

PEER-LED TEAM LEARNING LEADER TRAINING

MAKING THE GRADE: IDEOLOGY AND PRACTICE IN CONTEXT OF PERRY SCHEMA

JASMINA NIKOLOV

During my first semester as a workshop leader, the most fascinating phenomenon I observed was not in the PLTL setting. It was in the lecture context. Those at the front of the classroom, peering out at the student body “professed” that they had a body of knowledge that they would like to share with the students. They said that they wanted to make us understand science and expected us to become great thinkers. Well, even if my students didn’t exactly receive that speech, they did come away with the impression that they were up against an insurmountable obstacle – the challenge to weave together the various threads of responsibility created by the requirements imposed by lab, lecture exams, workshop, and personal dignity. In all practicality, lab requires application of techniques in a practical setting. Lecture requires that one can both pay attention for long periods of time and come to understanding just by listening. Exams often require one to memorize concepts, strategies, and rote problem-solving techniques, workshop requires an individual to work with a team to come up with a solution, and personal dignity often requires understanding. I really wanted to know how one goes about reconciling all of these very different requirements into the purported lofty lecture goals of “learning to think” and “understanding science.”

On the most basic level, the occasional chaos of workshop ensures that students come to realize that there is always more than one way to solve a problem. Therefore, one can definitively state that workshop engenders, in Perry’s terms (2001), multiplistic thinking. In contrast, most lectures encourage the kind of learning that students typically deal with via rote memorization. I found that most (if not all) professors vocally advocate that “working the problems” is the best way to go about learning chemistry. Using this technique ensures that when a student is stimulated by a difficult problem she will need to rely on muscle memory instead of her brain.

My personal context as peer leader informed my interests. I became most curious about finding whether or not the purported goals of workshop and its proponents were at odds with the aims of the existing lecture system. I wanted to know what professors thought was important, and how they went about reinforcing that aim in their lectures. What actions do they take to further these aims? Are the actions in class at odds with their purported goals? I tackled these problems by addressing them through the lens of an acclaimed educational researcher of the 1950s, William G. Perry.

Perry theorized that college students move through several stages of learning that become progressively more complex. Duality, multiplicity, relativism, and commitment comprise the crux of his theory. Duality addresses the “right or wrong” idea of education to which many students ascribe. The next stage, multiplicity, is the ability of a student to entertain several ways of solving a problem. And commitment, the most mature stage,

is the complex understanding of the world that there may be many answers to a problem and that the main issue in an education is to commit to one of them and to explore it.

I would argue that lectures and the required lecture readings and problem sets engender dualism at its most harmful. Students are forced to memorize terms and problem solving techniques instead of struggling with the material to find a solution that he/she understands. This struggle can be daunting to face alone. Workshop provides an outlet for people to bring their “I don’t really get that”-s and “can you explain that to me differently”s so that each person has a chance to be taught (by his or her peers) in such a way that he/she understands. That is the beauty of workshop. In the process, all of the students are exposed to many ways of solving similar problems, thus promoting Perry’s next stage, multiplicity.

To sum it all up, in context of Perry Schema, lecturing engenders dualistic thinking. Conversely, workshop facilitates learning at higher levels of multiplicity and beyond.

To find out more about the disconnect between workshop and lecture, I carried out a qualitative study. All professors teaching General Chemistry (Chemistry 103 or Chemistry 104) were interviewed. Workshop Coordinators filled out a directed questionnaire requesting similar information. The questions asked during the interview and on the questionnaire aimed to find out if students with a specific Perry thinking styles had advantages in lecture or in workshop. Activities such as reading, coming to lecture, and going to tutoring were coded as dualistic. Workshop, group problem-solving, and discussion were coded as learning activities that engendered multiplicity. When the professors were asked which activities they thought helped students most, they named those with dualistic characteristics as paramount to other kinds of activities. Sixty-six percent of professors favored an overall dualistic approach versus just thirty-three percent of workshop leaders.

<u>Perry Schema</u>	<u>Student’s Role</u>	<u>Nature of knowledge</u>	<u>Role of Lecturer & Workshop Coordinator</u>	<u>Student’s tasks in examinations & assessments</u>
Dualism	Passively accepts knowledge.	Factual; black and white; clear objectives; non-controversial; exceptions unwelcome	Authority. Gives the information that student should take.	Regurgitation of 'facts'. Exams are objective. Hard work will be rewarded
Multiplicity	Realizes that some responsibility rests with the student.	Admits 'black-and-white' approach not always appropriate. Feels insecure in the uncertainties this creates	Authority. Needs input from staff to determine what’s right/wrong.	Quantity is more important than quality. Wants to demonstrate maximum knowledge
Contextual Relativism	Sees student as source of knowledge. Discusses and makes own	Wants to explore contexts; seeks interconnections; enjoys creativity; scholarly work	Authority among other authorities. Values views of peers. Facilitates exchange of ideas.	Quality is more important than quantity. Wants room to express own ideas and views.

In recognition of the faulty reliance on regurgitative pedagogical methods, in recent years much emphasis has been placed on developing critical thinking skills in the sciences. During my interviews with professors one of the common difficulties mentioned was how to get students to think. Most professors believe that teaching thinking skills is in the domain of the workshop leader. But is it truly impossible to address higher-level cognition in a lecture setting?

An Alternative Method of Presentation

The results of my research led me to confer with one of the leaders of the Peer-Led Team Learning Project. Now that I knew we had a problem, I wanted to know how he thought professors could challenge students to think in multiplicitic terms within a lecture setting. Mark Cracolice, a Professor of Chemistry at the University of Montana-Missoula, has utilized the workshop method during his lectures to “keep students thinking about Chemistry the whole time.” Dr. Cracolice divides his 240 students into workshop sections with their respective workshop leaders. They sit in a prearranged area throughout the course. He relieves students of the pressures of note-taking by giving them lecture summaries beforehand. During the class he alternates between lecturing and group work, providing students with the opportunity to put theory into practice on the spot. Although retention has not improved, the class average for the final has increased from 70% to 80% since PLTL has been implemented. This means that more students are learning the material. In addition, he provides students with quizzes at the beginning of each class to gauge student progression. Dr. Cracolice says that he always sees a marked improvement in the area of critical thinking over the semester.

This indicates that we need a better educational model. One that would meet the desire of professors to have students engage in critical thinking would be best achieved by a Workshop/Lecture hybrid. Although all professors saw the merits of a workshop model, none mentioned (or were asked) about the possibility of incorporating workshop-style components into their lectures.

The two methods, lecturing and workshop, are fundamentally different and, as such, encourage the development of different skills. Workshop promotes a higher level of cognition by which the validity of solutions is tested by peers. This process, embodied by Perry’s idea of multiplicity, most closely resembles the kind of thinking utilized by scientists and engineers. On average, 90% of the General Chemistry grade is based on assessment of dualistic thinking via exams and quizzes. The dualistic learning necessitated by lecture-exam formats does harm to students by reducing thinking to algorithms.

If our students continue to “make the grade” at City College we are shortchanging our students of a more fulfilling scholastic life, rich with discourse. Workshop is critical to the intellectual development of college students. It encourages the kind of critical thinking that is essential to moving from Perry’s Dualism stage to developing a more mature Multiplicity of viewpoints. Considering ways of incorporating workshop elements into the lecture setting will help move City College beyond dualism.

*Jasmina Nikolov
Peer Leader
The City College of New York, CUNY*

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