

TEACHING ELEMENTS

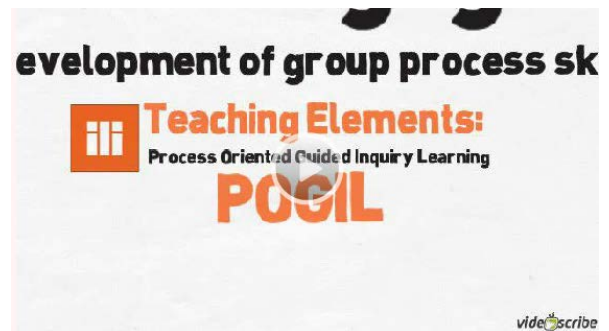
POGIL

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WHAT IS IT?

Are you interested in exploring ways to support student engagement with the content while encouraging development of their group process skills?

Process Oriented Guided Inquiry learning (POGIL) is a structured approach that requires students to work in self-managed teams to explore content in a manner that requires them to solve problems, conduct analysis, and cooperate to draw valid conclusions. Because students are using the content to solve a structured problem or set of questions rather than being given the content via a lecture, they are more like to grasp the relevance of the content.



The POGIL approach includes 1.) Faculty provided-model and related content; 2.) Specific problem or defined set of questions for small groups to solve/answer with little guidance from the instructor. While there are any number of student-centered classroom techniques, POGIL is unique in that it makes students responsible for their own learning, in collaborative teams, so it helps them develop group process skills while they are gaining content knowledge.

WHAT IS THE EVIDENCE POGIL HAS A POSITIVE IMPACT ON LEARNING?

Research in the effective use of the POGIL structure has shown that the practice:

- Leads to significant improvement in academic performance (on multiple measures) over traditional pedagogy (Lewis & Lewis, 2008).
- Improves test scores and course grades as compared to the same courses taught by the same professors before the POGIL process was incorporated in the course design (Brown, 2010).

Further evidence of the value of POGIL comes from research that shows students learn more when they construct their own understanding of concepts (Bransford, 2000; Hanson & Wolfskill, 2000).

POGIL IN ACTION

To be effective, there are two elements of design to focus on when adopting the POGIL structure:

GROUP PROCESS MATERIALS

One of the most defining characteristics of POGIL is that students spend the majority of class time working in small groups on activities that require higher-order thinking such as the synthesis, analysis, and the integration of ideas with previously learned concepts. Therefore, one aspect of the instructor's role is to provide students with a framework to

collaborate effectively as a team. Without this framework, students will not know how to apply the collective knowledge of the group or be able to develop group process skills such as problem solving, communication, and cooperation.

- For more detailed information, see [Building Group Process Skills](#).

GUIDED INQUIRY MATERIALS

The guided inquiry materials lead students to process information, verbalize and share their perceptions and understanding, make inferences, and draw conclusions. Writing effective guided inquiry materials that include appropriate models and questions is key to the success of this process.

- For more detailed information, see [Designing the POGIL Materials](#).
- For information on your role during a POGIL session, see [Facilitating a POGIL Session](#).

WHERE CAN I LEARN MORE?

Books:

Lee, Virginia S. (2012). *Inquiry-guided learning: New directions for teaching and learning*. San Francisco Jossey-Bass.

Articles:

Atkinson, M. P., & Hunt, A. N. (2008). Inquiry-guided learning in sociology. *Teaching Sociology*, 36(1), 1-7. Retrieved from <http://search.proquest.com.ezproxy.rit.edu/docview/223512927?accountid=108>

Johnson, C. (2011). Activities using process-oriented guided inquiry learning (POGIL) in the foreign language classroom. *Die Unterrichtspraxis*, 44(1), 30-IV. Retrieved from <http://search.proquest.com.ezproxy.rit.edu/docview/878895308?accountid=108>

Websites:

[POGIL \(link\)](#)

[TEDx: Andrei Straumanis \(YouTube\)](#)

REFERENCES

Bransford, J. (2000). *How people learn: Brain, mind, experience, and school*. Washington, D.C.:National Academies Press.

Brown, P. J. (2010). Process-oriented guided-inquiry learning in an introductory anatomy and physiology course with a diverse student population. *Advances in Physiology Education*, 34(3) 150-155; doi:10.1152/advan.00055.2010

Hanson, D., & Wolfskill, T. (2000). Process workshops - A new model for instruction. *Journal of Chemical Education*, 77(1), 120.

Lewis, S.E. & Lewis, J.E. (2008), Seeking Effectiveness and Equity in a Large College Chemistry Course: An HLM Investigation of Peer-Led Guided Inquiry. *Journal of Research in Science Teaching*, 45, 794-811.