

# The LEAD iPad project



Collaborative for Teaching Innovation

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# The LEAD Project: Using iPads to enhance teaching and learning

## Introduction

The LEAD program (Leadership Excellence and Academic Development) at SCU is a four-year program for first generation college students focused on academics, community engagement, and service. In their first year, LEAD students take a two-quarter seminar dedicated to building community, strengthening personal development, and exploring leadership and career opportunities on campus and in the community. Since 2012-13, as a supplement to the successful high impact program, LEAD faculty and students have participated in a pilot project in which the use of mobile technology was intentionally incorporated into the LEAD courses.

The pilot has explored the challenges, benefits, and learning process involved for both faculty and students as they integrate mobile technology into their teaching and learning.

In order to understand how the iPads were being used, we conducted periodic surveys with the LEAD students and surveys or interviews with the faculty.

## Findings: Students' use of the iPads

In 2012-13, when the LEAD students entered Santa Clara, they were already quite digitally connected and using basic educational technology to meet their educational goals. Nearly all had regular access to computers (92 percent) and phones with Internet browsing capabilities (73 percent). Only about 14 percent, however, had previous access to iPads. We did not repeat this measure in 2013-14, but it is reasonable to assume similar levels of access.

### **A resource for developing critical information processing and learning skills.**

With the iPads, LEAD students had access to a set of note taking and annotation tools that helped them develop critical information processing and learning skills. On a six-point scale ranging from “extremely helpful” to “extremely unhelpful,” students rated the value of the iPad for their learning. The following chart shows the evolution of use for first-year students during the Fall and Winter quarters in 2012-13 and after just one quarter of use in Winter, 2013-14.

Value of the iPads for	November 2012-13		February 2012-13		January 2013-14	
	Very Helpful	Extremely Helpful	Very Helpful	Extremely Helpful	Very Helpful	Extremely Helpful
Annotating texts	25	38	20	71	14	74
Notetaking	39	33	23	52	25	51
Taking photos of notes on board	35	43	22	55	25	53
Reviewing hand-outs	46	15	26	46	25	49
Brainstorming activities	23	13	23	22	20	37
Collaborative Writing	33	19	29	25	20	41
In-class research	45	41	34	52	20	39
Individual Writing	14	14	23	26	27	41

Several points are worth noting:

- Students develop some of these skills over time and as they do, the value they ascribe to the activity increases.
- The iPad is particularly useful in support of note taking and hand-out review, annotation, and conducting in-class research.

### **Communication**

Notably, the iPads allowed for easy access to email, a factor that seems to contribute to frequent staying in touch with faculty and peers. In 2013-14, 74% agree the iPad helps them stay in touch with professors, 77% with other students within LEAD, and 60% with other SCU students.

### **Pursuit of personal and vocational development**

In the LEAD seminars, students were introduced to various applications for helping them with planning (e.g., a calendar), exploring vocation, and tracking health and nutrition (only introduced in the seminar in 2012-13). While this use of the iPad was not consistent across all quarters or years, about half the students rated found the applications personally helpful.

### In their own words

We were interested in hearing directly from students about their experiences with the iPads. We included several open-ended questions in the survey about ways in which iPads were useful in their LEAD classes and in other classes, and any recommendations to improve the way they were integrated into their classes.



### Value of iPads in LEAD classes

Students' responses about the value of the iPads in their LEAD classes reinforce and extend the results reported above, making clear that the iPads are being used in a versatile manner and are a tool for independent learning and collaborative learning. Representative comments over the two years include:

I liked taking notes and using it to collaborate with my classmates.

Being able to use iPads to bring relevant information to discussion.

The note-taking app Notability [is useful] because it lets me annotate essays and write up ideas. Also the mobility of the iPad in general is very useful, can take it anywhere for information on the go.

Being able to project our notes onto the boards for other students to see and correct. Being able to take notes and insert pictures of the board or slides so easily. Being able to send the notes or essays that need to be peer reviewed. Being able to follow along with the professor on the iPad and being able to access the same site. Being able to do research in class and work on collaborative work.

I liked being able to follow along with class presentations on the iPad.

It has been very useful when doing my assignments for LEAD CTW because I can be writing my assignment while I look back to my annotations and have access to search the web to better understand the assignment.

### Value of iPads beyond LEAD classes

The responses to another question reveal that students made use of the iPads to facilitate organizing their time and for their learning in classes beyond CTW and their LEAD seminar. A number of the students emphasized the portability and multiple functions of the iPad, and even the value of the iPad in support of sustainability. Typical comments include:

The Calendar app really helped inside and outside of class by keeping me on track with what I had to do. It helped me prioritize.

The instant email access. Also the calendar and photo and video features helped in my other classes for note taking.

I used my iPad to take notes in Physics to save paper. It works quite well in that I can customize my notes without having to use colored pencils/pens and just switch colors in Notability.

[The iPad] gave me a device where I can take really organized notes and start on work immediately. It's not so heavy so I am not making the choice of what to take and what to leave behind as much. It enabled me to be able to stay organized and check on assignments quickly to be able to plan out my day or week, or even the quarter.

[iPad is useful] to email professors, look at the work that was assigned and use programs to help me with my homework.

It made reading somewhat fun now. I could annotate by just touching the screen.

### Student Recommendations for iPad Use

Over the past two years, most students expressed satisfaction with the way the iPads were used in their LEAD courses. Some asked for more opportunities to integrate them into class and to learn to use them in new ways. In 2013-14, one student suggested greater use of its “research capabilities,” while another suggested use in “more original ways” and that it be “incorporated in more engaging manners than projects.”

In both years, some students directly asserted that the iPads sometimes are a distraction. However, we saw the number of students agreeing with the statement, “The iPad is often a distraction in class” decline between 2012-13 and 2013-14. In 2012-13, 24 percent agreed “a little” with this statement and 19 percent “somewhat agreed, and 3 percent “strongly agreed.” In 2013-14, about one-third in all (13% fewer than 2012-13) agreed that the iPad is often a distraction in class suggesting the faculty and/or the students are learning how to minimize the more distracting uses through restrictions on their use or internalizing new norms.

### Comparing Across Groups: First-year LEAD Scholars compared to their counterparts

We compared 49 LEAD scholars and 35 first-generation/first-year students. Significant differences were found between the two groups on a number of their perceptions about the role of educational technology in their learning at SCU. The table below shows that the LEAD scholars were much more likely to strongly agree (on a 4-point scale) that educational technology had benefited their learning experience.

Question	January 2014	
	LEAD	Non-LEAD
Role of educational technology in learning at SCU		
Made it easier to work with other students	3.45	3.00
Helped me complete assignments on time	3.49	3.09
Helped me be more efficient with my studies	3.35	2.97
Ed tech has helped me learn	3.57	3.15
Advantages of ed tech outweigh disadvantages	3.52	3.00
Ed tech has made my education more affordable	3.21	2.77
Access to the Internet in class helped me learn class material	3.38	3.00
Able to engage in vocational exploration using ed tech	3.24	2.90
Helped me succeed in my coursework	3.35	3.06 <sup>a</sup>

Note: All differences except the last item are significant at the .05 level or lower. Superscript ‘a’ indicates a probability level of .06.

### The iPads from a faculty perspective

Six faculty members in 2012-13 and seven faculty in 2013-14 were engaged in the iPad pilot, teaching either CTW or the LEAD seminar. In 2013-14 five of the seven were faculty who taught in CTW or LEAD seminar the year before. Initially, no faculty had experience teaching with the iPads, so they too faced a learning curve and engaged in considerable exploration of the iPad and its relevant applications for learning.

For the most part, the faculty’s sense of how the iPads had engaged students echoed the students’ observations. One faculty member noted that the iPad particularly helpful for peer review: “... from my observations, students seem to read and comment much more than if they read a hard copy of an essay. That sounds bizarre, but being able to make notes in the margins using one of the apps ‘makes it kind of fun,’ to quote a student. [In addition] [R]esearching an idea or a question in the middle of a discussion, which leads to discussions about evaluating sources.” This



last comment underscores the multiple learning opportunities afforded by the iPad—in this case, an “on the spot” lesson about critically assessing sources.

Using the iPad to connect in class with the Learning Management System offered more opportunities for communication and collaboration. One appreciated that iPads afforded students a level technological playing field: “[I] liked that all students had the iPad, there was never a question of what they could/couldn’t do in class because everyone had the same equipment. In other classes, students had devices—either phones or laptops but maybe not all of them and devices could be more limited.”

Faculty reflected on “lessons learned” over the course of the two years. Because all students had iPads, the faculty were able to build a variety of learning activities into the courses knowing that all students would have access to the Internet and relevant applications. Faculty observed that students gained proficiency and depth in their ability to critically read and annotate texts, and enjoyed the “anytime,” “anywhere” ability to read and write on the iPad. The iPads were not the only tool many students used, however. Especially, in year two of the project, the second quarter faculty noted that some students were bringing laptops to class rather than the iPad.

## Conclusion

The research to date on the iPad LEAD project shows that students have embraced the educational applications of the iPads and used them to enhance their course-based learning and to develop a set of essential skills that promote deep learning (learning that emphasizes critical analysis of ideas, linkages across concepts and learning experiences, leading to understanding and long-term retention of concepts). The comparison of current LEAD students with a comparison group of other first generational college students underscores the important role the iPad has played in facilitating collaborative work and learning

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<sup>1</sup> Students from the Senior Capstone for Applied Sociology, in conjunction with Professor Laura Nichols, led this research effort which also included resurveying second-year LEAD students (who had received iPads during their first year) and a comparison group of first generation college students (including first and second year students) who were not part of the LEAD program. This allowed three other comparisons: 1) a comparison between first-year LEAD students who had received iPads and similar students who had not received iPads; 2) a comparison of second-year LEAD students with a similar cohort; and 3) a comparison of the 2012-13 with 2013-14 LEAD cohorts. This report includes the comparison of first year LEAD scholars and their non-LEAD counterparts