Clicker Evaluation Report
Student Response System Replacement
Center for Teaching and Learning (CTL), University of North Carolina at Charlotte

Summary:
Within the instructional community of the university, the use of a student response system (currently Turning Technologies' Clickers) supports the pedagogical needs of medium to large courses. Though 8% of the 1,550 faculty use clickers for assessment, critical thinking, and active learning activities, approximately 30% of the nearly 28,000 students utilize clickers in a range of courses from engineering, liberal arts studies, and computer science, among a few. For these courses, clickers play a vital role in providing students a medium to respond to polling questions, which provides faculty with an awareness of the progress of their students, and ensuring strong transfer of knowledge of the course content.

Our students require a student response system that is reliable, consistent, and supportive of the growth of our university. Our evaluation criteria included cost, ease of use, product stability, low teaching and learning support experiences, learning management system integration, vendor support, reporting capabilities, ADA compliance, low learning curve, data security, data reporting, browser and device consistency, FERPA compliance, cross-platform support, and pedagogical advantages. One proposal of the student response system was to identify a means of reducing the cost to students or instructors, thus giving full access to the product. The aim of this proposal was to address the increased cost burden on our students in light of increasing cost of books and other educational resources.

In fall 2016, a faculty clicker evaluation committee (under the auspices of the Center for Teaching and Learning, CTL) was created to engage in exploratory research to agree on the main criteria of a student response system and to investigate both the existing vendor as well as other vendors in the marketplace. The faculty committee mandate was to explore the technology, cost, and services, and to determine whether to stay or advocate for a change in the present student response system. Four vendors were narrowed down from a list of eight to demonstrate their product towards making a decision.

Committee Members:
- At least two faculty/staff members from each college
- 2 representatives from IT Services
- 1 representative each from administrative units that use clickers
- A representative from Purchasing
- 1 representative from Classroom Support
- 1 representative from Disability Services
- At least 2 members from the SGA, and
- three representatives (non-voting) from the CTL

Faculty Evaluation Committee Mandate:
To convene an evaluation committee comprised of faculty, staff, and students to engage in a number of investigative and exploratory tasks. The mission of the committee is to determine whether our current student response system supports the diverse instructional needs of our campus or if we should consider alternatives/other vendors. As our present student response solution has been in place for over 6 years, we believe this time offers the campus the best opportunity to review the technology, the support, and the cost to our students. The recommendation of the committee is to advocate if a change is deemed necessary, that this occur in the next academic year from when the decision was taken. If the decision is to stay, then the committee will advocate for changes to strengthen the process and the tool.

Evaluation Assessment:
Both students and instructors were asked to complete an online survey concerning their experiences using the present Turning Technologies' clicker system. While the overall responses for the system was positive, data showed that students and instructors indicated a desire to review other technology to address main points of concern. These concerns covered ease of use, product stability, low teaching and learning support experiences, learning management system integration, vendor support, reporting capabilities, low learning curve, data reporting, ADA compliancy, browser and device consistency, data security, FERPA compliance, cross-platform support, and pedagogical advantages. Cost was the overall concern based on responses from students and instructors.

As the committee evaluated clicker usage and choices, they were guided not only by ease of use and cost to the students, but also by the following requirements:

- Cost to the university
- Process of integrating grades
- Faculty needs regarding response applications in the classroom
- Instructional Considerations
- Accessibility
- Impact on Network (Wi-Fi and Radio-signals)
- Options: LMS Integration, Device, and Mobile App
- Usage requirements (device, network, classroom)
- Clicker Device and Apps (mobile/web)
- Vendors (demo presentations)
- Technical Support (internal and external)
- Review clicker usage at other universities
- Timeline for change or no-change decision: End of fall 2016
- If change, implement new system by Fall 2017

The committee members represented a wide cross-section of colleges and departments who have effectively used Turning Technologies' clicker system in their teaching in the classroom and in presentations and workshops. Being on the committee allowed each college, departments, and administrative units to have a voice in the evaluation of the technology. Group members were encouraged to share all information back to their colleges and units for additional discussion.

Findings:
Four vendors were invited to demonstrate their student response or polling system to the faculty evaluation committee. The four vendors were Turning Technology, i>clickers, Top Hat, and Poll Everywhere. Of the four vendors Poll Everywhere only had an app/mobile polling system; the rest offered both clicker device and app/mobile polling systems. The committee was able to compare the process of each of the respective systems and the integration to our learning management system, namely Canvas. Committee members asked questions based on their present use of the clicker device to compare strengths and weaknesses of the vendor systems. At the end of each vendor demonstration, committee members completed a scorecard (Rating: Very Dissatisfied to Very Satisfied) based on four main criteria for each student response systems. The main criteria were:
- Overall look and feel
- Ease of use
- Flexibility, and
- Features.

An open-ended question survey was also completed by members to provide the pros and cons of each demonstrated system. The final data from each survey was compiled to create a weighted vendor ratings based on the faculty committee feedback. Based on the weighted vendor ratings, the top two vendors identified were i>clicker and Poll Everywhere.

Cost:
The four vendors provided cost structures based on two scenarios. One scenario provided costing based on students being responsible for the full cost of purchasing a clicker device and/or a app/mobile polling licensing access, while the other scenario had the university covering the total cost of purchasing the app/mobile polling license as an enterprise system. A total cost of ownership provided by vendors was analyzed to ascertain the cost benefits of both scenarios. Based on the cost variables, it was shown that Poll Everywhere would provide the best cost benefits for an enterprise student response system for the university community.

By the university entering into an institutional licensing agreement with Poll Everywhere, this student response system will become an enterprise system, our students will have immediate access to use in their courses. The IT Services department would purchase and assume responsibility for the contract, in order for the app/mobile polling license to become an enterprise system for the university.

Recommendation:
Based on the above findings, it is recommended that UNC Charlotte adopt Poll Everywhere as the replacement for our standardized clicker system. Rather than a clicker system, UNC Charlotte is advocating a standardized student response system supportive of a bring-your-own-device (BYOD) offering. This recommendation is based on cost savings for our students, a standardized student response system supported by the university, a polling system available to faculty, and staff for courses and non-academic presentations, and a more streamlined process of providing access and ease-of-use to the university community.

The university's IT Services department will purchase the institutional license and assume responsibility managing the contract. We will designate this vendor as providing a standardized student response polling system that the university will support. Our faculty will be provided the necessary support as they use Poll Everywhere for active learning. Students will have access to the student response system without having to purchase a license. We envisage the contract negotiations being completed by the beginning of April 2017, in order to begin the phased change-over beginning summer 2017 semester. Additionally, we will ask faculty to volunteer in spring courses to use the Poll Everywhere student response system in two or three learning instances in their class to gain feedback and best practices.

A full roll out of the Poll Everywhere system will begin at the start of the fall 2017 semester. CTL will share its findings with Academic Affairs, Student Government Association, University Faculty Senate, the Barnes and Noble Bookstore, and all other interested non-academic units. The adoption recommendation information will also be shared on the CTL website under the Clicker Evaluation Committee page.

Standardized Student Response System Use:
With the university moving to provide an institutional license for a student response system, resources and guidelines must be created to encourage and support standardized student response system use. The goals for a standardized student response system are:
- To support a single student response system within the university
- To support active learning initiatives in the classroom
- To support and utilize accessibility standards and usage
- To remove the cost barrier to students
- To increase access for faculty and staff
- To enhance and support pedagogy in the classroom
- To be reliable and not subject to upheavals within the classroom
- To reduce disruption to teaching and learning
- To integrate with our Canvas learning management system
- To provide feedback via assessments and grading
- To support all cases of educational advancement to meet student learning outcomes
- To encourage increased use across the university (administrative and non-academic)