Overview

3 factors that affect student achievement:

1) Classroom environment
2) **Assessment**
3) Pedagogy – The art of Teaching

Assessment principle #1

Instructions must be clear and well stated.

1. Name the following animals:

a. 

___ ___ ___



a. 

___ ___ ___



a. 

BOB



Looking …



… for evidence

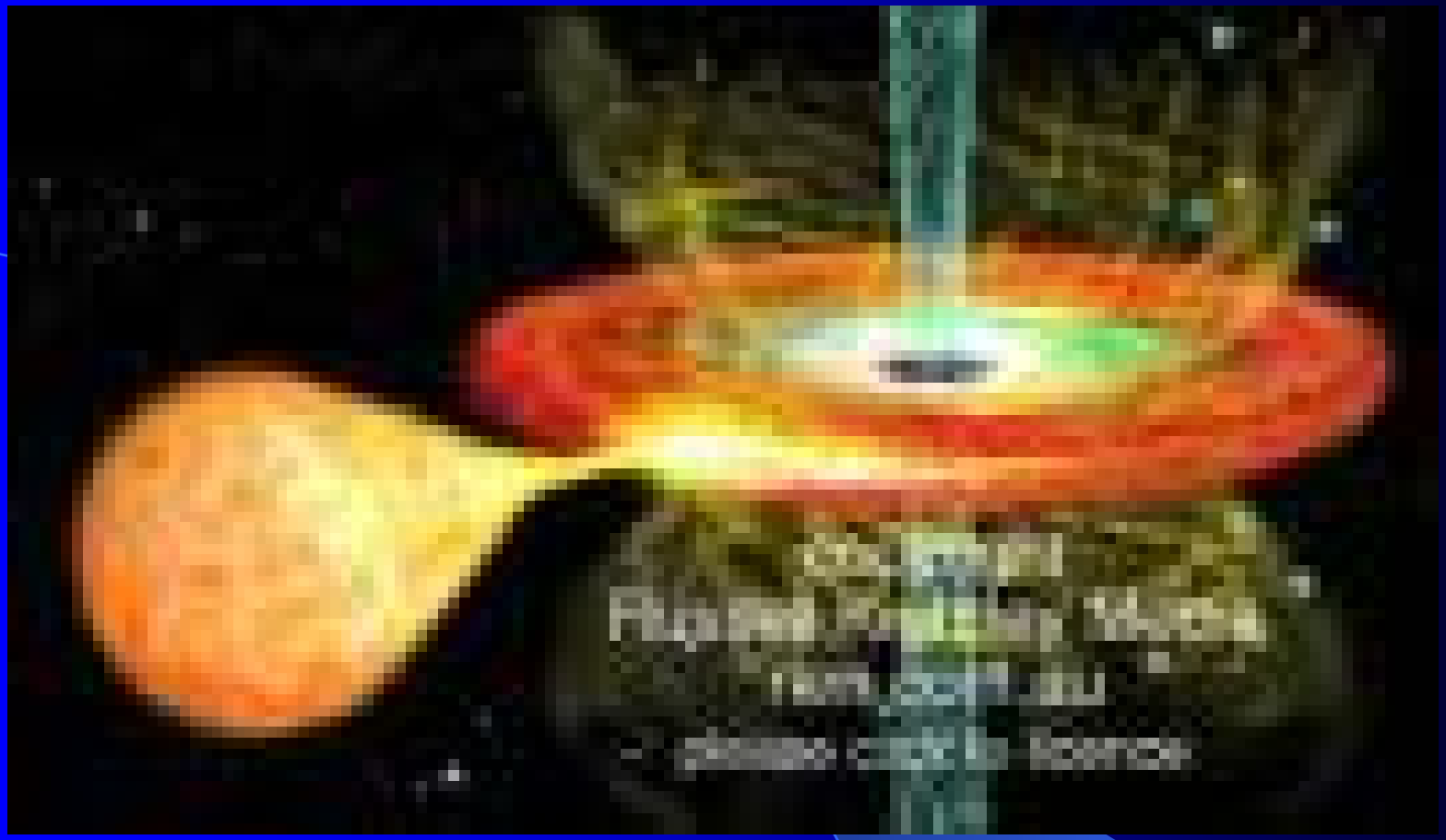
… for data

There are profound questions about current educational practices that need to be reflected upon deeply….

… questions about assessment and evaluation being near or at the top of the list.

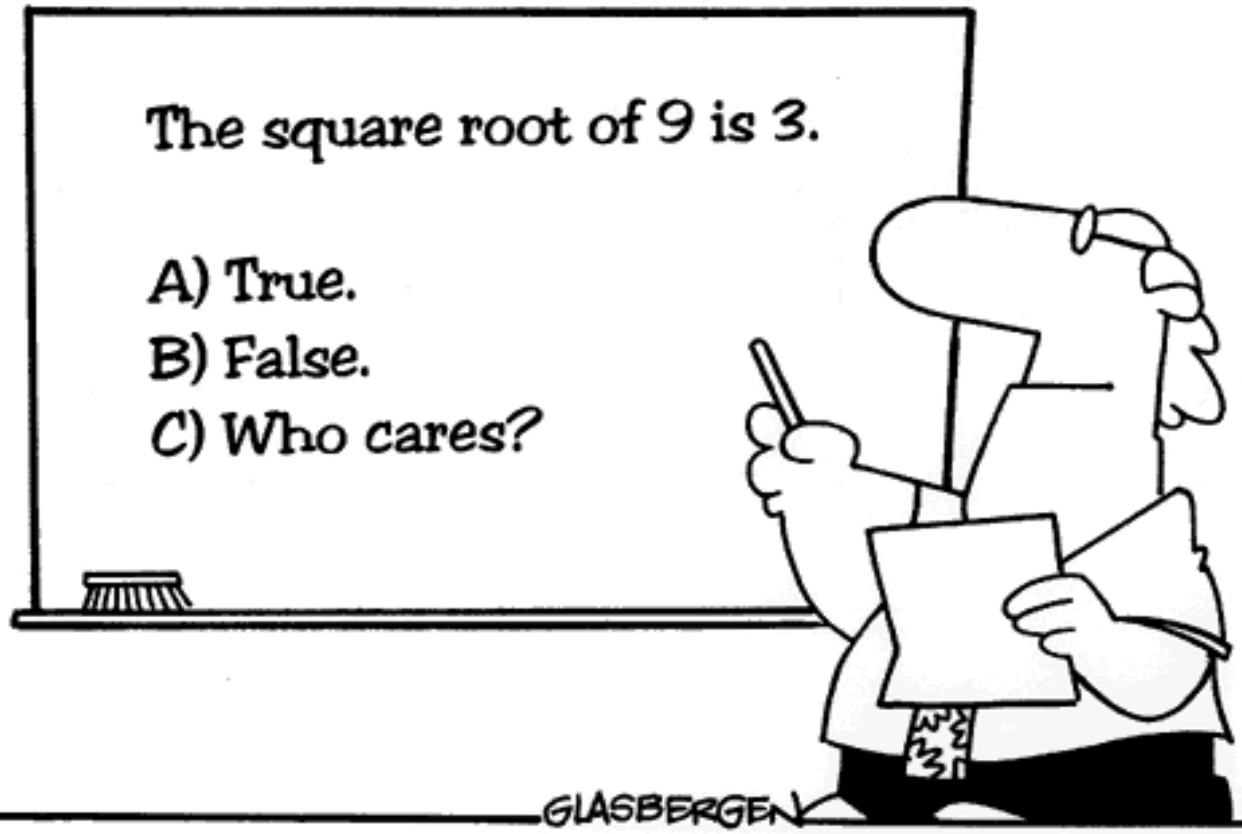
The answers to some of the questions lead to conclusions that may require, for some, a change in attitude. For example …

- Teachers don't need grades or reporting forms to teach well. Further, students don't need them to learn.
- Assessment and evaluation should be positive learning experiences, not occasions to demonstrate power and control.



Assessment, for many math teachers across Ontario, remains a Black Hole - misunderstood, and swallowing up often fruitless expenditures of energy and time.

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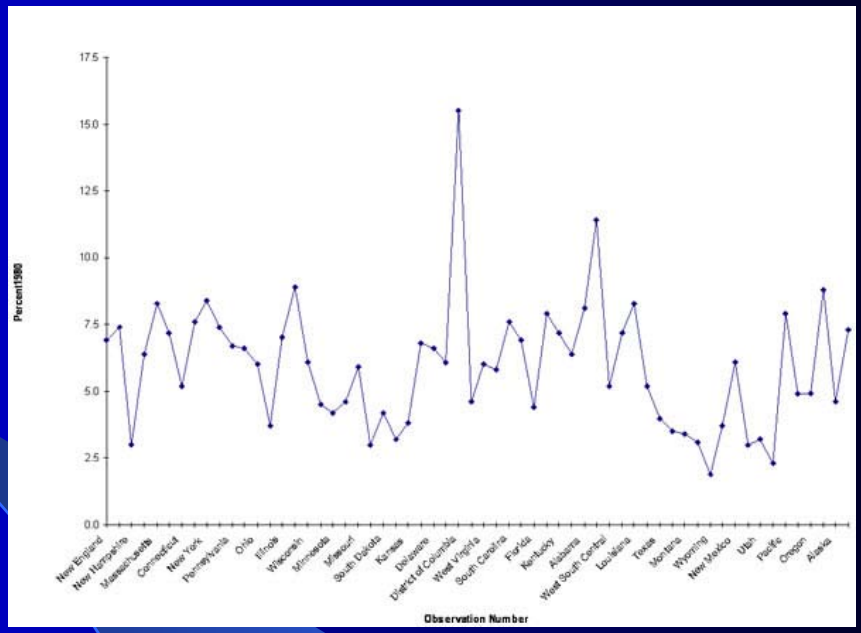


Many students actually look forward to Mr. Atwadder's math tests.


The dream . . .
The ‘prime directive’ fullfilled:“The primary purpose of assessment is to improve student learning.”

Assessment data is …more than this





There are 10 kinds of people … those who understand binary and those who don't.

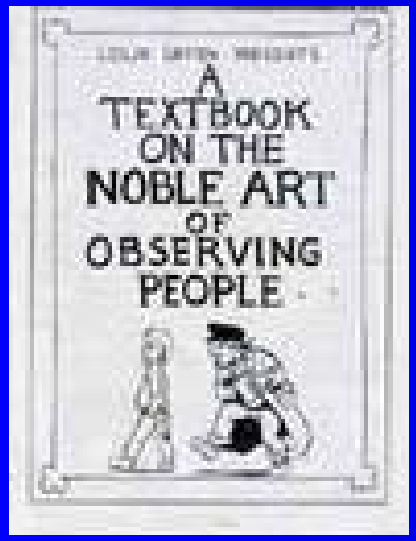
Sylvia McStudent

Tests - 68%; Quizzes - 77%; Portfolio - 80%; Average – 70%

Assessment data also comes from…







The teacher's most important assessment strategy: **Observation and analysis** .



Questioning

Grading Eggs



- "The purpose of assessment is to improve learning." – Report of the Expert Panel on Early Math in Ontario

  (i.e., asking that data be gathered around factors that can lead to an improvement in the quality of the egg.)

"Although [gathering data is] useful for a range of reasons, [its] fundamental purpose – and the purpose against which all other purposes should be weighed – is to support students' learning and understanding of mathematics."

- Report of the Expert Panel on Mathematics in grades 4 to 6 in Ontario

CLASSROOM ENVIRONMENT

Though this may seem more to do with instruction/learning than with demonstration of learning, students should, for example, feel confident that they could demonstrate their learning without fear of repercussions from their peers.

Lack of a ‘safe place’ will quickly turn your classroom into an learning forum only for those who are confident learners; the hesitant and the anxious will, emotionally, leave your classroom.

“What have I got on my hands?”

At the beginning of a course, while assessment “of previous learning” (i.e., diagnostic) is useful, I’m equally, if not more, interested in assessment of the learner.

Why?

…because **what** and **how** a student has learned up to this moment does not indicate **what** and **how** the student can learn from this moment on.

Three tools for this assessment are:

- observations made by teachers
  ("teachers have front-row seats as observers" - Levine)
- examination of typical samples of a student's work
- asking the student (e.g., conversation, journal entries)

‘What can I do to promote success?’

From OAME’s publications, “**Linking Assessment to Instruction**” :

“In order to be effective, assessment practices need to …

•be ongoing and an integral part of the learning-teaching process, giving students regular opportunities to demonstrate their learning;
•encourage students to reflect on their own growth and learning;
•enable teachers to describe student growth in the cognitive, physical, social, and emotional domains”

Fine … but how does one go about doing that?

In the long run, FORMATIVE assessment is more important than SUMMATIVE assessment.

It has been the case, and many instances still is, that assessment was done FOR the record, and the results were PASSED ON to the student. It should be that most assessment is done FOR the student, and the results PASSED ON for the record.

“The best and perhaps most valid assessment happens while teaching and learning are taking place. As students interact in the classroom (with their teacher and with other students), as situations are explored and mathematized, teachers can observe the landmarks being passed. If teachers understand the landscape well, they become better able to observe, confer, and question in relation to important mathematical ideas, strategies, and models – to maximize mathematical teaching moments.” – Fosnot, Dolk, “Young Mathematicians at Work”; Heinemann, 2002

After analyzing almost 8000 studies, researcher John Hattie (1992) commented, "*The most powerful single modification that enhances achievement is feedback. The simplest prescription for improving education must be 'dollops of feedback'*"

(reported in Marzano et al., pg 96)

BUT!!! There is good feedback and there is bad feedback …

- "telling students that their answer on a test is right or wrong has a negative effect on achievement;
- providing students with the correct answer has a moderately positive effect;
- the best feedback appears to involve an explanation as to what is accurate and what is inaccurate in terms of student responses."

Common Teacher Phrases



- "Work Harder"
- "Go Deeper"
- "You're coming along"

- *What do they mean?!*

Accommodations

… are changes made to the assessment procedures in order to "level the playing field" for all students; to provide each student with access to comprehensible information and an equal opportunity to demonstrate knowledge, skills, procedures, and understanding in a content area without affecting the reliability or validity of the assessment.

Paying attention to 'learning styles' is NOT an accommodation – it is simply good teaching!

The medium is NOT the message!

e.g., At the Wisconsin Centre for Education Research studies have shown that most students who solved contextualized math problems using videos as part of the instruction became better at noticing crucial features of those problems than were students who learned with standard word problems.

After viewing the video, students describe the mathematics problems involved, then work in small groups. The teacher then assesses the students' learning either with the computer-based assessment or the paper-and-pencil based assessment.

It was predicted, and found, that the computer-based assessment eliminated some of the cognitive demands of problems for the low-achieving students and thus enabled them to more fully demonstrate their understanding of the math concepts they had learned.

Accommodations are NOT a "dumbing down"

An accommodation must make an appropriate match between

- the student needs,
- the content being measured,
- and the accommodation most appropriate for the testing situation

in such a way that it does not

- interfere with the integrity of what is being measured/assessed on the assessment
- change the instructional level, content, or the performance criteria

in order for accurate inferences to be made regarding the results of the assessment.

"Teachers mistakenly think that slower students cannot work in the higher levels [of thinking], although studies by Bloom (1976) show that the opposite is true.

When these students are given only the critical attributes of the learning, without extraneous information to sort, they are able to perform at a more complex level."

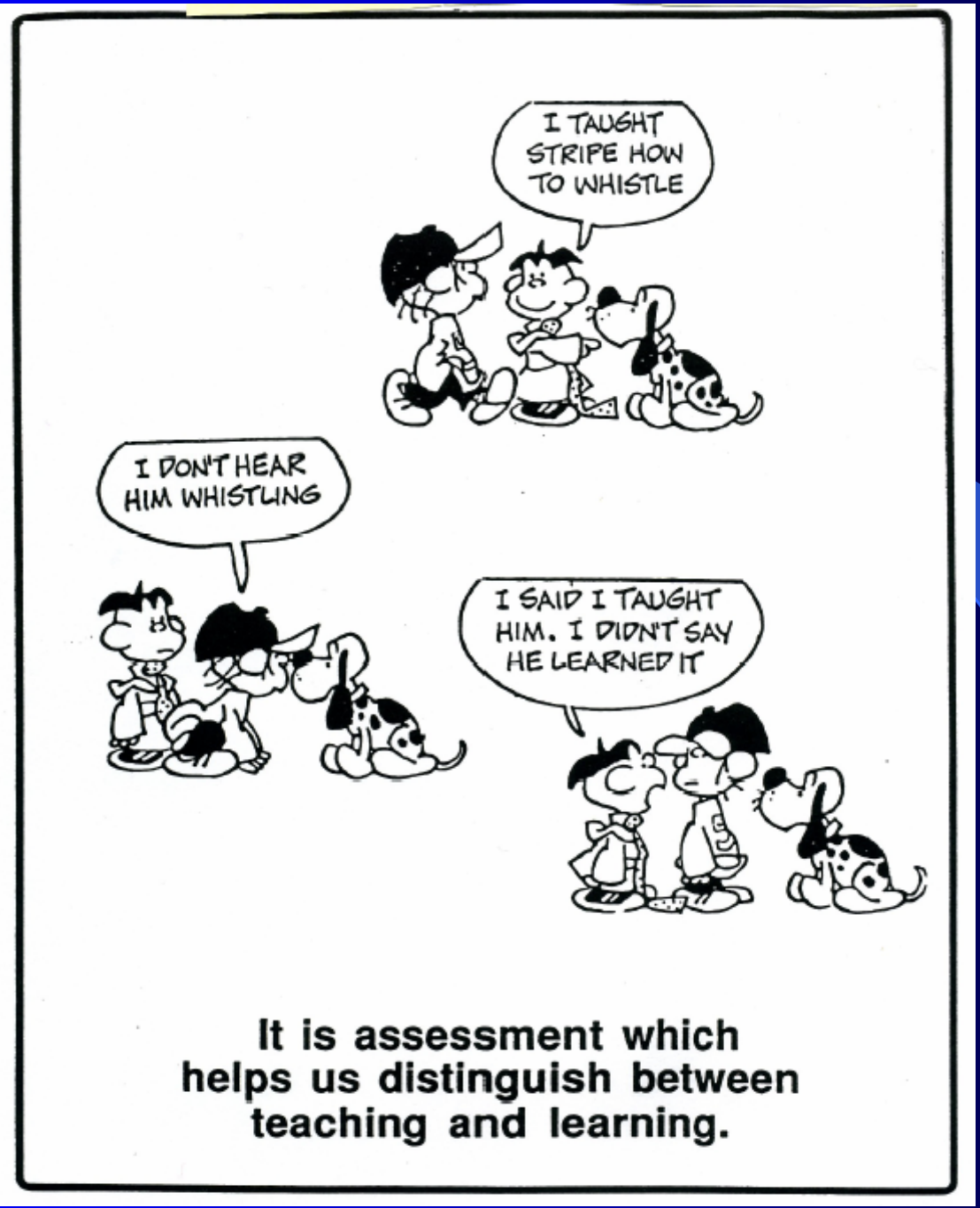
Donna Walker Tileston, "Ten Best Teaching Practices"

TIPS and TIPS4RM

… have built in formative assessment of:

- curriculum expectations
- mathematical procedures
- learning skills




I TAUGHT STRIPE HOW TO WHISTLE
I DON'T HEAR HIM WHISTLING
I SAID I TAUGHT HIM. I DIDN'T SAY HE LEARNED IT
It is assessment which helps us distinguish between teaching and learning.

Be warned …

… there are those still in the system who might try to hinder or discourage you from developing effective, research-based assessment practices.

You can sometimes recognize them.



“I warn you! These new ideas are dangerous!



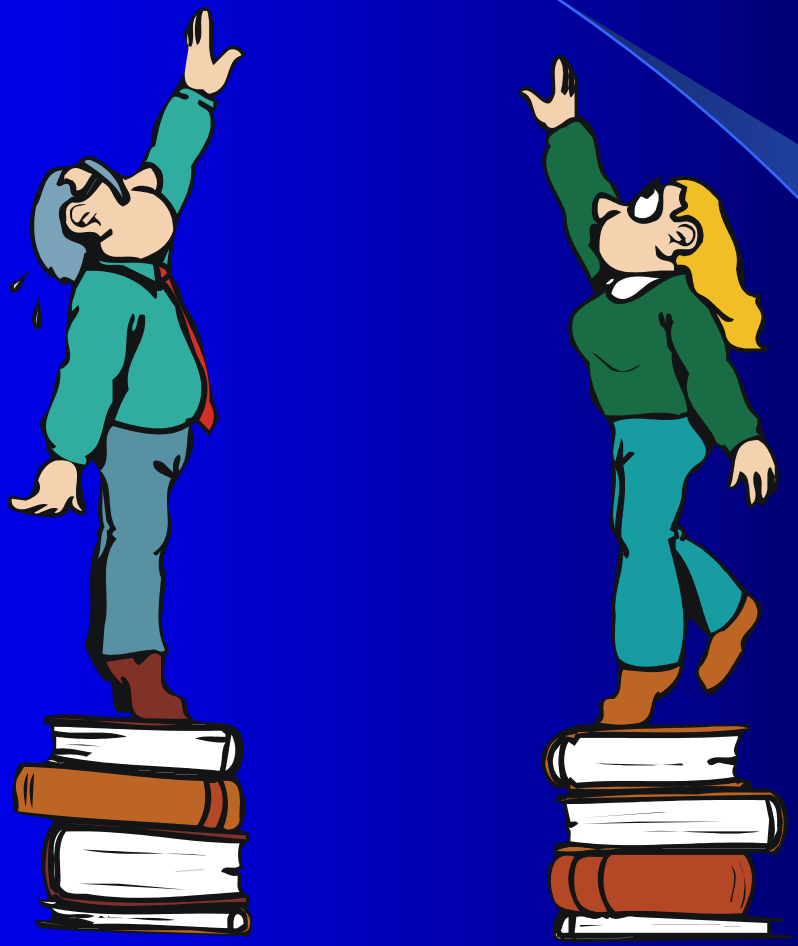
But, let’s bravely strike out …



The munchkins (i.e. students) will thanks us for it …

… eventually!

Reach for the students




"Welcome to Math, class"
in
Oz-Ontario, 2007

Overview

3 factors that affect student achievement:

1) Classroom environment

2) Assessment and Evaluation

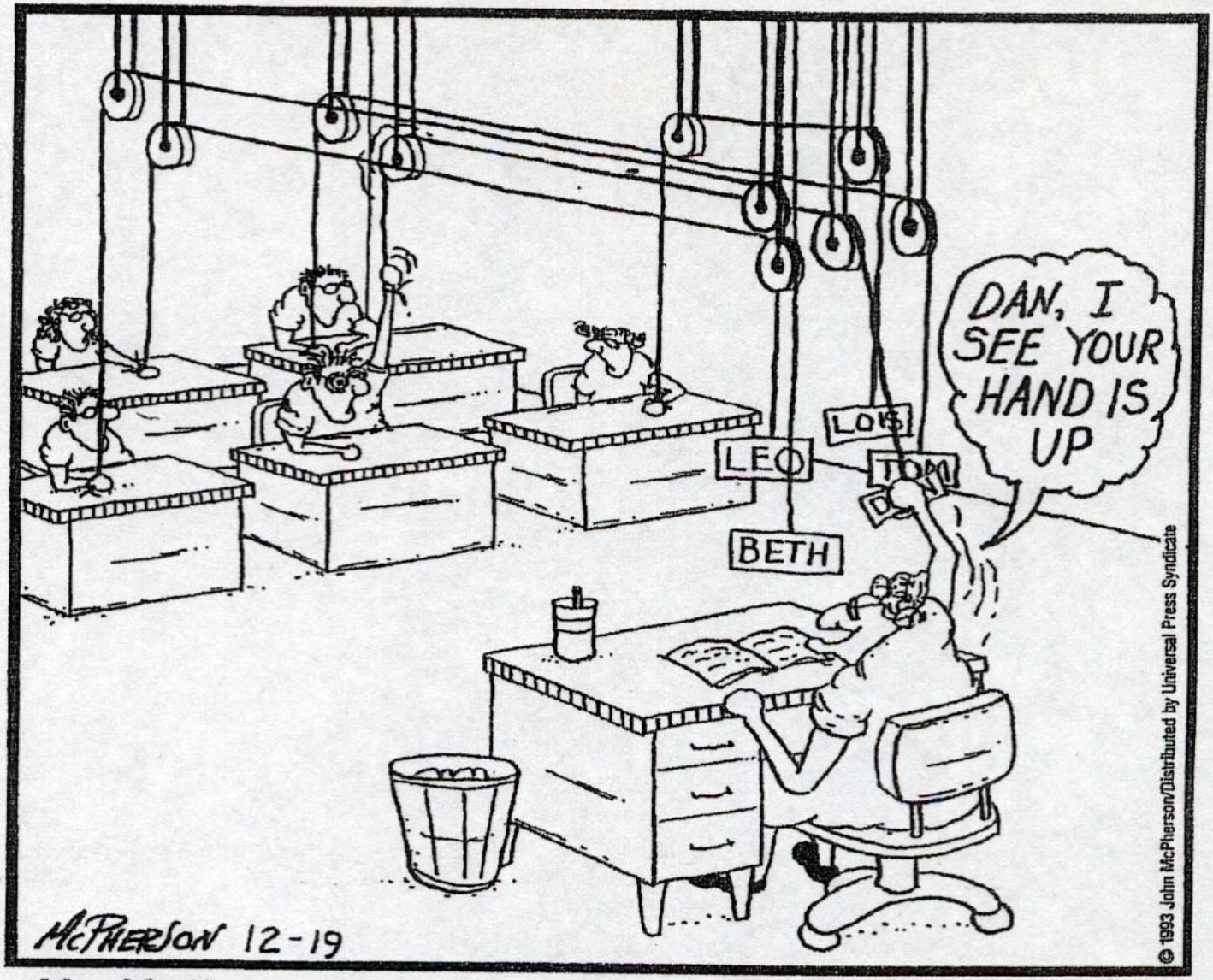
3) Pedagogy – The art of Teaching

Classroom Environment

- The teacher displays a positive attitude and engages all students in discussions and activities.

CLOSE TO HOME

JOHN McPHERSON



Mrs. Mortleman made sure that everyone participated in class.

Instructions must be clear and well stated.

1. Name the following animals:

a. 

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BOB



"Teachers mistakenly think that slower students cannot work in the higher levels [of thinking], although studies by Bloom (1976) show that the opposite is true.

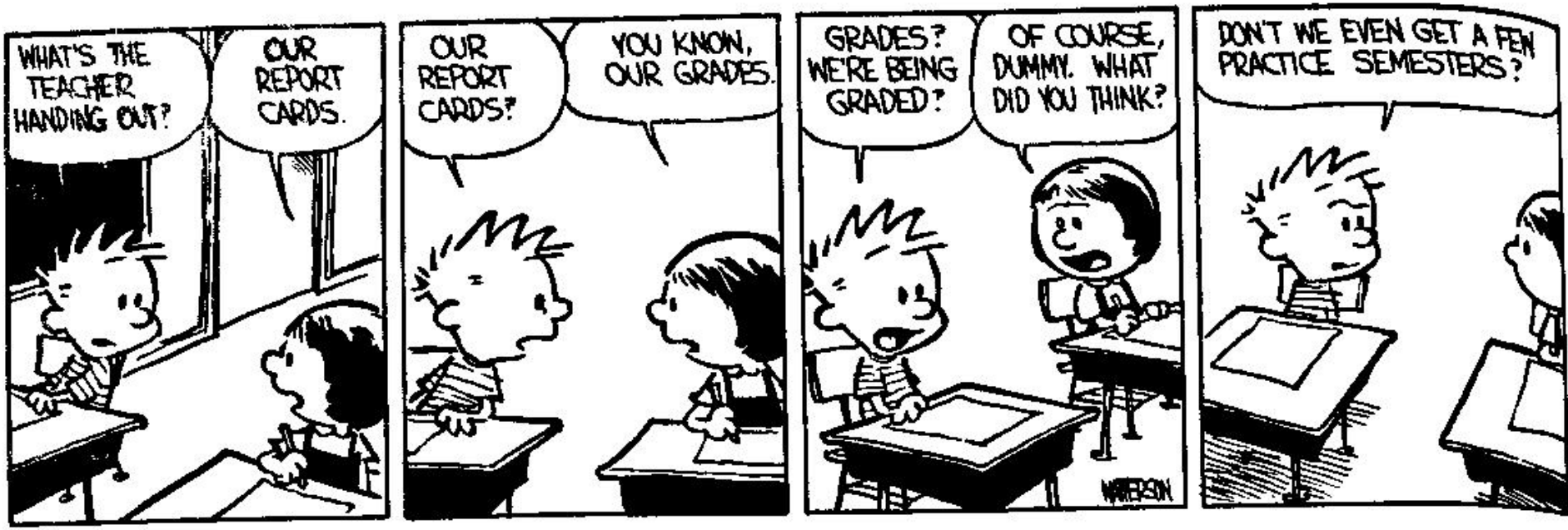
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Donna Walker Tileston, "Ten Best Teaching Practices"

Judging the Evidence

Assessment and Evaluation

Gathering the Evidence



Evaluation and Assessment

- 'Evaluation' can be thought of as Judging the Evidence.
- 'Assessment' is Gathering Evidence

Need an Assessment Tool/Strategy?

Chapter test Performance Task Quizzes

Self Assessment Peer Assessment

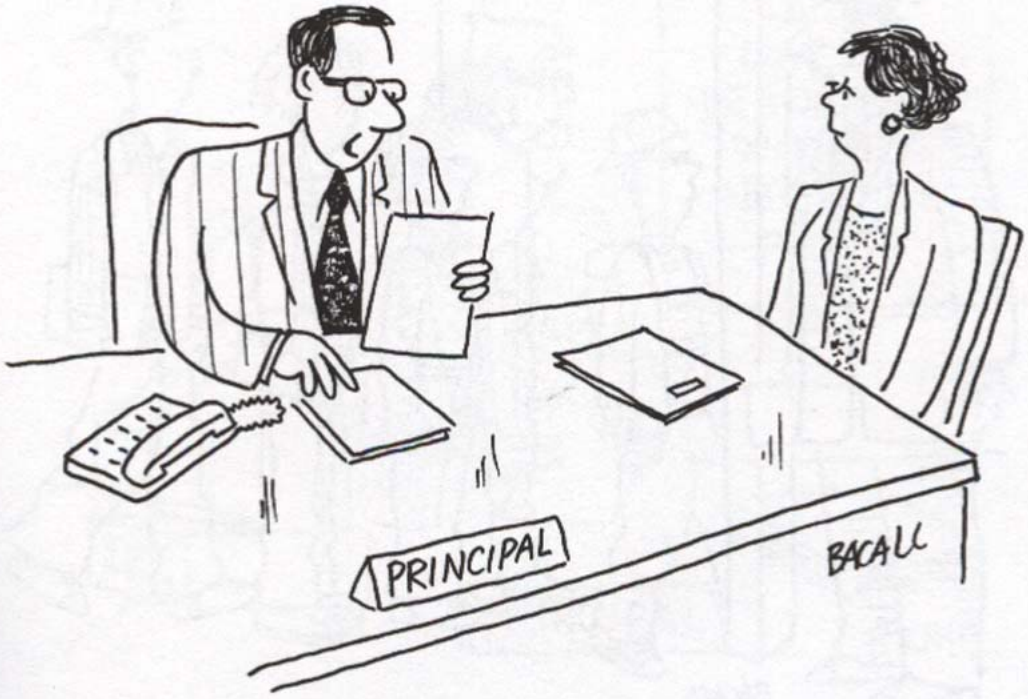
Observations Portfolios etc., etc.

Grading Eggs

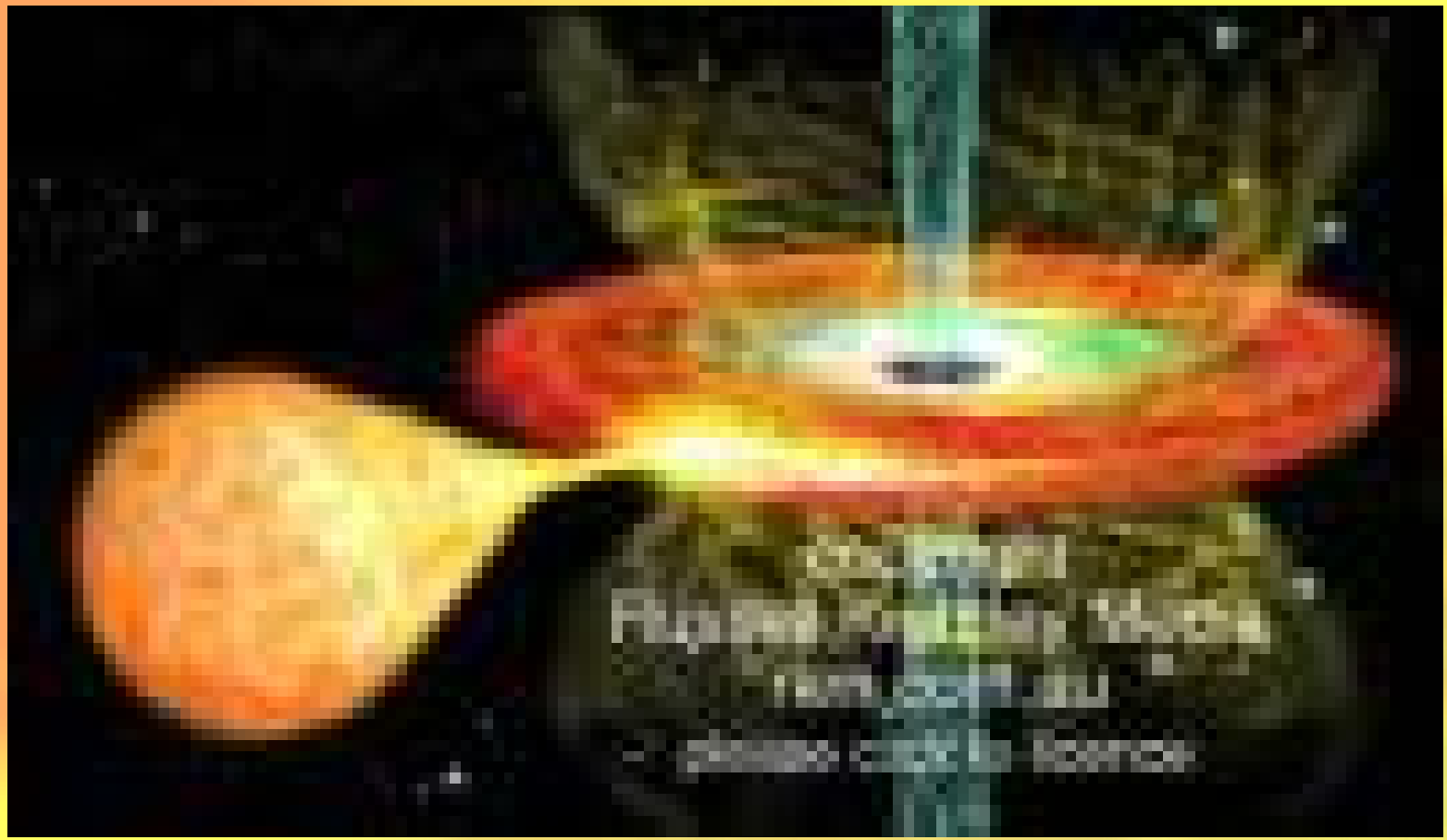




“I warn you! These new ideas are dangerous!



"This *is* a novel way to teach math but I'm afraid we can't try it. It's never been done before."



Assessment, for many math teachers across Ontario, remains a Black Hole - misunderstood, and swallowing up often fruitless expenditures of energy and time.



I THINK YOU'LL FIND MY TEST RESULTS ARE A PRETTY GOOD INDICATION OF YOUR ABILITIES AS A TEACHER.

Grading Eggs

