How Using POGIL Activities May Help Close the Opportunity Gap

Why?

In her work on Culturally Responsive Teaching, Zaretta Hammond identifies “building intellective capacity through information processing” as the core task that will help close the achievement gap for underserved students. She defines this task as “the student’s ability to take inert facts and concepts and turn them into usable knowledge” (2015, p. 123). In this activity we will analyze the structure of Process Oriented Guided Inquiry Learning (POGIL) activities to explore one strategy for building intellective capacity.

As you work through the following questions, be sure to follow your team role(s).

Model 1 – Comparing the POGIL learning cycle with Culturally Responsive Teaching’s stages of learning

The POGIL Learning Cycle

- **Phase 1: Exploration**
  Collecting information and examining data in a model (questions in an activity)

- **Phase 2: Concept Invention/Term Introduction**
  Finding patterns in the data and converging on the concept by asking questions that analyze, compare, and contrast (questions in the activity)

- **Phase 3: Application**
  Testing the concept by applying it to new contexts (questions in the activity)


The Culturally Responsive Teaching Stages of Learning

**Stage 1: Input**
The brain decides which information to focus on: Is it relevant? Does it stimulate curiosity? Does it elicit an emotional response? The short-term memory system holds the information for 5-20 seconds before passing it on for elaboration.

**Stage 2: Elaboration**
Information enters the working memory for 5-20 minutes of processing to connect the new information to established patterns of information already stored in the brain. This is where nerve cell dendrites are stimulated to cause new connections and brain growth.

**Stage 3: Application**
If the new learning is applied or reviewed within 24-48 hours, the brain can make it permanent and send it to long-term memory. This practice stimulates myelin production on the nerve cells, allowing those cells to fire faster and stronger – expanding the working memory. This expansion in turn increases intellective capacity and the student’s ability to perform higher order tasks.

Use the information in Model 1 to answer questions 1 – 7.
Reach agreement with your team before writing down your consensus answers.

1. Look carefully at the “Why?” box. Write the meaning of the acronym, POGIL.

2. Look closely at Model 1.
Write the names of the three steps of each learning framework in the table below.

<table>
<thead>
<tr>
<th>Step</th>
<th>POGIL Learning Cycle Phases</th>
<th>Culturally Responsive Teaching Stages of Learning</th>
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3. Compare and contrast the **first steps** of each learning framework.
   a. **Highlight** or **underline** one noun that you find in both POGIL and Culturally Responsive Teaching.
   b. Describe one difference between these first steps.

4. Compare and contrast the **second steps** of each learning framework.
   a. **Highlight** or **underline** one noun that you find in both POGIL and Culturally Responsive Teaching.
   b. Describe one difference between these second steps.

5. Compare and contrast the **third steps** of each learning framework.
   a. **Highlight** or **underline** one verb that you find in both POGIL and Culturally Responsive Teaching.
   b. Describe one difference between these third steps.
6. Based on your team’s analysis of the information in Model 1, how does a POGIL activity help students to “build intellective capacity through information processing”?

Check your team’s answer to question 6 with another team before you continue.

**Read This Again**

In her work on Culturally Responsive Teaching, Zaretta Hammond identifies “building intellective capacity through information processing” as the core task that will help close the achievement gap for underserved students. She defines this task as “the student’s ability to take inert facts and concepts and turn them into useable knowledge” (2015, p. 123). In this activity we will analyze the structure of Process Oriented Guided Inquiry Learning (POGIL) activities to explore one strategy for building intellective capacity.

7. Although Hammond uses the term “achievement gap” in her book, how might the term “opportunity gap” move us more toward an assets-based mindset and away from a deficit mindset?

8. Discuss with your team. Might using POGIL activities in the classroom be part of an effective strategy for closing the opportunity gap for underserved students?

   a. Your team’s claim:

   b. Your team’s evidence:

   c. Your team’s reasoning: