

Dynamic and Interactive Assessments Provide Comprehensible Input and Productive Tools for English Language Learners

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A New Environment

- ▶ Trend towards computerizing large-scale assessments
- ▶ Opportunity to improve what we measure, and the accessibility for ELLs
- ▶ ONPAR methodology uses multisemiotic representations in a dynamic and interactive environment.
- ▶ Application to formative teaching tools, and large-scale performance based assessment
- ▶ Data indicates that ONPAR strategy is successful when controlled for ability

Outline

- ▶ Architecture - four environments
- ▶ Techniques
- ▶ Item demonstration

Four Environments

- ▶ **Introduction** –Begins to activate schema
- ▶ **Problem solving environment** –builds concepts as part of content and context, facilitates other aspects of item
- ▶ **Task question** – supported with images, animations, audio; at times is redundant because of the other environments; language for precision
- ▶ **Response Environment** – Item type tailored to directly measure the targeted construct; uses representations established in other environments
- ▶ The connection between environments is essential

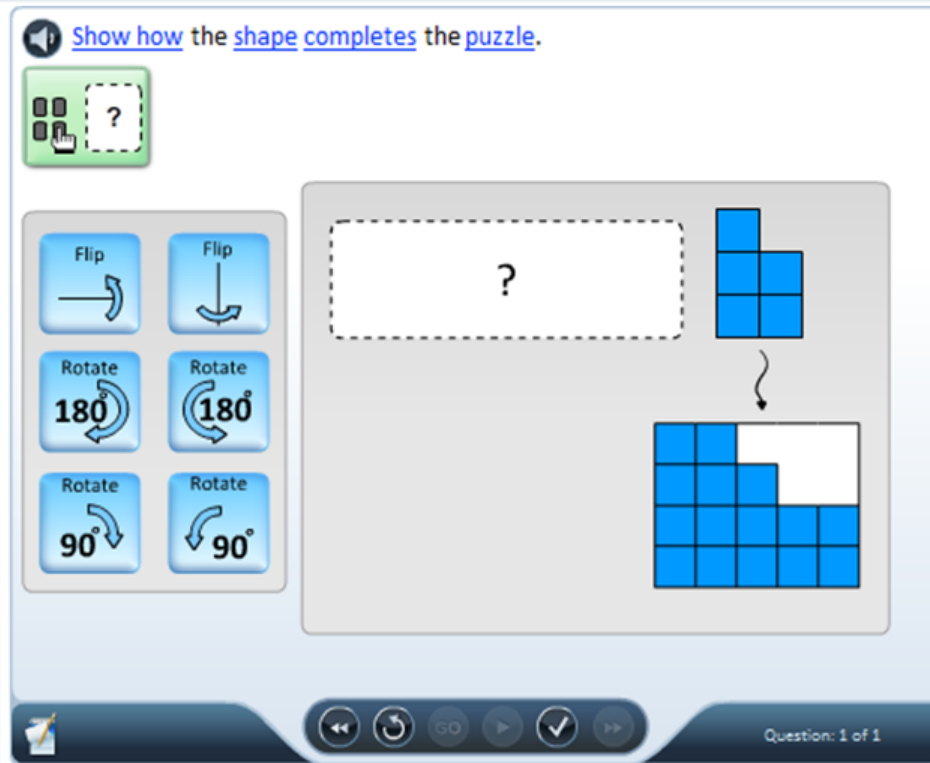
Techniques

- ▶ **Multisemiotic representations** replace large amounts of text, and **build meaning and complexity across screens**
- ▶ **Multisemiotic representations focus students on item target** – provide tools and create meaning
- ▶ **Using varied item type** – direct measurement of the construct
- ▶ **Intuitive user-interface design** – minimizes the construct irrelevant variance associated with figuring out how to interact with the item

Item Demonstration

- ▶ Puzzle
- ▶ Ramp experiment
- ▶ Substance separation
- ▶ Power Plant
- ▶ Moon Phases

Puzzle



- Animations –apply concepts and then serve as tools
- Build in complexity, can be even more sophisticated
- Producing vs. selecting
- Intuitive user interface design elements


Ramp Experiment




Set up an experiment to test how cart weight affects time down the ramp.

Question: 1 of 1

- Building what you are supposed to be thinking about – introduces experiment and variables
- More direct information than selecting or writing
- Intuitive user interface design

Substance Separation

 [Explain your answer.](#)

salt

sand

water

filter

absorbs

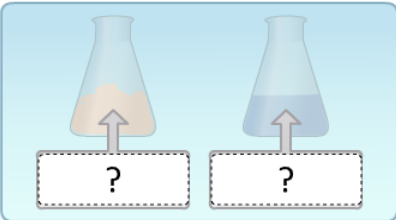
does not absorb

dissolves in

does not dissolve in

floats in

sinks in




Because

? ? ?

and

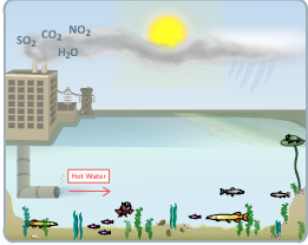
? ? ?

 question 1 of 1

- Builds concepts and complexity through several question screens to the target task question
- Animations – essential, rather than on the periphery or for engagement purposes
- Continue to support but need for the support decreases

Power Plant

How does the power plant affect the lake ecosystem?



acid
air
lake
rain
NO₂
SO₂
CO₂
O₂
No Change
Increases
Decreases

causes

causes

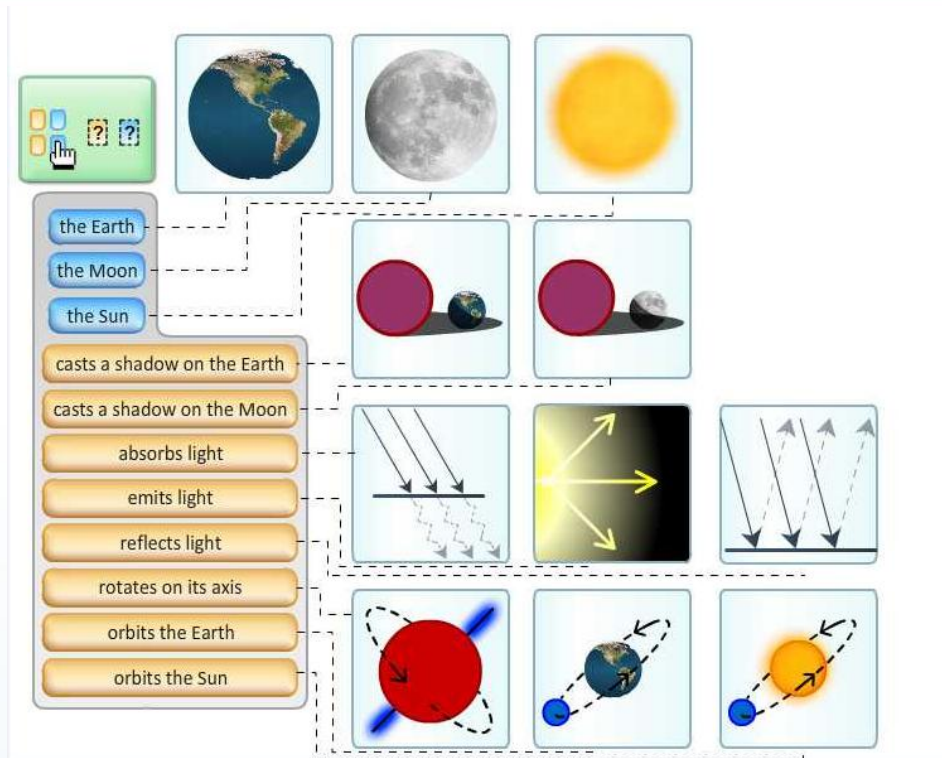
causes

causes

question 1 of 1

- Response environment can match the complexity of the construct and target

Moon Phases



- Response environment – Sometimes it is more effective to have rollovers for predicates
- Subtle content distinctions and misconceptions represented

Questions/Comments?

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