

CASSL Innovation Grant Results and Reflections: Spring 2010

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Project Goal:

The goal of this project was to study the possibility of using clickers as a technological tool to enhance student engagement. We were prompted to conduct this study because of the student disconnect sometimes observed over the course of a lecture class despite attempts to include individuals in discussion. We thought that a study of clickers as a new and interesting technology would benefit our department and the students as a potential tool for engagement.

The concerns with the use of clickers addressed included the effectiveness of clickers as a tool for student engagement, evaluating what courses this technology would be appropriate for, and becoming familiar with the capabilities of the technology. There were also many other questions that required answers prior to the adoption of the technology, many of a practical nature such as cost, availability and ease of use.

Methods or Tools Used to Study the Problem:

- a. We monitored our own lecture courses (ANTH 300 and ANTH 310) for class participation and evaluated correlations present in student success rates based on engagement through discussion and other means of individual and group interaction.
- b. We interviewed and discussed the use of clickers and their relationship to student success with other college instructors from various institutions.
- c. We observed classes held by one of our contacts using clickers in the classroom to see how the instructors and students used these tools, and what the levels of student engagement are.
- d. We assessed the cost implications of the technology and determine the feasibility of student access.
- e. We attended a conference for the Society for Anthropology in Community Colleges and provided surveys to members of the conference and collected the data.
- f. We sent out brief surveys via e-mail to the CRC faculty to establish familiarity and interest in clickers within in campus and evaluated the results.
- g. As of this time, we have not had a demonstration provided to us by a specific vendor. A demonstration will be held over the summer by a vendor. This will be completed prior to the implementation of the clickers. Because we have observed two specific brands of clickers in classroom settings, we do not believe that this will be a factor in the outcome of this study.

RESULTS:

This project gave us the opportunity to investigate the use of Clickers as a classroom teaching tool. We learned a great deal about the potential use of clickers in the classroom, their impact on student success and general opinions of the use of clickers in the classroom.

The results of our survey taken at the Society for Anthropology in Community Colleges annual meeting in mid March revealed that many community college anthropology faculty members have heard of clickers, and half noted that they would like to use clickers. The other half of the respondents had strong opinions about why they would not adopt clickers, such as “I would prefer to teach students to voice their opinion”, “I haven’t the foggiest idea what they are and I’m an orthodox Luddite!” and “Small classes, cost, also can use colored blocks of paper for multiple choice question”. Clearly, cost, the question of adopting technology at the expense of other types of classroom interaction, and the burden of the instructor to learn a new gadget weighed heavily on these respondents’ minds. These issues came up in other areas of our research.

A brief survey regarding clickers was also sent out via e-mail to faculty within CRC to examine interest within the college. We received responses from eighty individuals, but only one of them had previously used clickers during instruction. This one individual was interviewed as explained below. We found that about two thirds of the faculty at CRC who responded to the survey expressed interest in learning more about the technology and how it could be used as a teaching tool. We also found that there are still a significant number of people who have not been exposed to what clickers actually are, and even received two comments in which people assumed that they were tools for training dogs (which they are in some capacities, just not this one). The same concerns were expressed by many people as they were in our previous survey, including issues such as the cost to the students and the learning curve of the technology.

Our interviews with Clicker users provided overwhelmingly positive feedback. Our interviews with two faculty members in History and one faculty member in Anthropology from SCC provided rave reviews of their adoption of clickers. In fact, we learned from these individuals that there had been a campus committee convened to investigate the use of clickers, survey manufacturers and create cost/feature comparisons, and recommend a clicker company for SCC to adopt across the campus a few years ago. FLC has also done a similar thing, ultimately recommending a standard clicker for faculty adoption. Both colleges use “I-Clicker”, which is the company we have decided to adopt as well.

One faculty member in the Anthropology department at UC Davis has used clickers in the past, but does not currently use clickers. Since he teaches courses dealing with issues of sexuality, he liked the ability to ask questions in class that many students might feel comfortable answering if other students could see their answers (i.e. Have you been involved in a threesome?), but has decided to not adopt them primarily due to the burden of an extra cost for the students and in many of his courses he could not justify the cost for the benefit.

Another professor of Anthropology at Sierra College uses clickers in all of her courses, and has used them for several years. She said that she currently owns a class set, to get around the cost issue for the students. Each student is handed a clicker when they arrive, and they turn it back in at the end of the each class session. She noted that she often felt guilty when she had students purchase their clickers, and

then did not use them in one or two class sessions. She finds that the students enjoy using them, and that their success in her course has gone up.

A professor of Economics within the LRCCD we interviewed has had a similar experience as the previous faculty member. He also has purchased a class set, and assigns students a clicker, that they use each class session. He too has noticed an increase in student success since he first started using clickers several years ago. He is also excited with the possibilities of data analysis on student success and SLO assessment that are made possible by the use of clickers.

Our review of the literature on clickers is overwhelmingly positive. We did not find any articles that discussed the negatives of clicker adoption. This did raise flags for us. We did wonder if faculty such as those who had used them previously but decided to not re-adopt, had been included in all of the surveys sent to individuals who used the devices. Despite this, the results were impressive. Faculty who performed quantitative studies found that on average their students enrolled in clicker sections had test scores or final grades that were 10% higher than over students enrolled in non-clicker classes (Ohio State University 2008).

Overall, we have learned more information than we could possibly present in this short report. We can group our new knowledge into several areas: uses of clickers, student engagement, who adopts clickers, and potential issues surrounding clickers. We learned that clickers have great potential, and can be used for a variety of different things in the classroom. Of course, they can be used to quiz students on retention of material, but they can also be used to take attendance (as each clicker is registered to an individual user), and they can be used for SLO assessment (either with a pre/post quiz, or testing individual objectives and tallying student responses). While we were unable to observe one individual use his clickers in this fashion, we were told about his use of clickers to promote higher level thought, such as critical thinking questions and group work. We were struck by how another faculty member had used clickers, and thought that his asking of sensitive type questions through the clicker would open up many more conversations that we are not currently having in our classroom due to privacy issues. Just as online discussion boards provide a veil of anonymity, so too can clickers. We also learned that while the initial adoption of clicker use in the classroom might be slow, it is best to utilize the clickers in every class session, so that students are invested in the technology and do not feel as though it is a waste of their money. We also learned that clickers can be integrated or not integrated into lectures. There is a flexibility to the system that were unaware of. We observed clickers being used where questions were incorporated into a structured, organized lecture, as well as one in which the questions came off the cuff, with less structure.

Student engagement generally increases when clickers are used, or at least that is what our research including reading and observations concluded. However, several instructors told us that student participation often ebbed and flowed through the semester, just as classroom participation often does in a traditional classroom. Clearly, while clickers can help to increase participation, they are not the magic cure-all for all student participation problems.

Adoption of clickers appears to be by those who are comfortable with technology, and by those who already use a variety of media or technology in their classroom. Our survey results supports this, as many attendees of the conference did not return a survey, but told us personally that they had “no idea” what clickers were and had no desire to learn about them. In later sessions of the conference, these same

people identified themselves as “luddites”. It appears to us that more than likely, younger faculty, or faculty who are already innovative in the area of technology in the classroom will be the ones who adopt clickers. There is a steep learning curve when clickers are first adopted (need to learn the software and write questions for the clickers), and unless the faculty member is comfortable with adopting new technology, this might appear rather daunting. Adopting clickers requires the instructor to tackle a new pedagogical toolkit.

As mentioned in several areas already, this is not a cure-all invention. All the problems of a classroom - poor classroom management and instruction will not be erased by the adoption of the clickers. We read over and over that technology (not strictly limited to clickers) is only as good as the instructor who adopts it. Time, effort, training and proper implementation are needed in order for this to become an effective teaching tool. Without these things, clickers will just become another device or resource that will gather dust on the student’s desk, and will undermine those who attempt to effectively incorporate it into their classrooms. We also realized while combing through the literature that clickers seem to be “tailor-made” for certain disciplines. The literature centered on clickers being used in the sciences or social sciences, and primarily by faculty teaching larger, survey style courses.

Some survey participants, as well as our own musings, left us with issues surrounding a possible philosophical debate concerning clickers. While the anonymity of responders was pointed out before as a positive, an integrity issue surfaced almost immediately after—clickers can be given to friends, and if an instructor is taking attendance in a large lecture course, a friend could simply “vote” for their absent friend. As already mentioned, there is the current divide between instructors seeing clickers as a way to increase student participation and those who feel that clickers will actually decrease student engagement. This goes hand and hand with the other issue: if we adopt clickers, are we actually using them because they are a thoughtful, effective teaching instrument, or are we hoping that by assigning a student to use a gadget in class, that they will be more engaged and be more invested in this course, as it is relating to them as a member of the tech-savvy generation?

PLANNED IMPLEMENTATION:

As noted in our original project proposal, we said that if our project resulted in positive results for clickers, then we would adopt them in our ANTH 300 (Physical Anthropology) classes. We have adopted clickers for the Fall 2010 term. We will investigate if clickers are appropriate in other Anthropology courses after a semester of trial use. We are still unsure if adopting clickers would be beneficial to our smaller, discussion based courses. We also realize, after talking with our colleagues at SCC, that CRC should have some formal discussions about clickers and choose a provider to be the campus standard. While we would recommend “I-Clicker” due to cost effectiveness, ease of use, and the fact that two of our sister colleges have already adopted “I-Clicker” as their standard (with students cross-enrolled at several colleges, it seems wasteful for each campus to have its own clicker standard), we would support the college’s decision. To facilitate this action, we have contacted the DEIT committee, and chairperson Greg Beyrer has asked us to submit a copy of this report to his committee upon its completion, and to give a short presentation in Spring 2011 (after a semester of use) on our experiences with clickers in the classroom to his committee. Further, we anticipate holding a flex workshop (Spring 2011 or Fall 2011) on

using clickers in the classroom, and would be open to holding training sessions or providing individual help to faculty choosing to adopt clickers in their classrooms.

BROADER IMPLICATIONS:

Overall, we are excited about clickers and have high expectations for our courses in the fall when we officially begin using them. We are impressed with the amount of positive research and overwhelmingly positive testimonials we have encountered. However, we still have several lingering questions. Primarily, we are concerned about access. For example, students who use the Lending Library for their textbooks, or who do not purchase a textbook, but use the library reserve edition---what will happen to these students if clickers are a required component of the class? Will they be able to purchase clickers separately from the bookstore? Will the Lending Library check out clickers along with the books? Would it be better for our department to purchase a class set, rather than make each student purchase their own device? Many of these questions will likely get answered through observation of our first semester of trial by fire. Many more questions will likely arise at that point too! Perhaps even some of these questions would likely be a moot point if larger campus wide discussions were held concerning clickers—standardized adoption, discussions with student support services on the role of clickers and how they can support the students, etc. Time will tell.