



WRITE

- How do children learn best?
- List ideas of “best” learning (no matter what subject area)

SHARE

- Share your sentence(s) with someone else.
- Share your sentence(s) with all of us.

Learning Theory

- Based on Philosophy (can’t answer the question unless you deal with it philosophically)
- 2 Key Questions
 - What is the “actional” nature of the human being?
 - What is the “moral” nature of the human being?

Behaviorism

- Student is passive by nature.
 - Stimulus – Response
 - Repetition
 - TELLING
- Student is morally bad by nature
 - Punishment and reward
 - discipline

Humanism

- Student is active by nature
 - Not talking about physical activity
 - Talking about mentally active
 - Discovery and drawing out (because it is already there)
- Student is morally good
 - The desire to learn is inherent
 - Teachers should not squelch the learning.
 - Learning is discovering what is already known.

The Crux of the War!

- Behaviorist say we **MUST** learn the facts – and learn them correctly
- Humanist say we **MUST** draw out the conceptual understanding from the students
- ITS PHILOSOPHICAL



What do YOU Think

- Matthew 5-7
- Mark 6:34
- Luke 4:15
- Acts 10: 1-23
- Acts 17:22-33
- Matthew 13:37-43
- Matthew 24:32-33
- Mark 4:33-34
- John 3:1-21
- John 8: 1-12

Cognitive Interactive Theory

- Student is interactive by nature
 - There is something outside the human mind to be known
 - Humans have the capacity to know
 - Humans actively build mental structures for new knowledge

Theistic Cognitive Interactive Theory

- The student is morally bad (by the sin nature) but redeemable!
 - Can't expect students to always have the desire to learn
 - There is some internal motivation
 - Management/discipline in the classroom

WHAT DOES THIS HAVE TO DO WITH TEACHING MATH?

- **EVERYTHING** (you knew I'd write that)
- How we plan a lesson can be based on how we understand our students and how they learn best.
- We can plan to maximize how God created us.

Interactive Lesson Model

- Objectives: Where am I headed?
- Motivation: How can I activate prior knowledge? How can I get my students minds on the math lesson at hand?
- Input: Different types – skills, facts, concepts and generalizations
- Processing Activities: what can my students do to make sense of the lesson.
- Assessment: Did they get it? How do I know?

Introduction to Fractions

- Objective?
 - The Student will be able to describe a fraction in a real situation.
- Assessment (Backward Design)
 - How will I know that my student can describe a fraction?
- Processing Activities
 - What can students do to MAKE SENSE of new information about fractions?

Introduction to Fractions

- Motivation
 - What prior knowledge will students use? What will they use when they are making sense of fractions?
 - Whole – Parts are a key aspect
- Input
 - I often plan this LAST – What activities will I have the students do? What will I do to help students learn new information.

HOMEWORK

- Where does this fit in the interactive model?
- How do you plan for homework?
- Current problems with homework:

Your Turn!

- Think of a math lesson that you have recently taught to your students. How would you have structured it differently if you had used the interactive model. Use the 5 main parts of the model to outline this lesson on paper.
- Objectives, Motivation, Input, Processing, Assessment

For your future thoughts

- Write a paragraph or two on your personal philosophy of mathematics education.
 - What is mathematics?
 - How do you view your students?
 - How do students best learn mathematics?