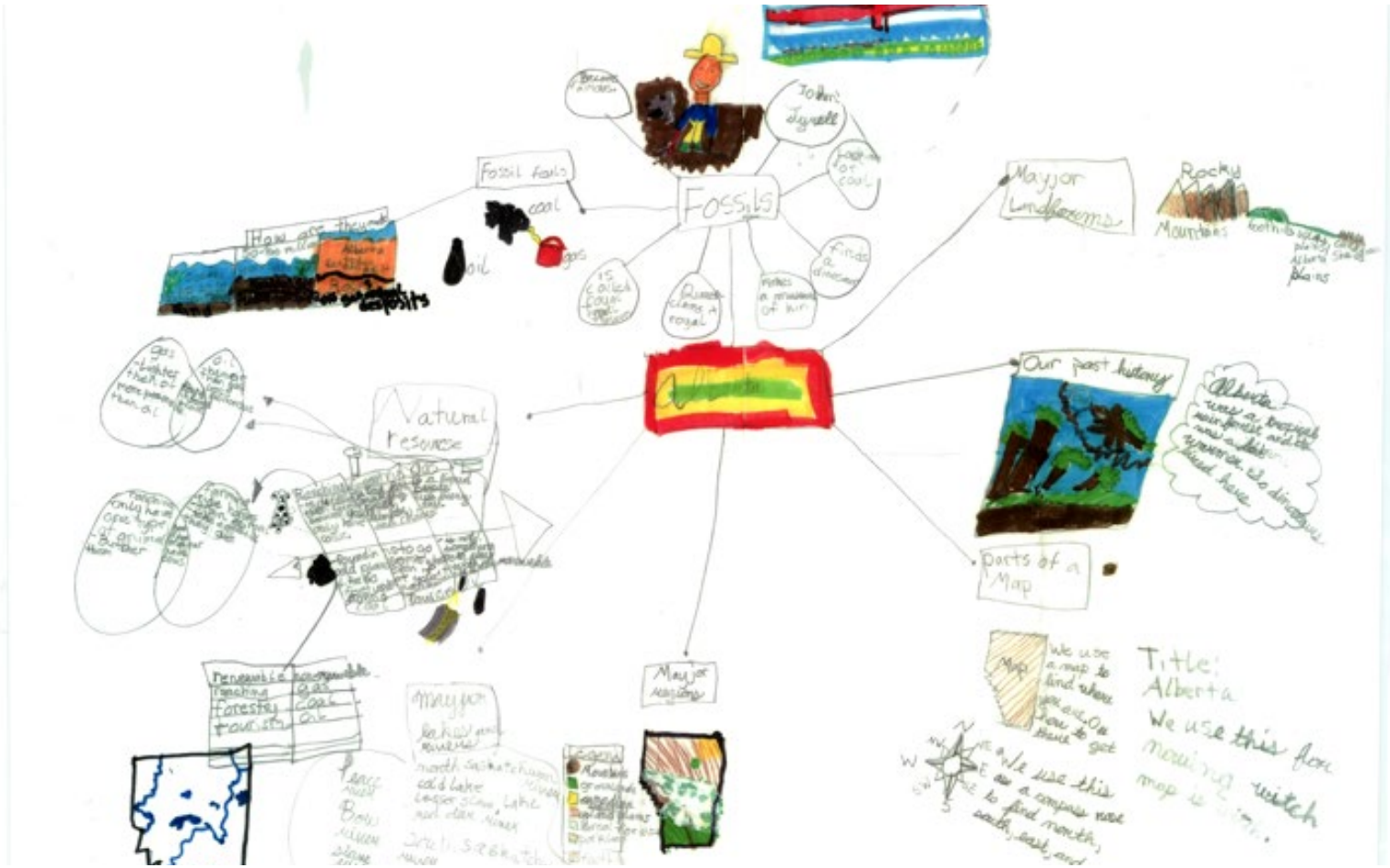
1. **foster intrinsic motivation of teachers and students**
2. **engage educators and students in continuous improvement of instruction and learning**
3. **inspire collective or team work**
4. **affect all teachers and students – 100 per cent?**

This is a key focus in the ETBI’s Instructional Leadership program

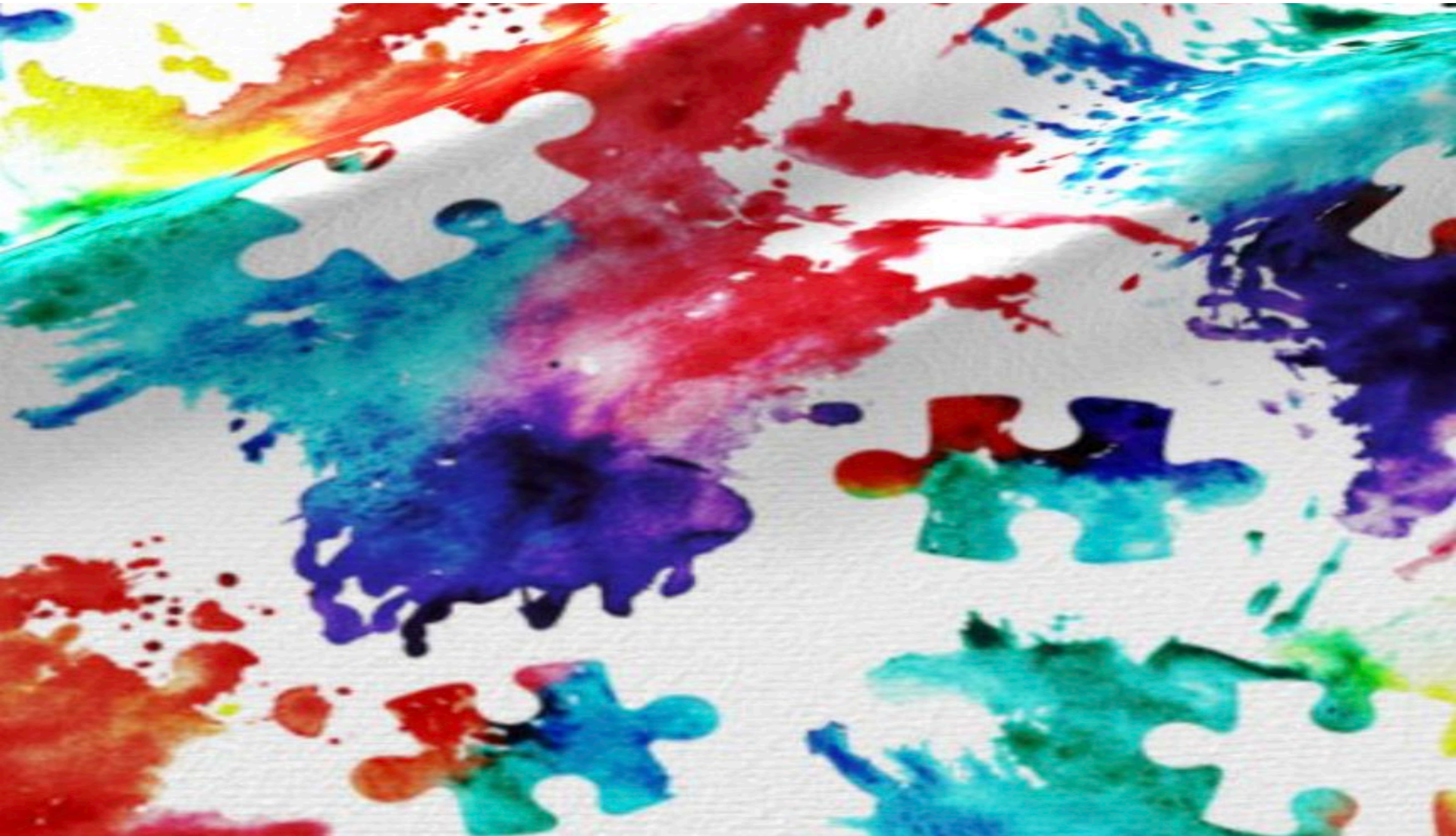
No one ‘best’ method or way exists to engage students in learning.

The quest is to intersect multiple methods

6.5 Integrate – grade 4 Mind Map, Word Web, Fishbone diagram, Venn diagram, cross-sectional diagrams, concept attainment data set

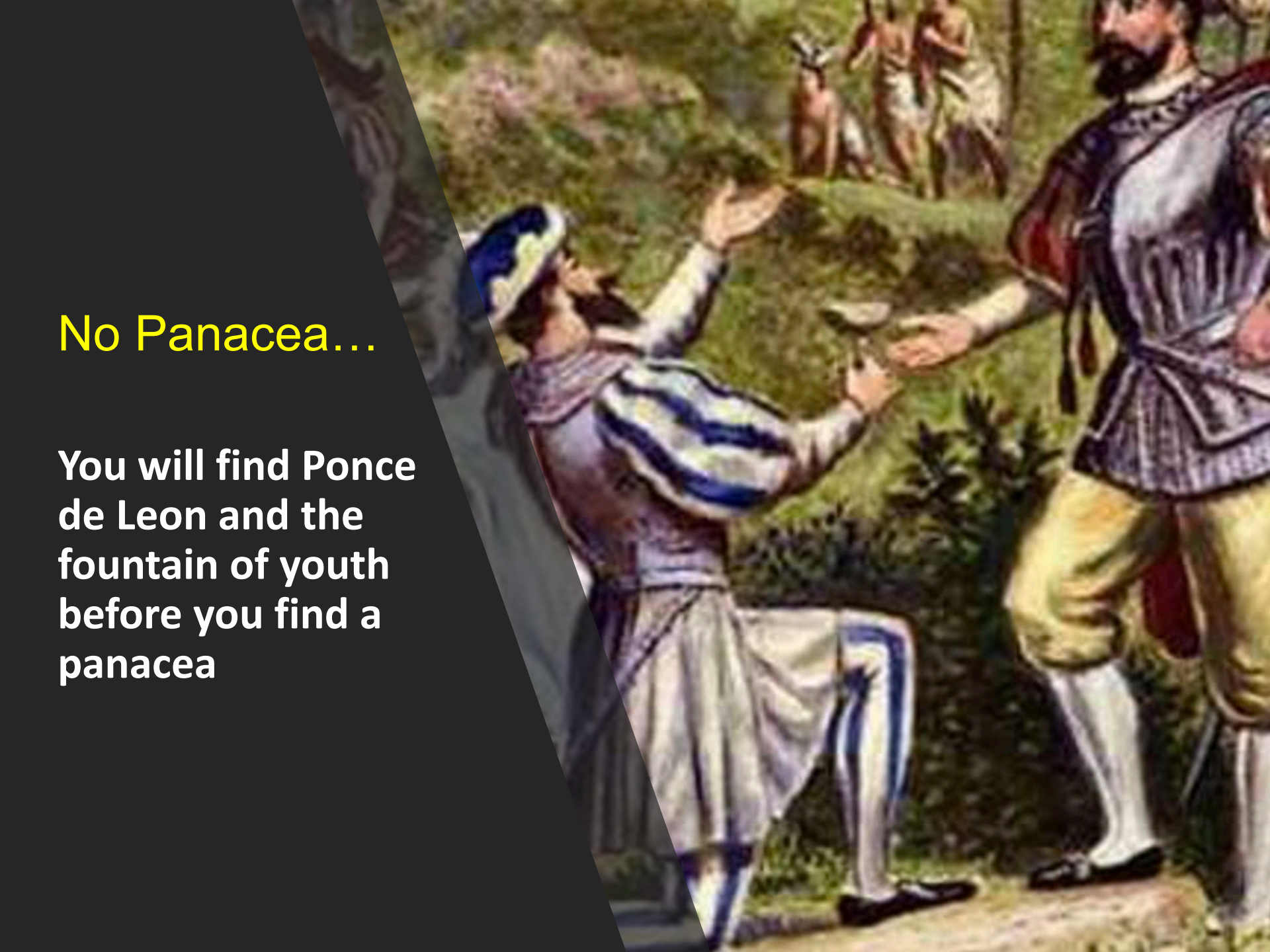


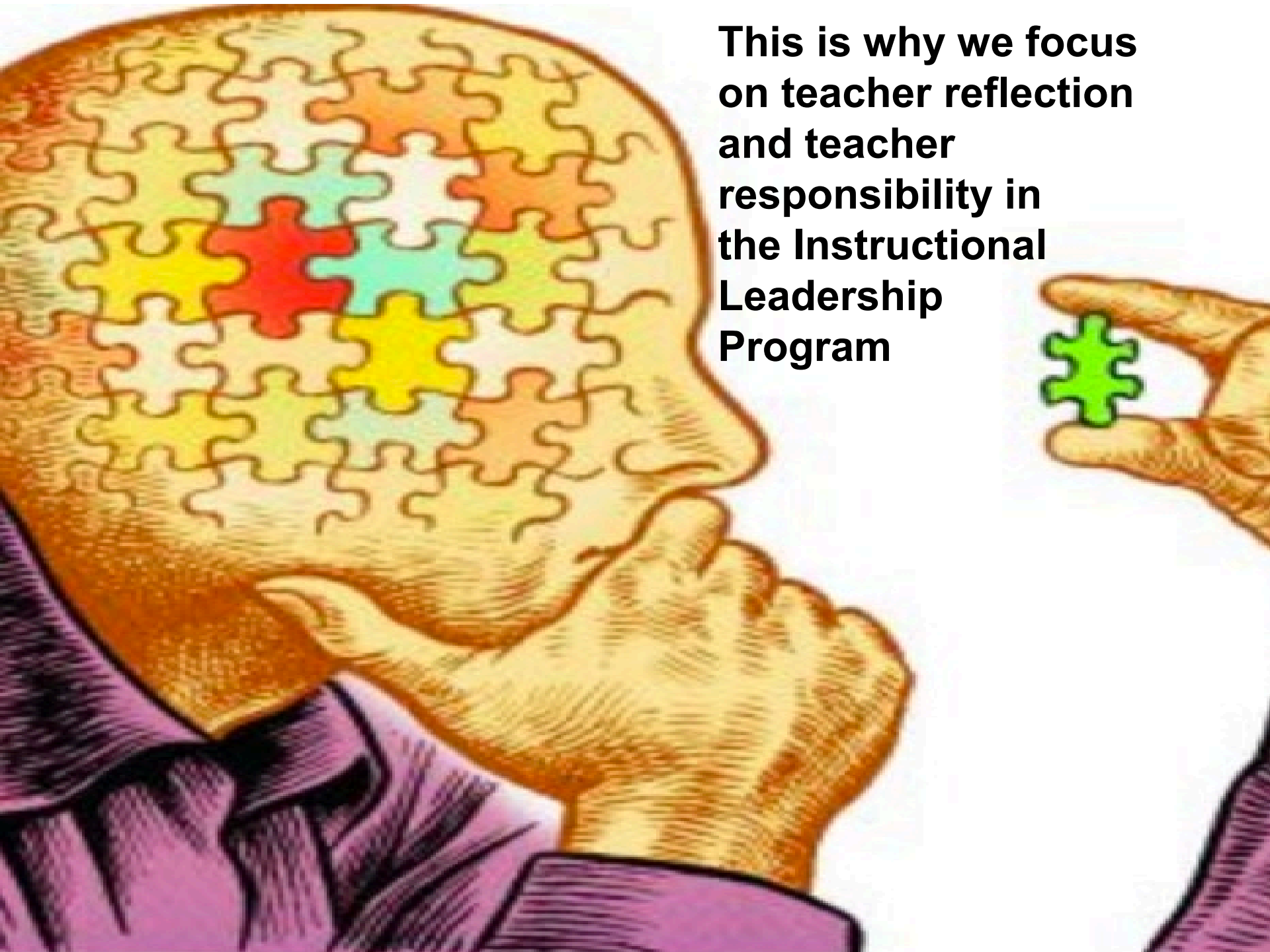
…so designing powerful learning environments is more artful than the science of ‘pieces’



No Panacea…

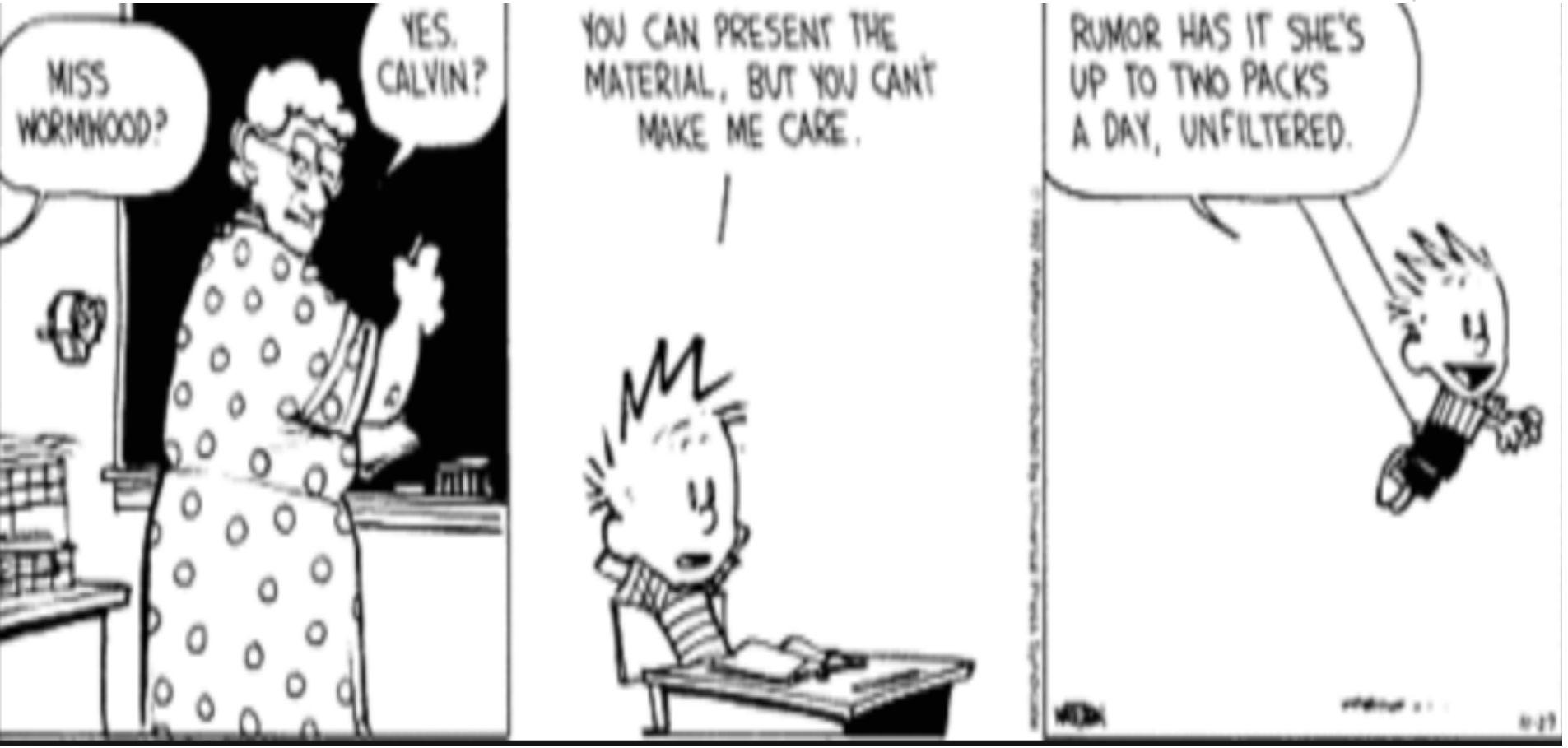
You will find Ponce de Leon and the fountain of youth before you find a panacea





This is why we focus on teacher reflection and teacher responsibility in the Instructional Leadership Program


Gets complex


MISS WORMWOOD?
YES. CALVIN?
YOU CAN PRESENT THE MATERIAL, BUT YOU CAN'T MAKE ME CARE.
RUMOR HAS IT SHE'S UP TO TWO PACKS A DAY, UNFILTERED.