

July 2016

Student Response System Pilot: Final Report

Executive Summary

Student Response Systems (SRSs) are classroom eLearning tools used to gather student responses to an instructor's questions, often known as "clickers". Unlike previous generations of these tools, today's SRSs allow students to use any internet-enabled device to enter their responses, which are collected instantaneously for further use or display by the instructor. These systems are used primarily for student assessment, which means they create student records.

William & Mary has no officially recommended SRS product. Faculty across campus use multiple systems, following individual preference. Concerns include lack of protection of FERPA-related data, the additional cost to the student for purchasing multiple SRSs (leading options are not free to students), as well as the overhead of supporting multiple solutions.

In response, the Office of the Associate Provost for University eLearning Initiatives (APeL) investigated the potential for endorsing a single campus-wide SRS solution. A two-semester pilot was conducted during AY2015-2016 in collaboration with campus partners. Faculty with interest and experience with SRSs were recruited to participate from across campus. APeL staff researched SRS products and selected PollEverywhere (PollEv) for testing in courses.

Approximately 40 faculty and staff participated by using PollEv during one or both semesters. APeL staff provided ongoing faculty support, access to optional training from PollEv, monthly participant forums, and ongoing personal consultation. Faculty provided access to courses, gathered student feedback from students, and shared their own evaluation of the system.

Overall feedback from both student and faculty users was positive. Faculty noted capabilities to increase student engagement, conduct real-time assessment, and record student attendance. Students noted capabilities that provide more opportunity for involvement and feedback on their learning. Constraints noted were some network/ infrastructure limitations, limited control of student groups, and somewhat limited analysis features. These aspects are further described in the following sections of this report.

APeL recommends continuing the pilot with a rollout integrating with campus systems (SSO and Blackboard). To avoid FERPA concerns associated with independent third-party vendors, an institutional license is recommended. An institutional license with unlimited accounts (including LMS and SSO integration) for an institution our size is ~\$21,000 (or about \$3/student). A lower cost, initial rollout of 3,000 licenses would be sufficient for 2016-2017.

Product Selection Methodology

Prior to selecting PollEv for this pilot, APEL staff compared several SRS products. Due to priorities of sustainability and low student cost, we limited our consideration to options that were not hardware-based. Products were compared with regard to question types, user interface, pricing, and user experiences. The process resulted in 5 potential products that were investigated further: Poll Everywhere, Kahoot, Nearpod, TopHat, Socrative, and Turning.

Ideally, our pilot would have tested all products. However, given limited resources and the desire to avoid unnecessary cost to our students, we selected a single product. PollEv was selected based on several differentiating factors:

- User- friendly interface for both students and faculty
- Exceptionally easy student registration and grouping process,
- Seamless integration with presentation platforms such as PowerPoint, Keynote, and Google Slides.
- Non-proprietary platform
- Integration with LMS gradebook
- Student-friendly pricing structure

Data Collection

- 30 instructors. 27 faculty instructors.
- 14 academic departments from four schools.
- 5 staff participants from University Libraries and IT (used shared accounts)
- ~38 courses (in various buildings across campus) and ~2,500 students
- ~1,700 polls/questions created
- ~120,000 student/audience responses (approximate)

The following courses utilized Poll Everywhere during the 2015-2016 academic year (* indicates multiple sections):

ANTH 458, 150, 350	BIOL 306	BUAD 351, 6621
CHEM 103, 457	ECON 101*, 321, 451	EDUC 694, F67
EPPL 635	GEOL 101	GOVT 203-1/2*
KINE 270, 405	LAW 108	PHYS 101, 172
PSYCH 150, 301, 302, 406	SOC 302*, 361, 250*, 362*, 353	

Results

Faculty Feedback

Faculty provided feedback during monthly lunch forums, informally during support consultations, and via an end-of-semester survey (distributed via PollEv). Survey results indicate:

- 67% perceived student engagement to be higher in courses that uses PollEv
- 87% perceived student feedback regarding PollEv to be mostly positive or positive.
- 88% are very likely to use PollEv in a future course
- Highest ranked uses: graded assessments, informal assessments, and attendance

Student Feedback

We asked faculty to invite students to complete an online survey sometime during the final weeks of each semester. A total of 280 completed surveys were collected (response rate is unavailable because we did not collect details on which faculty distributed the survey). Using a 5 point Likert-type scale, students rated PollEv in areas relating to their engagement and the user interface. We asked students to consider only the *lecture portion* of the course (i.e., excluding labs or discussion sections).

Learning preferences. Students generally do not avoid lectures. However, they prefer to be engaged and to receive feedback.

	Strongly Disagree %	Disagree %	Neither %	Agree %	Strongly Agree %	Mean
Getting feedback on my ideas helps me to learn better.	1.1%	1.1%	15.5%	54.5%	27.8%	4.1
If I had a choice, I would avoid classes where the instructor just lectures	8.7%	35.4%	24.5%	24.2%	7.2%	2.9
In class I prefer to be involved and engaged.	1.4%	4.3%	20.9%	54.2%	19.1%	3.9

Student engagement. Students in these courses were largely engaged during class and found that PollEV contributed to their engagement.

	Strongly Disagree %	Disagree %	Neither %	Agree %	Strongly Agree %	Mean
For me, the potential for participating via PollEv motivates me to come to class.	5.4%	14.4%	28.2%	32.9%	19.1%	3.5
I actively participate during class.	4.7%	22.3%	30.2%	35.6%	7.2%	3.2
I attended class when I otherwise would not have because of the participation opportunities through PollEv.	11.6%	29.2%	26.0%	26.7%	6.5%	2.9
Often I feel withdrawn or distant during interactions in	2.9%	18.5%	24.6%	40.9%	13.0%	3.4

this class. (Reverse coded for reporting)						
PollEv questions encourage me to be more engaged in the classroom	2.9%	6.5%	17.0%	44.4%	29.2%	3.9
The use of PollEv in this class makes me feel less anonymous.	9.0%	28.4%	35.6%	20.9%	6.1%	2.9

Improve learning. Students generally found that PollEv contributed positively to their ability to learn course material.

	Strongly Disagree %	Disagree %	Neither %	Agree %	Strongly Agree %	Mean
By using PollEv in this class, I got feedback on my understanding of class material.	4.0%	8.6%	12.6%	51.8%	23.0%	3.8
Using PollEv helps me know how well I am learning the material.	3.6%	10.1%	16.5%	54.3%	15.5%	3.7
The PollEv questions are helpful for preparing me for the exams in class	8.7%	17.3%	24.9%	37.2%	11.9%	3.3

Ease of use. Students experienced very few problems with set up and use.

	Strongly Disagree %	Disagree %	Neither %	Agree %	Strongly Agree %	Mean
The PollEv interface works well on my device (smart phone, tablet computer, laptop, etc.)	0.4%	0.0%	3.6%	44.2%	51.8%	4.5
Setting up my PollEv account was an easy process.	0.7%	2.2%	6.9%	54.5%	35.7%	4.2

Technical Considerations

A framework for IT support is currently in place and includes an enterprise MSI push of necessary add-ins and updates. Issues with network capacity were revealed during the test, in large enrollment courses where each student was connecting to the network with multiple devices. In response, IT assessed

network load and potential needs for upgrading bandwidth in large classrooms or requesting that students connect to the network with only a single device during a class period using PollEv.

PollEv supports single sign-on. The vendor provides a dedicated account manager, training (live and recorded), full customer support through email and phone support centers 8am-8pm EST.

IT would be asked to include support for PollEv in their service catalog. APeL would provide consultation with faculty on use in the classroom.

Pricing

Poll Everywhere offers two standard pricing models. Instructor accounts are always free.

- **Student-pay:** \$14 per year. Once a student creates an account, it may be used in any course. 1-time fee of \$1,000 for single sign-on.
- **Institution-pay:** scalable based on student enrollment at the institution. For 7,000 students, the cost (including LMS and SSO integration) is \$20,950 or about \$3/student. This option also would allow use in non-course settings (such as by libraries, at workshops, events, etc.).