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Discrepant Teaching Events: Addressing Students' Misconceptions


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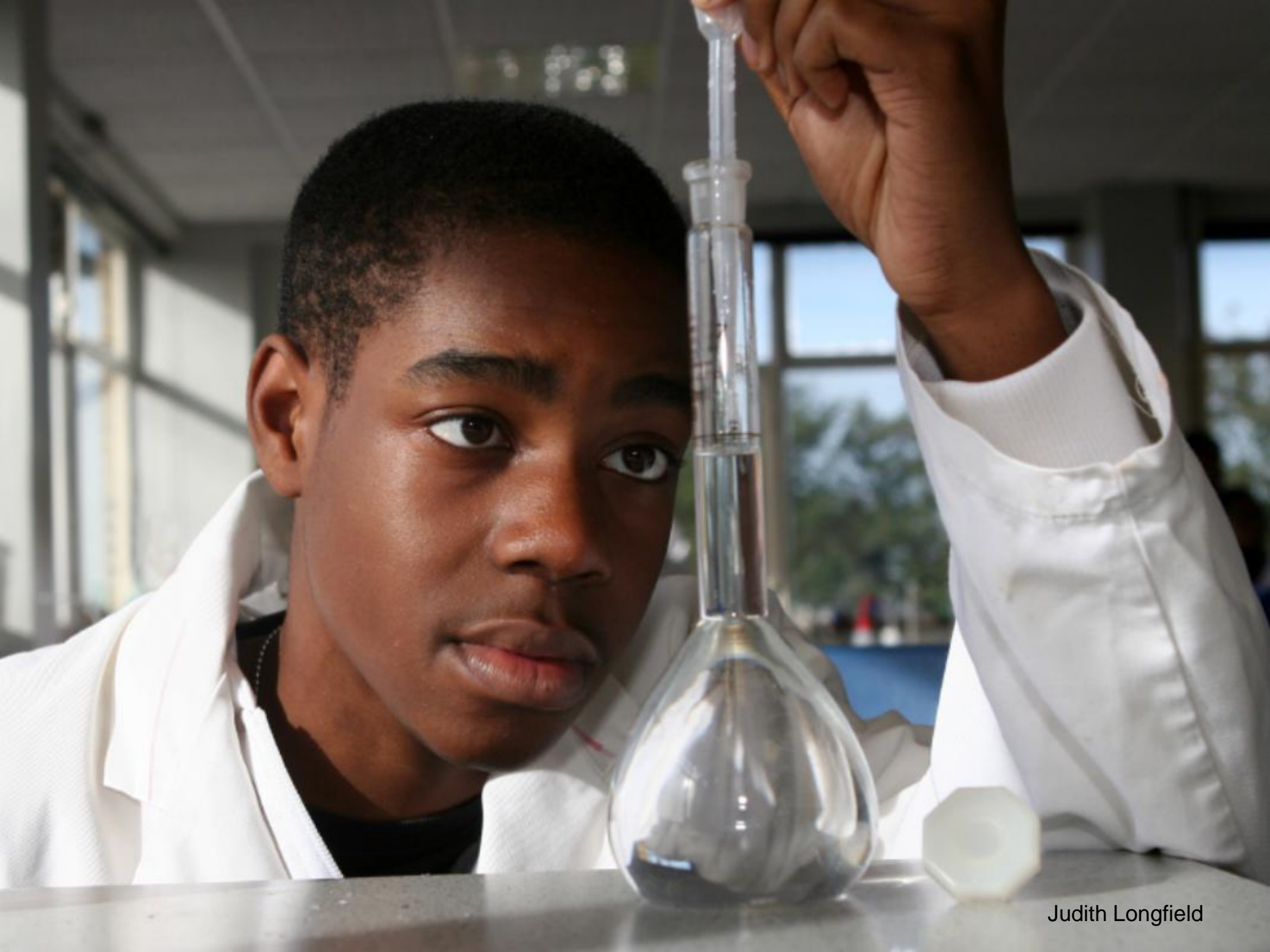


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Please & Thank You

- **No Talking, Please**

- Read quiz in front of you & answer questions
- There are no wrong answers.
- No names please. This is an anonymous activity.



Judith Longfield



Technique

~~The Problem~~ ^ With No Name

Chemical modification
of synapses is at the
root of learning



Judith Longfield

Discrepant *Teaching* Event (DTE)

v

Discrepant *Science* Event (DSE)

Similarities

- Depict abstract construct or concept using tangible experience
- Purpose—confront students' tacit beliefs & naïve conceptions
- Create cognitive disequilibrium—students reexamine their thinking

Differences

- DSE—students observe teacher demonstration at beginning of class/lab
- DTE—used in any discipline at any time
 - Need not be teacher-centered performance
 - Requires students to be active participants in their own learning





**Discrepant
events make
the invisible
visible.**

Pedagogic al JuJitsu







Nathan Palmer



Thanks for Coming !! More Information . .



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Discrepant Teaching Events: Using an Inquiry Stance to Address Students' Misconceptions

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Science instructors have long known that the use of discrepant events with unexpected outcomes is a powerful method of activating thinking. A discrepant *teaching* event is similar to a discrepant *science* event in that it vividly portrays what is often an abstract construct or concept and has an

<http://www.isetl.org/ijtlhe/pdf/IJTLHE732.pdf>

the utilization of an "inquiry stance" to teaching as a way to address students' misconceptions of discipline specific concepts.

Discrepant events (demonstrations that produce unexpected outcomes) are used in science to capture students' attention and to confront their beliefs about a "phenomenon by producing an outcome which is contrary to what their previous experiences would lead them to believe is true" (Misiti, 2000, p. 34). Science teachers have long known that the use of this teaching strategy, which Sokoloff and Thornton (1997) call an interactive lecture demonstration, can be a powerful means of uncovering students' preconceptions about science phenomena at the same time that it activates the thinking and learning process. A discrepant science event can be as simple as floating two identical cans of

Bransford, Brown, & Cocking, 2000; Pintrich, Marx, & Boyle, 1993). According to Strike and Posner (1992), students "do not alter concepts that play a central role in their thinking unless and until they see them as having become dysfunctional" (p. 148). Conceptual change models hypothesize that once students are dissatisfied with their current thinking, new understanding can be formed if the new idea provides a better explanation than the previously held idea and is intelligible (understandable), plausible, and believable (Posner, Strike, Hewson & Gertzog, 1982). To be effective, discrepant events must be vivid enough to help students see the dysfunctionality of their current concepts in

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