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NOT JUST A GOOD IDEA, POGIL HAS A THEORETICAL FOUNDATION

Christopher F. Bauer, Patrick L. Daubenmire, and Vicky Minderhout

> *It's not about me, it's about the student. What is best for their learning?*
>
> *—A POGIL practitioner of 11 years*

The idea that classroom activities should align to how people learn is not new. It should be an obvious approach to what we do in educational institutions. Where we defaulted, though, the lecture model, is not an effective strategy for promoting learning. Learning is a constructive process. It occurs regardless of what instructors do in the classroom or in their courses. When instructors better understand the cognitive bases for how people learn and align activities to those processes, knowledge construction can be greatly facilitated in their classrooms. POGIL is one such approach that aligns to these ideas.

The POGIL approach is supported by theories that are grounded in the idea that knowledge and skills are constructed and developed by the learner. Knowledge simply cannot be transferred from an expert's mind to a learner's mind. Theories that explain how we learn pertain to cognition (the information-processing model), to pedagogic structure (the learning cycle), and to change theory (process education). In POGIL, these theories are melded together in a team environment that is consistent with a social constructivist epistemology as well as research conclusions on cooperative learning practices.

In a visit to a classroom implementing POGIL, one will find a discussion environment where students in small teams are engaged with each other while working on some task. The facilitator is moving among the teams to observe

and occasionally interact. One might see a team report to another team or be prompted by the facilitator to report to the whole class. Comments are summarized by teams or the facilitator to emphasize important concepts. Then, students set upon the next task and a similar cycle ensues. Students spend much more of their time talking and interacting in this environment compared with a traditional lecture, where the instructor does nearly all the talking.

In this chapter, we provide a brief introduction to the theoretical foundations for POGIL to make the case that POGIL is an instructional model that aligns to students' learning and goes beyond what a traditional lecture classroom can accomplish.

Knowledge Is Constructed, Not Transferred

The *GI* in *POGIL* stands for guided inquiry. This word meld represents both a pedagogical strategy (guidance) and a mind-set (inquiry). "Guidance" suggests that a knowledgeable, experienced, and watchful guide will lead novice learners through a learning environment that is likely unfamiliar to them. "Inquiry" suggests that this environment is to be explored, and novices can and should ask questions to learn something about the new territory. Together, "guided inquiry" further suggests that novices may not know what to look for or what questions to ask, and they may not see the deeper structure and nuances of the landscape. The guide must direct attention and thinking so that novices eventually undergo a change in perspective and can see the landscape. The idea that education should lead to seeing the world differently has been a motivator for incorporating inquiry into classroom instruction for a long time. Though this chapter is not an exhaustive treatment of the origins of the idea of inquiry as a principle of learning, it is important to establish that POGIL is grounded in a literature base that encompasses philosophical, pedagogical, cognitive, and neurological perspectives.

The interest in inquiry as a guiding pedagogical principle is not new. The philosophical concept "to inquire" can be traced all the way back to Plato if one feels the need to go there for justification. Sticking to more modern times, DeBoer (1991) provides a detailed historical development, following the movement of the idea of inquiry and its implications for learning in the nineteenth century through Huxley, Spencer, Rousseau, and others. For example, Pestalozzi (2012) espoused active learning, hands-on experimentation, and higher-order thinking as classroom goals, while adopting the viewpoint of teacher as guide and motivator. Herbart promoted a constructivist epistemology and a mode of teaching very much like the learning