

# PEER-LED TEAM LEARNING IMPLEMENTATION

## FROM A LEADER'S PERSPECTIVE: PLTL VS. POGIL

DWIGHT WILLIAMS

“Two heads are better than one” and within the past 15 years the Chemical Education community has used this idea to give birth to two programs, Peer-Led Team Learning (PLTL), and Process Oriented Guided Inquiry Learning (POGIL). Both these programs bring groups of students together to work on general chemistry problems with the aid of a peer mentor for guidance. I have had the honor of being a peer leader or moderator for both the PLTL and POGIL approaches in learning general chemistry as an undergraduate and as a graduate student. This comparison of the two methods, based on my experiences, will focus on how the groups are managed and how the activities or workshops are presented to the students.

When using a group study approach there are many different ways in which a group can be managed and interaction encouraged. In the POGIL approach each group member is given or chooses a specific role: Manager, Recorder, Presenter and Technician. The intent in assigning these roles is to provide structure within the group. In my experience, trying to enforce the individual roles is extremely difficult and when they are enforced students do not seem to be as engaged in the entire process of solving a problem since they are then focused on their specific role. In the POGIL approach to group management only the “manager” can ask questions of the leader/moderator. This is intended to encourage group interaction and limit the number of questions asked of the leader since the group members must screen their questions through the manager. This approach seems to work best when there is a large group-to-leader ratio. There can be frustrating moments in using this approach, when, for example, group managers have refused to ask a question or they reword the question and don't represent the group member's original question.

The PLTL approach to managing a group leans more to creating a family atmosphere within the group with no one group member “calling the shots;” instead, each group member is free to interact with the Peer Leader, with the result that all the students are more engaged in the entire problem-solving process.

Many faculty members are considering supplementing the traditional lecture with a group-oriented approach to enhance the students' learning experiences. The POGIL-style activities are presented to the student with little or no introductory material and rely on the student to struggle through a series of problems that increase in difficulty while also building and connecting the concepts from previous problems. The final problem is often unlike any of the previous problems. If the students can connect several concepts a solution can be found. The PLTL approach also uses a series of problems of increasing difficulty; the main difference, however, is in the amount of introductory material that is presented within or before the workshop. With PLTL workshops each group meeting is preceded by the student reading some introductory information and completing a self test. This provides students with a base of information before they come to the workshop session as well as gives them something to refer back to during the workshop session. In using the POGIL approach the student must rely solely on the textbook for more information and by limiting the students'

introductory material I have noticed students' frustration levels mount since all they have for reference is the previous problem and their book. While it is true that they also have the moderator for help, the moderator is only there to guide them in the thinking process by asking questions that lead them to the answer. This undermines the process if important concepts from previous problems are missed. Within the PLTL workshops the leader is always able to ask the students questions concerning the self-tested material that would help the process.

I feel that both these approaches to learning general chemistry are equally valuable; however, one system may be preferred over the other, depending on the instructor. The POGIL approach lends itself to a more advanced general chemistry class or other advanced chemistry courses such as Physical Chemistry since it focuses more on learning through struggle. The PLTL model lends itself to a wider audience which includes the beginner and the more advanced student and is perfectly suited for the general chemistry class whether it is in conjunction with the lecture or as a stand-alone program.

*Dwight A. Williams  
Graduate Student  
Department of Chemistry  
Virginia Commonwealth University*

*Editor's Note: Dwight Williams was a peer leader at Coastal Carolina University, and participated in the Peer Leadership Conference at the University of West Georgia in April 2001.*

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