

# PEER-LED TEAM LEARNING IMPLEMENTATION

## A NEW EXPERIENCE: INCORPORATING PLTL IN MATHEMATICS AT NJCU

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The Peer Led Team Learning (PLTL) program in the Department of Mathematics at New Jersey City University started in late 2008. In the past two years, this program has proved a very useful way to help our students.

Our department has had many years' experience in using tutoring program before the PLTL program started. With that previous program, the faculty coordinator hired students to be peer tutors after checking their credentials in mathematics. There was neither a formal training for the tutors, nor workshops provided to students. Two years ago, since our university was awarded a Title V grant, a PLTL program became possible - as well as a hot topic in the Mathematics Department and the Grants Office. As a result, four faculty members teamed up (two were on the grant steering committee and the other two served as coordinators for peer leaders) to start the PLTL program. I am one of the coordinators.

Though the PLTL program was built up upon our department's original tutoring program, it has been significantly improved. The following are the new approaches with this program: First, we stressed training peer leaders. In the traditional tutoring program, the recruited tutors started their jobs right away without any training, discussion, or even having a workshop on tutoring, while in the PLTL program, as the faculty coordinators, we meet with peer leaders and give them a formal training session every other week. In each training session, we focus on different topics targeting different aspects about the peer-led program. The topics include discussions such as

- How to lead a workshop
- What personalities should a person possess to be a good peer leader?
- What behaviors would be "Do's" or "Don'ts"?
- What qualities does a leader have to have in order to help students?
- What disciplines they should follow, etc.

In those training sessions, we also encouraged the peer leaders to discuss different issues they encountered in their tutoring practices. From time to time, one question raised by a peer leader leads to a hot discussion joined by many other leaders. In consequence, not only the peer leaders found better solutions to those issues, but also they learned good skills from each other. In addition, the Grant Office often invites researchers to give talks/workshops to faculty and the peer leaders each semester. Among those talks, the talks and the practices given by Dr. David Gosser and Ms. AE Dreyfuss from the PLTL program of The City College of New York are extremely helpful. The peer leaders are required to attend all those workshops, in which they learned many solid skills about teaching and peer tutoring. As a faculty coordinator, it is a great pleasure to see them growing into good leaders with their own pace.

Second, we asked and led peer leaders to do tutoring actively and dynamically. In the traditional program, tutors just sat in the tutoring room waiting for the students to come, and only when students walked in for help, they then answered the students' questions. The tutoring process was very passive, and usually if it was not around the exam time, the tutors have very few people come for help. On the contrary, in our PLTL program, instead of waiting for students, peer leaders are assigned to certain classrooms at certain times to give workshops, to which the students are asked to attend. Not only peer leaders can help solve the students' questions, but also they can actively lead the students to do the problems prepared by the faculty for the workshop. In addition, in the traditional way, lots of tutors answered the students' questions in detail and also solved the questions directly for them. Nevertheless, in the PLTL program, we asked peer leaders give students hints and let them think actively, instead of just offering right answers.

The third, we promoted the communication between students and peer leaders, faculty members and peer leaders as well as students and faculty members. Unlike in traditional way, students just came to get answers and then left, communications are ongoing constantly and become essential in our PLTL program. Through the communications, we can better understand students' needs and take them as our top priority. The liaison of faculty members-peer tutors-students made the PLTL program more effective to improve students' performance in math.

Taking my Intermediate Algebra session in spring 2010 as an example, we will see the new approaches made big difference in the outcomes of the tutoring program. For this course, I worked with two of the ten hired peer leaders for a pilot project for the Peer-Led program. There were about 22 students in this Intermediate Algebra session. Each week, both of the peer leaders ran one-hour workshop in two different days. Students could go to either one of the workshops. Although the material was the same for each week, in different workshops people had different questions, so every time students learned something new.

First I created the workshop materials and gave to the two peer leaders ahead of time. The materials covered the important parts of each chapter I just lectured. I asked the peer leaders to summarize the key points of the coverage of the workshop for the students by the end of each workshop: e.g. what types of problems we did today? What method we need to use in order to solve those problems? What is the hardest part you feel for these problems, etc. The feedback of the workshop is very valuable to my teaching. Also the peer leaders were encouraged to attend my regular lectures when they had time. By this way they knew what was going on and what I emphasized in classes. I met with the two peer leaders who worked for me every week. We talked about everything happened in their workshops and if any issue came up, solutions to solve it would be discussed. We also talked about what they thought would be the hardest part(s) for those students and what should be the best way to solve/improve the students' learning in those particular sections. Then I went back to the students who attended the workshops every week. We discussed from different view of points: how they felt, what part they liked, what part they did not like, etc. All these discussions gave me ideas about how the workshops should be improved. Communication became powerful and I could see that students who went to the workshops had better relationship with peer leaders and also myself. They became more confident and they saw that we really cared about their study so that it, in consequence, became a good motivation for them to study this course. The peer leaders took attendance for the students every workshop. Usually there were 6 to 10 people in each workshop. I think it's very important to lift the attendance. NJCU is a commuter university. Many students come to take classes and then leave right away, either for work or for family. In order to attract more students to come, I added a bonus to their grades if they attended 90% of the workshops. That helped to increase the students' participation according to the later report.

By the end of the semester, comparing the performance of the people who went to the workshops regularly, I found that their quiz grades were improved, so did their exam grades.

Though this is a small pool, it did give me quite positive information about the effectiveness of the workshops. One important thing I learned is that if the professor works closely with the peer leaders, together we can boost the students' confidence in math learning, and we can improve their performance in math classes.

Obviously the PLTL program excelled the old traditional tutoring. I see from my own eyes that my students became more involved with math, less scared of math and more motivated to do math. I also see that the peer leaders became more and more mature. They formed their own style of teaching/helping that will certainly benefit them in their career in the long run (most of them plan to be a math teacher after graduation). I truly hope that the peer leader program in our department will become a long lasting and powerful program which benefits our students today and tomorrow.

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