Universal Design for Learning Peer Program: A Collaborative Learning Experience

Submitted by

Academic Success Programs

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Academic Success Programs' Universal Design for Learning
Peer Program: A Collaborative Learning Experience

Overview: Academic Success Programs (ASP) proposes the establishment of a collaborative learning, peer-led, small-group-tutoring program to increase retention and graduation rates for students in large UVM courses. Universal Design for Learning (UDL) serves as the center for this program in partnership with the College of Education and Social Services (CESS), the College of Arts and Sciences (CAS), the Center for Teaching and Learning (CTL), and ASP. As a collaborative learning initiative, this program uses UDL principles and the neuroscience of learning to foster students working together in study groups and study sessions managed by trained peer tutors to solve problems with their peers from diverse backgrounds, thus supporting UVM's retention and graduation rates (Kuh, 2008). Data collected on students who have used ASP's Tutoring Programs support this program request, since, on average, students who use peer tutoring are retained and graduate within four years at a higher rate than peers who do not use peer tutoring (See Appendix One).

This program will result in the implementation of: 1) faculty professional development activities designed to increase application of UDL principles within UVM courses; and 2) student-friendly study session supports based on UDL principles to heighten engagement of students inside and outside the classroom. Study sessions will provide interventions for students, such as study groups, active learner skills, goal setting, managing stress, and growth mindset training. This collaborative learning peer-tutor model could provide faculty future support for large courses.

Objectives for this project are:

1. To create a campus partnership among the departments of Human Development & Family Studies (HDFS), Economics (EC), and Physics (PHYS) with both CTL and ASP, in order to implement a collaborative learning, peer-led, group-tutoring approach grounded in UDL;
2. To select and train peer tutors to support mandatory study sessions for selected large

UVM courses, including supervision and evaluation of results (See Appendix Two);

3. To increase knowledge and use of UDL practices by faculty in selected courses;,

4. To compare the individual and combined effects of the faculty and peer interventions.

Significance: Students entering UVM discover that the college learning environment requires students to work independently and to embrace a growth mindset. Over the past two years, ASP's Tutoring Program provided small-group, mandatory recitations within targeted sections of CHEM 031 and ECON 011 to support this transition to college for first-year students. Group sessions guided by trained, more experienced peers allow students to converse about the material and practice explaining the concepts, which supports collaborative learning.

The first intervention occurred in Fall 2013 through the CHEM 31 Recitation Pilot program, which was funded by a generous donation from the family of a former student who benefited from ASP's services, the Guttman Family Fund. Approximately, 200 students, 90% of whom were first-year students, randomly enrolled in one section of CHEM 031 with peer tutors in small-group mandatory recitation sessions that met once a week. Results of this pilot showed that students in the recitation section had a DFW% of 21% performing better than students in the section without recitations who had a DFW% of 33%. 88.5% of the first-year students in the recitation section were retained for second year compared to the overall retention rate of 86.7% for this class.

In Fall 2014, we again tested the CHEM 031 pilot model with 400 first-year students. We did not find the same outcomes that we found the prior year. 100% of the students in the Fall 2014 sections were first-year students, which in hindsight may not have been helpful to student success. We need to see if retention rates hold in Fall 2015 for this group.

A similar recitation model to CHEM 31 was created for one section of ECON 11 in Fall 2014 taught by Professor Stephanie Sequino. Professor Sequino reported that students performed better than in the past even with more difficult exams. As a result, we have agreed to provide this

recitation model again in Spring 2016 for Prof. Sequino's ECON 11 section.

In Fall 2014, we also worked with Professor Lawrence Shelton's large Human Development course, HDFS 005. This course has 235 students and includes all first-year nursing students. Professor Shelton applies many UDL practices in the course, including review sessions and Graduate Teaching Fellow-led discussions. During the Fall semester, in a hybrid recitation model, ASP offered two group-study sessions a week led by two peer tutors. Students were required to attend four sessions for the semester to gain a series of points. Professor Shelton found he had fewer students coming to office hours and experiencing stress related to the acquisition of new material as a direct result of the peer intervention. In a student survey, 70% rated the Tutoring sessions Helpful or Very Helpful, and 12% rated them Unhelpful or Very Unhelpful, which were slightly below the survey results for the professor's review sessions.

It is within this context that UDL is the center of this project with a major focus on training students as peer tutors who then work with students in small-group study sessions to explore how they learn and to apply principles from the neuroscience of learning (See Appendix Three). By training peer tutors to work with undergraduate students in small-group settings, this program will demonstrate that peer-to-peer collaborative learning interventions are effective supports for college students (Zull, 2002). Zull explains that the ability of the brain to relate to others who are in the same developmental growth stages enhances the learning experience.

CTL's participation in this project fits its mission to advise faculty on designing inclusive learning environments with UDL, as a pedagogical strategy. Supporting faculty in this program aligns with CTL's mission to apply theory to teaching practice. CTL will provide individual faculty consultations, classroom teaching observations, and facilitate colleague group discussions.

Sustainability: By including all five partners in this project, we can use the data from this study to reallocate resources within ASP to impact the highest number of students. We know

from the CHEM 031 Pilot Project that students in the recitation sessions used group tutoring at a higher rate and individual tutoring at a lower rate than their peers. ASP can educate students through the UDL Peer Program to become comfortable with group tutoring, the most efficient form of tutoring we offer, which allows us to reallocate resources while focusing on collaborative learning experiences as a high-impact practice especially aimed at first-year students. As students move from a fixed mindset to a growth mindset and understand the importance of time on task, study groups will grow in popularity. In the future, ASP can also partner with faculty who teach large courses who use UTFs as a way to sustain this program. CTL's commitment to UDL faculty training is already part of their work and does not require additional funding for this project.

By focusing on faculty and student learning, this program presents a cost-effective support system for UVM faculty teaching large courses, while preparing students to work collaboratively. Our focus on UDL will also impact the area of disability services since fewer accommodations for students with disabilities are needed in classes that utilize UDL principles, which adds to the sustainability of this program (Schelly, Davies, & Spooner, 2011).

Evaluation: Formative data, such as from surveys, will be collected after each professional development session to document the quality of the trainings, as well as the impact on faculty members' ability to implement UDL practices. Survey data will be gathered from faculty on the impact of the professional development on their instruction and assessment. Survey data will also be collected from participating students and tutors to determine their engagement both inside and outside of the classroom. Summative data will include grades, retention, and drop-out statistics to examine the impact on the target groups and whether or not retention and graduation rates have increased. ASP believes the evaluation process will support collaborative learning through peer tutoring in small group settings as a high-impact practice that enhances student success.

Bibliography

Bongey, S. B. (2012). Evaluating Learning Management System (LMS)-facilitated Delivery of Universal Design for Learning (UDL) (Doctoral dissertation, UNIVERSITY OF MINNESOTA).

Bowen, W.G., Chingos, M.M., & McPherson, M.S. (2009). Helping Students Finish the 4-Year Run*. The Chronicle of Higher Education.* Retrieved from http://chronicle.com/article/Helping-Students-Finish-th/48239/.Dillman, D. (1999). *Mail and Internet Surveys: The Tailored Design Method*. 2nd edition. New York: John Wiley and Sons.

Bunce, D.M., and Sanger, M.J., (2008). Peer-Led Team Learning in General Chemistry: Implementation and Evaluation. Journal of Chemical Education, 85 (7), 990-996.

Davies, P. L., Schelly, C. L., & Spooner, C. L. (2013). Measuring the Effectiveness of Universal Design for Learning Intervention in Postsecondary Education. AHEAD Association on, 26(3),195.

Engle, J., Tinto, V. (2008). Moving Beyond Access: College Success for Low-Income, First-Generation Students. The Pell Institute, Washington, DC.

Field, S., Sarver, M.D., Shaw, S.F., (2003). Self-Determination: A Key to Success in Postsecondary Education for Students with Learning Disabilities*. Remedial and Special Education,* 24 (6) 339-349.

Grob, G.F. (2006). The Evaluator's Role in Policy Development. New Directions for Evaluation. 112: 99-108.

Izzo, M. V. (2012). Universal Design for Learning: Enhancing Achievement of Students with Disabilities. Procedia Computer Science, 14, 343-350.

Izzo, M., and Murray, A., (2003). Applying Universal Design for Learning Principles to Enhance Achievement of college Students. Learning Objects: Contexts and Connections, Version 1.1. Ohio State University.

Izzo, M., Murray, A., and Novak, J., (2008). The Faculty Perspective on Universal Design for Learning. Journal of Postsecondary Education and Disability, 21, 60-72.

Kahlenberg, R.D. (2010) Rewarding Strivers: Helping Low-Income Students Succeed in College. New York: The Century Foundation.

Krueger, R. & Casey M.A. (2000). Focus Groups: A Practical Guide for Applied Research. 3rd Edition. Sage Publishing, Thousand Oaks, CA.

Kuh, G.D*. (2008).* High impact educational practices: What they are, who has access to them, and why they matter. Retrieved from http://www.aacu.org/leap/hips on March 23, 2015.

Leonhardt, D., (2014). Is College Worth It? Clearly, New Data Say. *The New York Times.* Retrieved from http;//nyti.ms/1jUkmqC.

Lombardi, A., Gerdes, H., & Murray, C. (2011). Validating an assessment of individual actions, postsecondary, and social supports of college students with disabilities. *Journal of Student Affairs Research and Practice*, 48(1), 104-123.

Perry, R., Thomas, B., DuBois, E., & McGowan, B. (2006). A Utilization-Focused Approach to Evaluation by a Performance Audit Agency. New Directions for Evaluation. 112: 67-78.

Schelly, C. L., Davies, P. L., & Spooner, C. L. (2011). Student Perceptions of Faculty Implementation of Universal Design for Learning. *Journal of Postsecondary Education and Disability*, 24(1), 17-30.

Thomas, David R. (2006). A General Inductive Approach for Analyzing Qualitative Evaluation Data. American Journal of Evaluation. 27(2) 237-246.

Tough, P., (2014). Who Gets to Graduate?. *New York Times*. Retrieved from http://nyti.ms/1giJOoU.

Zull, J.E., (2002). The art of changing the brain: Exploring the practice of teaching by exploring the biology of learning. Sterling, VA: Stylus Publishing, LLC.

Appendix One: Four-Year Graduation and Retention Rates for Students Receiving Tutoring

Table One: Four-Year Graduation Rates for FTFY Receiving and Not Receiving Tutoring				
Student Category	**FTFY Cohort Entered Fall:**	**Number Entered**	**Number**	**Percent**
Tutoring Registered First Year	2006	160	110	68.8%
Tutoring Registered First Year	2007	180	117	65.0%
Tutoring Registered First Year	2008	207	134	64.7%
Tutoring Registered First Year	2009	687	480	69.9%
Tutoring Registered First Year	2010	527	326	61.9%
All FTFY Students	2006	2190	1419	64.8%
All FTFY Students	2007	2450	1578	64.4%
All FTFY Students	2008	2468	1613	65.4%
All FTFY Students	2009	2619	1736	66.3%
All FTFY Students	2010	2472	1525	61.7%

Table Two: Retention Rates (Returned After First Year) for FTFY Receiving and Not Receiving Tutoring				
Student Category	**FTFY Cohort Entered Fall:**	**Number Entered**	**Number**	**Percent**
Tutoring Registered First Year	2009	687	607	88.4%
Tutoring Registered First Year	2010	527	451	85.6%
Tutoring Registered First Year	2011	650	561	86.3%
Tutoring Registered First Year	2012	757	664	87.7%
Tutoring Registered First Year	2013	1549	1335	86.2%
All FTFY Students	2009	2619	2276	86.9%
All FTFY Students	2010	2472	2104	85.1%
All FTFY Students	2011	2423	2062	85.1%
All FTFY Students	2012	2372	2028	85.5%
All FTFY Students	2013	2495	2166	86.8%

APPENDIX Two: UDL Peer Program Student Interventions for Study Sessions

Table 2: UDL Peer Program Student Interventions

UDL Intervention	Activities to Support Intervention	Neural Network/UDL Principle		
		Recognition-Representation	Strategic-Expression	Affective Engagement
Goal Setting Plan	Types of Goals; Explain SMART Goals; Managing Time through Goals, Strategies to accomplish Goals		X	X
Study Groups	Study Group Systems		X	X
Brain-based Learning Strategies	Brain-Network Systems; Application of Brain Research to Learning	X		
Role of Active Learner	Introduction of Study Systems and Learning Strategies; Learning to Use all of One's Senses when Learning; Understanding the Importance of Patterns on Learning; Ways to Increase Attention	X	X	X
Importance of Prior Knowledge	Links to How the Brain Works	X		
Note-taking Strategies	Instruction on Note-taking Systems; Sharing	X	X	
Time Management Strategies	Tracking Syllabi on One's Calendar; Sending Prompts to Cell Phones		X	X
Strategies to Improve Memory	Recall Strategies; Importance of Spacing; Speaking What One Learns; Understanding the Need to Elaborate on Information	X	X	
Use of Flashcards	Explore Online Flashcard Systems	X	X	
Importance of Sleep	Impact of Sleep on the Brain, Memory, & Comprehension	X	X	X
Importance of Exercise & Nutrition	How Exercise & Nutrition Impact Learning & the Brain		X	X
Mindset Interventions	Understanding Growth versus Fixed Mindsets; Strategies to Use Growth Mindsets; Explore Attitudes toward Challenges, Obstacles, Effort, and Criticism; Developing a Sense of Belonging; Understanding Learning and the Brain	X		X
Technology Supports	Introduction of Read & Write Gold; Assistive Technology to Study	X	X	
Mindfulness Training	How to meditate; How to Quiet the Mind			X
Self-advocacy Skills	Goal-setting training; How to be Assertive		X	

APPENDIX Three: Peer-Tutoring Training Module for 20 hours

Table 1: UDL Peer-Tutor Training				
Topic	**Activities to Support Intervention**	**Neural Network/UDL Principle**		
		Recognition/ Representation	**Strategic Expression**	**Affective/ Engagement**
Neuroscience of Learning	Understanding the Brain and Learning; Importance of sleep, exercise, and diet	X		
UDL Principles	Knowing the 3 Networks	X	X	X
Case Studies	How to intervene with peers		X	X
Motivating Peers	How to increase motivation; how to support self-advocacy skills			X
Learning Skills Strategies	Active Learners; Note-taking & Time Management	X	X	X
Memory	Applying Memory Strategies	X	X	
Peer Tutoring Principles	How to lead an effective group and individual peer-tutoring session		X	X