

2018 Innovation Mini-Grant – FINAL REPORTING



This form is required for your Innovation Mini-Grant. Please feel free to add any attachments regarding your project. Photos and videos are especially welcome. If you have any questions, or need any help completing this form, please contact Amy Schutter, Director of Grant Development, at 242-7713 or aschutter@shastacollege.edu. Please submit this completed form to the Office of Grant Development no later than **March 31, 2020**.

Thank you for your support and dedication to innovation at Shasta College!

Project:	Class Set of Tablets to Improve Student Engagement and Learning	Grant No.:	18MG-14
Grantee(s):	Mark Blaser, Tim Shelton, Matt Evans, Rebecca Osborne, Jessica Tyson		

Section 1: Narrative

1. What were the key activities of this grant?

Using a class set of tablets to provide a more interactive learning experience for students in biology, chemistry, and anatomy courses. This was accomplished through the use of simulations, educational applications, molecular modeling, and student response technology for answering problems in-class.

2. What aspects of the activities and/or grant were successful?

The tablets have been extensively used in multiple chemistry classes (primarily CHEM 1A, CHEM 2A, and CHEM 1B) throughout the duration of the project. The tablets have been used by students in these classes frequently (often daily and almost always at least weekly) for science simulations (e.g. phet.colorado.edu/), problem solving in-class (learningcatalytics.com, chem101.co), modeling chemical compounds for more effective visualization (<http://molview.org/>), to view lab experiments and record data, and to provide students who have limited or no access to technology an equitable experience in classes that use (and require) this modern technology. As the project has progressed, we have found more ways to use the tablets to facilitate and enhance instruction, and have continually increased their usage.

In Human Anatomy the iPads and associated apps such as Human Anatomy Atlas 2019, Muscle System Pro III, and Essential Skeleton were utilized during lab periods. Students used the iPads for references when identifying skeletal structures and during dissections as an additional resource to identify cat organs and muscles (using Canvas posted materials and website links). The use of these apps in lab gave students a chance to have a trial run of the more expensive apps to determine if they would like to purchase them, while allowing access to the technology to those who would otherwise be unable to due to lack of funds for their own tablet.

Feedback from students has been very positive throughout the project, with students indicating they have enjoyed engaging with the tablet-based learning activities and have found them to be beneficial, and instructors' observations indicate high student engagement during these activities. Additionally, this project has enabled a significant number of students to participate in these activities when they would otherwise not be able to (due to the lack of a tablet or computer of their own).

3. How was/is this grant beneficial to Shasta College students?

This project provided hundreds of Shasta College chemistry students with the means to interact with a variety of technology-enhanced learning activities, which we know increased student engagement with the course material and we believe led to improved learning outcomes and course success. These activities allowed students to explore and investigate many challenging chemical concepts and types of problems, such as particulate level behavior and interactions, emission spectra, molecular geometry and polarity, reaction dynamics, and much more. Science simulations give students the ability to visualize chemical and physical phenomena in a way that cannot be done with traditional instructional methods, and virtual laboratories let students perform experiments quickly and safely, without using resources or having to worry about chemical disposal.

4. What aspects of the activities/and/or grant were challenging?

As noted in the Mid-Cycle Report, it was a significant challenge to make sure the tablets were purchased in a timely manner.

5. What, if anything, would you do differently if you could do this over again?

We could have used a larger budget for software, and it would have been useful to also have detachable keyboards and styluses (stylus?) for the tablets.

6. Please provide any data you have obtained regarding this project, whether reflecting success or otherwise. (Consult the Research Office if you need assistance with data collection.)

During each semesters during this project, we estimate over 3000 distinct instances of chemistry students using an iPad for a learning activity (e.g. one Chem 1A class: 75 students/week x 1 use/week x 17 weeks/semester = 1275 instances for one Chem 1A class).

(More detailed data has been collected on the amount and frequency of student use, but is currently unavailable due to restrictions on accessing the campus.)

7. If this project is scalable, please describe the method by which scaling up could take place, and which areas might benefit from lessons learned through this project.

If/when we return to face-to-face instruction, this project could very easily be scaled to use in other STEM classes, as well as just about any other discipline. Instructors who participated in this project could then provide insights into the types of learning activities that were most productive in terms of student engagement and learning.

Section 2: Demographics

Please complete the following table which tells Shasta College about who you served with this grant.

Category	Unduplicated Number Directly Served	Unduplicated Number Indirectly Served (estimated)	Notes
SC Faculty	5	None	
SC Students	1000 - 1500	None	
SC Campus (in General)	Same as above	None	
Other Constituents	NA	NA	

Section 3: Project Expenditures

Attach a copy of the completed 2018 Approved Innovation Mini-Grant Budget Worksheet

Photos of students using tablets





2018 APPROVED INNOVATION MINI-GRANT BUDGET WORKSHEET –Augmented 6/11/19

PROJECT NAME: Class Set of Tablets to Improve Student Engagement and Learning (SLAM)					
BUDGET ITEM	DESCRIPTION	APPROVED BUDGET	EXPENSES 7/1/18 - 2/28/19	EXPENSES 3/1/19 - 2/29/20	BALANCE
PERSONNEL /BENEFITS					
Faculty Professional Expert \$50/hr					
Associated Benefits = 9.609% multiplied by Faculty Professional Expert Costs					
Faculty Stipend (STRS applicable work, all other work paid as Faculty Professional Expert)					
Associated Benefits = 26.28% multiplied by Stipend Amount					
Temporary Employee (Non-Bargained Classified Work)					
Associated Benefits = 9.609% multiplied by Temp. Employee Costs					
Student Worker Costs					
Associated Benefits = 1.809% multiplied by Student Worker Costs					
Contracted Work		\$0.00	NA	NA	NA
SUPPLIES					
Bookstore Vouchers					
Textbooks					
Printing					
Supplies & Materials	Laptop cases	\$1,166.00	\$1,165.16		\$0.84
Event Refreshments					
Capital Outlay					
Equipment(\$0-\$4,999.00) Not Tagged	32 Apple iPad 9.4" 128GB (or similar Android) and 1 Charging and Security cart	\$15,302.00	\$15,301.51		\$0.49
Equipment(\$5000.00 or greater)Tagged					
TRAVEL					
Transportation -Student Field Trips					
Field Trip Expenses					
OTHER					
Software	Chemistry and Biology Software & Apps	\$2,850.00	\$439.94		\$2,410.06
Software	CA. Recycle Fee for iPads	\$0.00	NA	NA	NA
Software	AirWatch MDM Device License Plus AirWatch MDM Annual Subscription	\$1,214.00	\$1,214.00	NA	\$0.00
TOTALS		\$20,532.00	\$18,120.61	\$	\$2,411.39