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**PLTL WITH A TWIST: PROMOTING STUDENT SUCCESS THROUGH ENHANCED  
UNDERSTANDING OF THE COURSE MATERIAL**

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Peer-Led Team Learning (PLTL) has proven effective in enhancing student performance in Freshman STEM courses. General Biology 1 is such a course with an average passing rate (C or above) of ~40% at the University of Houston Downtown (UHD) in the past few years. With the implementation of PLTL workshops in one General Biology 1 course, the success rate increased to 60% in the Fall of 2012 and 55.5% in the Spring of 2013. We believe that PLTL played a significant role in enhancing students' understanding of the course material. Therefore, the success is inseparable from the commitment and dedication of motivated Peer Leaders who have developed various strategies that benefited the General Biology 1 students by addressing their needs. Specifically, the risk factors affecting Biology students were assessed. In turn, workshop modules provided on the PLTLIS website ([www.pltlis.org](http://www.pltlis.org)) were updated and customized to fit the General Biology students' academic needs. Students who have attended PLTL sessions have acknowledged their effectiveness and enjoyed the activities presented. Lastly, activities and sessions have significantly contributed to the benefit and growth of personal and academic endeavors of the Peer Leaders as well.

Workshop Innovation

Students were introduced to different forms of workshop materials. These materials included group work, white board use, and flash cards (Dillenbourg, 1999). Competitive games were created to stimulate the group interaction and the understanding of the fundamentals of the course material. Flash cards were incorporated into the games in order to allow the students to effectively move around the room and pair into smaller groups. Students enjoyed the use of the many different types of games such as Jeopardy, Bingo, and Trivia. These games provided an easy and fun outlet for the students to enjoy and learn biology. Diagrams were always used to depict many different biological systems and examples (Quitadamo, Brahler, and Crouch, 2009).

Practice pop quizzes were not successfully integrated into the workshops since the students stated that they felt more pressured and insecure in the workshops. As seen in Figure 1, crossword puzzles were used to stimulate interactive discussions between students and to allow them to be able to individually come up with the answers to the activities.

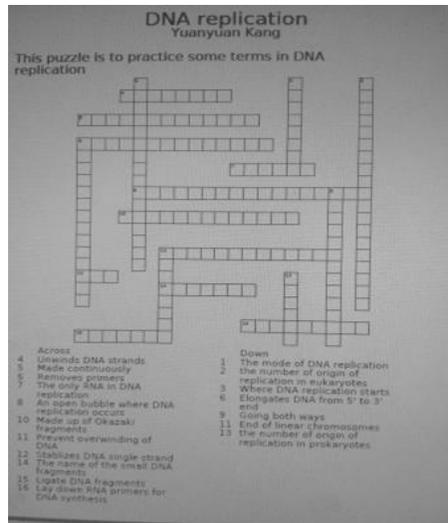


Figure 1: A crossword puzzle for DNA replication

### Leadership

During the course of the PLTL program, the Peer Leaders have developed interpersonal, intrapersonal, as well as communication skills. The Peer Leaders have developed better time management and organizing skills to accommodate themselves to the workshop planning and creation. The maintenance of the Peer Leaders' own course work and the conducting of the workshop were challenges that the Peer Leaders learned to overcome and embrace. In a beneficial way, the workshops have served the purpose of further reinforcing the fundamentals of biology into their own course work (Gokhale, 1995). Leadership skills have arisen through the hard work, preparation, and dedication that the Peer Leaders have put in to the sessions. Improvements in the Peer Leaders' own approach to peer leading has changed throughout the process of leading workshops.

### Experience and Exposure

PLTL has helped the peer leaders develop and grow into more capable and adept people who are able to deal with social interaction. Collaborative learning has helped the leaders apply their own knowledge and skills into helping others learn. Peer leaders have also introduced study skills that have made students successful as well as learn new skills along the way. Through more involvement in PLTL more enrichment to the Peer Leaders will result. As seen in Figures 2 and 3, the students and Peer Leaders interacted and became well acquainted which helped the students feel comfortable and be able to ask questions.

As one Peer Leader wrote, "My first semester as a Peer Leader started off slowly, but as soon as we understood where the students were with relation to the content, I was able to accommodate the sessions to best meet the needs of the group. At the end of the spring semester, I realized how much I contributed to the class success of the Biology section. The students felt so impacted and by my help and guidance that they threw a party to thank me."

## Higher Standards

During the course of having peer-led workshops, the students have been held to higher standards of learning and understanding through the discussion of content and course material. Workshop material was used to induce more forms of thorough and thoughtful discussion to understand the content material in a more profound way.



Figure 2: Peer Leader Elsy with her students after the party



Figure 3: Students taking initiative to teach each other in Shebna's Workshop

## References

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