NOTHING IN QUALITATIVE RESEARCH MAKES SENSE EXCEPT IN THE LIGHT OF (ENTER THEORETICAL FRAMEWORK HERE)

Glenn Dolphin, PhD
Tamaratt Teaching Professor – Department of Geoscience
- How do participants make meaning?
- Not just words
- Exploratory: Answers question, “What’s going on here?”
- Abductive/Inductive reasoning
- Theory-in/Theory-out
Theoretical frame (or lens) through which you will collect and analyze the data

- Dobzhansky’s quote
- Helps to structure investigation
- Determines what is and what is not data
- Critical (Feminist, Queer), Phenomenographic, Model-based learning, Embodied cognition
15 classes
  - Approximately 2 hours each

19 meetings
  - 2 1-hour interviews (pre/post)
  - 15 5-30 minute pre/post class
  - 2 1-hour planning

Analyzed

Transcribed
“An empirical approach to identifying various ways in which a particular phenomenon is experienced or understood in a group”

“enables data...to be reduced to a limited number of discrete categories which together represent the ‘whole’ of the way in which a phenomenon is conceptualized” (Stokes, 2011)

How Eric understood teaching
Need background 20120526:457-460, 20120605:108-111, need structure 20120611b:10-29, 104-108, need vocabulary 20120611b:117-134, I've told you now let's play 270-271, don't have the tool box yet 20120614a:38-44 so they have a fundamental base 20120614a:96-105, hesitant to offer answers 20120614b:12-34, don't have enough experience 197-199, they didn't realize they could apply it to science 251-255, didn't do the reading 20120618:60-61, turn lab into reification section 20120621:41-45, I'll give them some background 20120705:133-136, labs with a little lead-in 533-534, 552-557, how do you keep from force feeding them if they don't have background 20120709:11-16, "I blew through" what we know about PT for climate course 20120712:21-32, we talked about really basic physics the first week 20120809:312-317

- Need background
- Need structure
- Need vocabulary
- Engagement if they are willing
- Discussion if they are willing
- Not connected to a scientific way of thinking
- Overwhelmed by too much reading
Views of students

Planning

Views on teaching

Teaching strategies

Use of textbook

Expressing knowledge

Negotiating

Scientific method

Views on science, a physical body of understanding 20120611b:440-441

Views on teaching science
- Developing knowledge with *high explanatory power* to answer this question:

Based on how he understood teaching, students, science, etc., why did Eric teach the way he did?
Pedagogical Context Knowledge

Teaching with the end in mind

- Structured or self-directed
- Constraint of time
- Understanding of textbook
- Understanding of students
- Certainty of scientific knowledge

Barnett & Hodson, 2001, p.437
What about a different theory-in?

Embodied cognition (Lakoff & Johnson, 1980, 1999)

• We gain meaning of the world by interacting with it (Kahneman, 2011; Lakoff & Johnson, 1980, 1999)
• We understand abstract concepts in terms of concrete, embodied experiences. (see also Bereiter, 2002; Carey, 2008; Grady, 1998; Kahneman, 2011; Nersessian, 2008, Reddy, 1979)
• Common biology and shared environment allows shared meaning. (Lakoff & Johnson, 1998)

Perceiving is understanding

Do you see what I mean?
I hear what you are saying.
The detective did some sniffing around.
He gained a taste for the culture.
She was able to grasp the concept.
Thinking is manipulating objects.

Understanding is grasping.

I mean part of teaching these classes is, is you've got to judge, you've got to guage what's really important to come away with. 20120713:60

Memory is a storehouse.

I want to run this past you. 20120526:326

Analyzing ideas is taking apart objects.

And give me examples at each step. Maybe they could even get that one question. Or I could break it down, you know. But, but that would be the level of thinking. 20120619:83

Communicating is sending.

the structure of an idea is the structure of an object.

Is there anything you want me to hold back? 20120526:257

they are starting with a framework in which they can begin to hang that library full of facts; to shelve those things. 20120809:224

starting to pull apart fluctuations in earth's magnetic field. 20120526:406

where what they're doing is using the given material as pieces of a bigger puzzle, as opposed to just learning the shape of those pieces. 20120611b:37
Discerning a pattern

Events are objects

Thinking is moving

Thinking is manipulating objects

MIND IS A BODY

EVENT-STRUCTURE

Events are locations
“And *we’ve got these different pieces* of evidence that were from different parts of the globe that were interpreted by different people throughout history, right?...All of these things exist but *there’s a big picture* and *that big picture* has to do with the shapes of the continents, and once we started looking off shore; *understanding how the system worked in total*. Then we really saw *this picture of plate tectonics*. So you’ve been... *juggling all of these ideas* ...

(20120712:54-74)
A theory is a puzzle, facts are pieces, understanding is putting the pieces together.
If we could sort of **lead up to Thursday**, umm, and, **get a lot of stuff**- and this class is actually front loaded in terms of plate tectonics. We are starting with it. So, if you could **gear up and get ready to roll**, and work with him in terms of what he wants to do for lab and maybe even, you know, **roll what you are doing** into what **he is going** to do for lab...that would be really good if we could do it **that way**. And Uhh, the thing that I would like to do with this is to try and **streamline what we did** last time around...
Meaningful activity is a purposeful journey...

Learning is a fieldtrip covering the terrain of knowledge
Object-Ground

Knowledge going to student

Role of:

Instructor

- Has and distributes pieces
- Passively receive and store pieces
- Ready-made puzzle and pieces

Students going to knowledge

- Leads students, interprets terrain
- Follow, pick up things along the way
- Ready-made path, interpreted stops

Knowledge

Students