

PEER-LED TEAM LEARNING IMPLEMENTATION

THE PLTL EXPERIENCE AT KEAN UNIVERSITY, A COMMUTER CAMPUS: WHEN WORKSHOPS ARE NOT REQUIRED

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The Peer Led Team Learning guidelines (Gosser, et al., 2001) clearly state that the PLTL workshops need to be an integrated part of the course. This can vary from actually being a part of the class hours, to being a separate “recitation” section, to being a separate course, or just a separate lab session. The guidelines also clearly state that the Peer Leaders should be peers, not professors. This does not mean that the professors of the course are not needed to be closely involved in the workshop problem design, but they are not the workshop leaders. The guidelines state that these workshops are not one-on-one tutoring sessions with the tutor as the leader, and the student as the follower. This does not mean that the PLTL leaders do not *lead* the workshop, as well as facilitate and direct, and organize, and engage and encourage the students, but answer givers, or teachers, they are not.

At Kean University, in Union, New Jersey, we are a predominately commuter state university. This means that students do not know each other as well as they usually do in a residence college. In many commuter schools, this also means that most students work 20 to 40 hours per week, as well as being a full time or part-time student. We at Kean University decided to try to use PLTL in Pre-Calculus and Computer Science introductory courses, to improve the success rate of our students, especially STEM students, to improve retention, and to build a better sense of community.

But this effort has struggled with a number of problems. In the summer of 2006 some Kean faculty became interested in PLTL to help the success rate of Math and Science students who take Pre-Calculus (required for STEM majors), and Fundamentals of Computer Science (CS0 - the first course for Computer Science majors, which includes some java programming). The student hours and workshop development faculty hours were paid for by an NSF grant (DUE #431637), called “Epsilon Corps” which was for the purpose of improving the retention, and course success, and recruitment of students in the STEM disciplines. A professor who had taught the Pre-Calc course helped to create a set of 10 Pre-Calc workshop problem sets. A Computer Science professor, worked with a professor who teaches the Fundamentals course to create a set of 10 Fundamentals of Computing workshop problem sets with some assistance from Barbara Ryder, and the RESCS Rutgers Emerging Scholars in Computer Science (RESCS) group [*Editor’s Note: See Computer Science Modules developed by Barbara Ryder and Pradip Hari*].

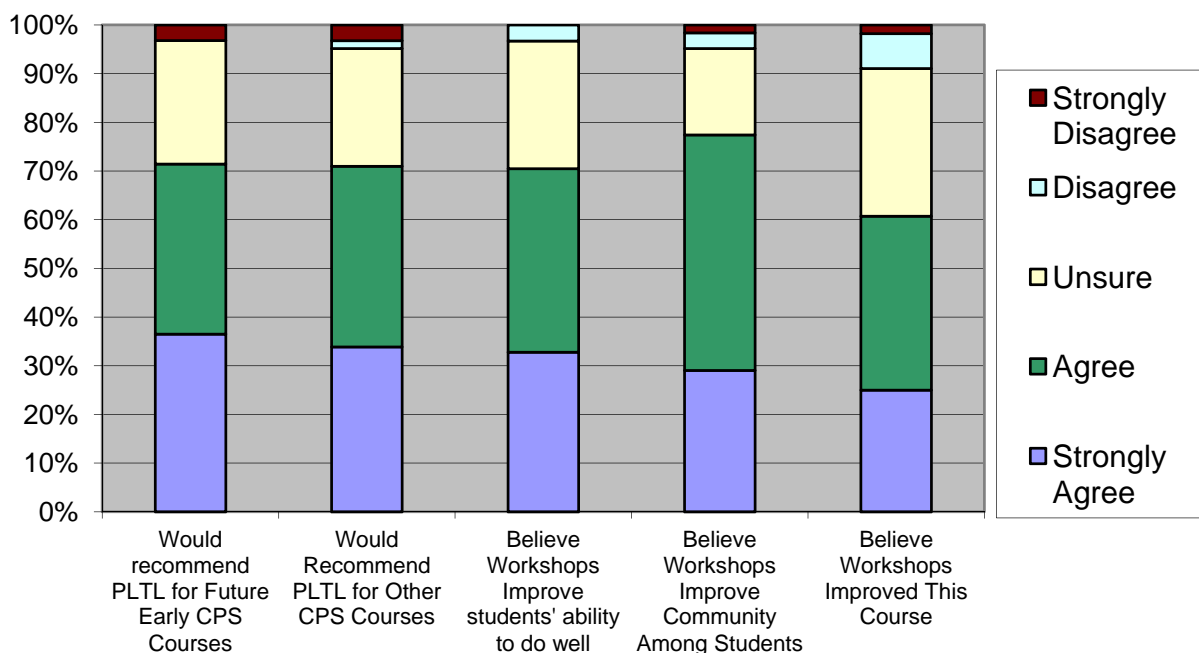
In the fall of 2006 we held PLTL workshops for Pre-Calc students twice a week, and Computer Fundamentals twice a week. Once a week we held problem solving sessions with the math PLTL leaders, and once a week for the Comp-Science PLTL leaders, as weekly training and review sessions. Only a few students came to the Pre-Calc workshops, and the Computer Science Fundamentals workshops, and they thought

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these sessions were tutoring for failing students. This was discouraging, but it was the first semester, and we were training student leaders, so we continued. In the spring of 2007 we continued with 3 Pre-Calc workshops per week, and 2 Computer Science workshops per week, and 1 PLTL leader workshop per week. We added an in-class brief PLTL workshop, for many of the student classes, early in the semester, to help the students to know what the workshops were like. The problem sets were improved by our PLTL leader team working on them, but still only a very few students came. In the summer of 2007 we changed two things. As a part of institutionalizing the PLTL style of workshops, the Pre-Calc workshops were moved to the Center for Academic Success (CAS) which does the tutoring for students on campus. All Peer Leaders were given some pre-semester training in the PLTL style of workshops and problem types. The math Peer Leader training workshops continued, but the math student workshops became CAS tutoring sessions, which at least meant that the tutors were trained in the PLTL style, and had the workshop problems available for students.

The Computer Science Peer leaders were also trained in the PLTL style. The PLTL workshops continued as before for the CS0 course, and PLTL workshops were added to include two junior/senior level courses, Distributed Systems in the fall 2007, and Systems Analysis and Design in spring 2008. Surveys were conducted both semesters, for all students in the CS0 course, and the two junior/senior courses. The PLTL Leaders continued to hold workshops for Computer Science courses. The introductory workshops were held in class to encourage the students' interest, and the department agreed that the professors should give extra credit for participating in the PLTL workshops as a part of the grade in the courses. The juniors/seniors almost all came, almost every week, but the freshmen and sophomores still very few came, and only for tutoring purposes. It appeared that we could not change the belief that the freshmen/sophomore students held, that the workshops were for students who were failing the class, and needed tutoring.

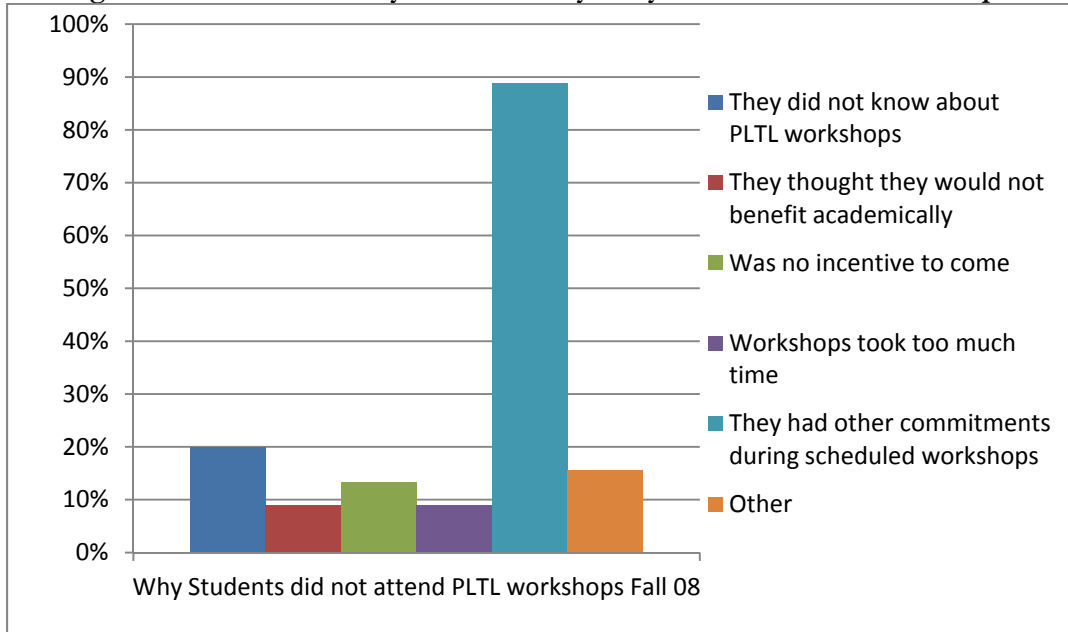
Figure 1: Freshmen/Sophomore PLTL Workshop Recommendations (Spring 2008)



In the fall of 2007 and spring 2008 we conducted attitudinal surveys with the computer science students, in all sections, whether they came to PLTL or not. Over 70% of the students thought PLTL workshops were a

good idea (Figure 1). They thought working in pairs to solve problems was a good idea. They thought that student PLTL leaders was a good idea. But still only 5 out of 51 of the freshmen/sophomores came in the spring of 2008. Most of them said it was too much of a burden on their schedules (see Figure 3).

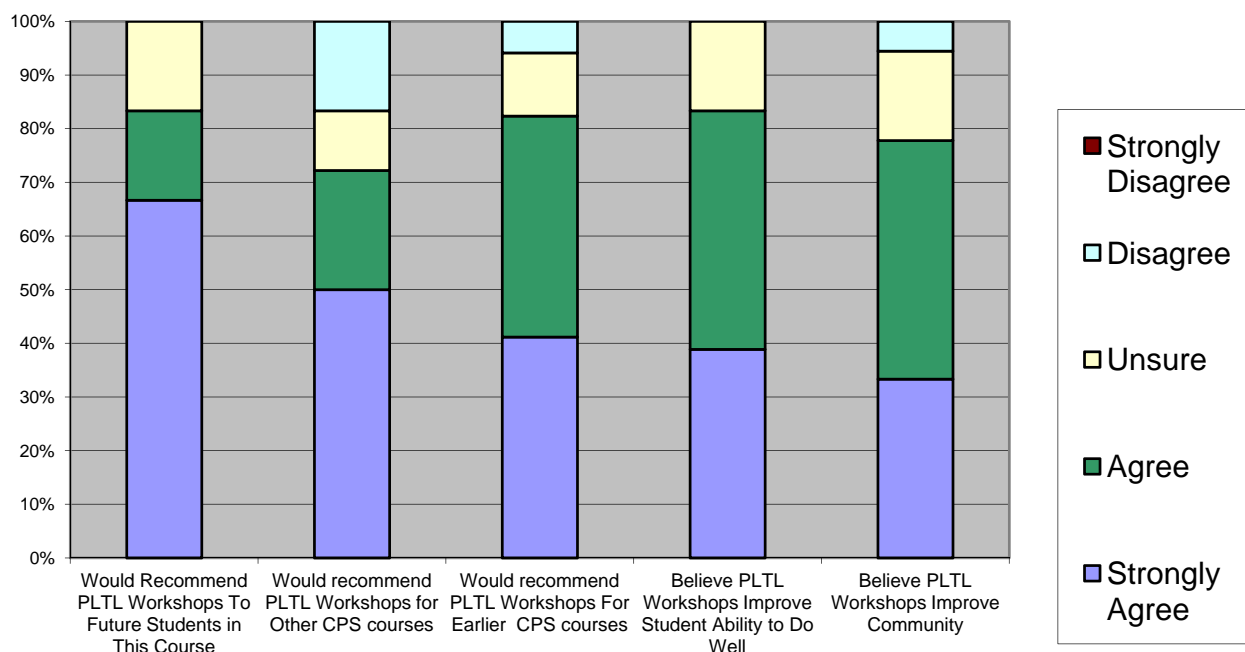
Figure 3: Reasons Given by Students: Why They Did Not Attend Workshop



Remember that most of our students work. Finding the money to pay the student leaders is also a problem, unless it comes under the tutoring umbrella of the CAS. The juniors/seniors, almost all of whom came to over half of the 10 workshops, all agreed that the workshops were worthwhile (see Figure 2, next page).

Both the freshmen/sophomores and the juniors/seniors felt the workshops should be continued in the future. So we tried for another year (2008/2009). One section of CS0 with freshmen/sophomores was taught by the PLTL coordinator, to better align the workshops with the class material. We added a third CS0 workshop on Saturday in Fall 2008, and that worked well. The Saturday workshop began to have a number of CS0 students coming regularly, and it had the desired effects. The “C” and “D” students who came were able to bring up their comprehension, and their grades, while they improved their team synergy. The Fall 2008 junior/seniors continued to come, and continued to recommend it for the future. About 75% of the juniors/seniors also recommended that PLTL workshops be used in the early CS0 course. So we will try the PLTL workshops for another year (2009/2010), and try to get the college to pay for the student PLTL leaders’ time and effort. We have worked and re-worked our problem sets, and would be happy to share them with other colleges. We believe that we are not the only college having PLTL workshop implementation problems.

Figure 2: Juniors/Seniors Recommendations For PLTL Workshops (Spring 2008)



In the fall 2009 some of the early in-class labs will be conducted as a PLTL workshop by the PLTL leaders. If the students see that the workshops are helpful, then hopefully they will continue to come on their own. In the Spring 2010 we plan to extend the class time by 1 hour per week, to incorporate the PLTL workshops into the class time, for 2 out of 4 sections of CS0. This will also allow us to compare grades of optional against required sections. The Kean faculty also feel that the PLTL style of workshops is important, so we are trying to incorporate more learning through investigative questions into the existing in-class labs. In the future we hope to improve the utilization of the PLTL methodology in Computer Science courses, to improve the student success in classes, and the retention in the discipline.

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Reference

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