

Poll Everywhere Pilot: Response Systems and Student Mobile Computing Trends

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BACKGROUND AND SUMMARY OF RESULTS

Since Spring 2010, the Center for Faculty Excellence (CFE) has sponsored a pilot program for Poll Everywhere, an alternative to class response systems that rely upon “specialist devices”^{*} commonly known as clickers. In courses using Poll Everywhere, students submit answers through a web browser or with a text message. Question sets are created in a browser and delivered in a browser or in PowerPoint. Reports of student data can be viewed in a browser or exported as a .csv file.

In Spring 2010, Poll Everywhere was piloted in five courses offered by the Biology department. In Fall 2010, the pilot expanded to eight courses in Biology, Microbiology, and Statistics. At the end of both semesters, enrolled students courses completed in-class, paper surveys. Questions asked addressed both pedagogical and technological concerns. This report summarizes answers to technology-focused questions^{*} and compares Fall 2010 results with those from Spring 2010 surveys.

The number of surveys completed nearly doubled from Spring to Fall (from 550 to 1020), and the responses from such significant sample of undergraduate students provides insight into student ownership and use of mobile devices. A new question was added to the Fall survey: “Do you have a smart phone or other device (e.g., iPhone, Blackberry, iPod Touch) that can access the web?” Fifty-two percent of students surveyed reported owning a smart phone or some other type of Internet-enabled handheld.^{**}

When having the option of using either a cell phone or a laptop to answer questions, a clear majority of students preferred texting their answers (85%). The percentage of students who used texting closely matches the percentage of students who have unlimited text plans (86%). From Spring 2010 to Fall 2010, the percentage of students using SMS submission increased by 8%. The percentage of students having unlimited text plans increased by 13%.

A significant minority of students (14%, n=142) primarily used their laptops to respond to Poll Everywhere questions, including the combined 4% of students who either do not have a cell phone, do not have a text plan on their phone, or who pay per text. When asked why they decided to use laptops, the majority (n=88) reported that they already bring their laptops with them to class. Other reasons included ease of use and lack of additional cost. For 13% of students who tried unsuccessfully to use texting in the classroom, the laptop was a fallback option.

Of the 33% students who reported using clickers in other courses, 65% preferred Poll Everywhere. Those students who preferred clickers noted that clickers were easier to use and more reliable. The top reasons that students preferred using Poll Everywhere were that they were less likely to forget to bring their phones to class and that Poll Everywhere found easier to use.

^{*} Term used by Matt Jones et al. (2006), “Using Mobile Phones and PDAs in Ad Hoc Audience Response Systems.” In David A. Banks, ed., *Audience Response Systems in Higher Education*, 359-372.

^{**} The pedagogical questions were originally designed for a specific section of Biology 201, Microbiology and Genetics. Given the variation in both course content and individual approaches to teaching, it has not been fruitful to analyze across pilot courses the results of pedagogically-oriented questions.

SUMMARY OF RESULTS

Device most often used

When asked what device they used most often to submit answers to Poll Everywhere questions

- 85% (854) reported using texting, up from 78% in Spring 2010.
- 14% (142) reported using laptops, down from 22% in Spring 2010.

Primary laptop users

When asked why they decided to use this device

- 62% (88) reported they use the laptop because they already bring it to class.
- 43% (63) reported that it was easier to answer questions with a laptop.
- 19% (27) reported not wanting to pay for texting.
- 13% (19) reported trying unsuccessfully to use cell phones. Several comments noted issues with poor or unreliable cell signals.

Text plans

- 86% (866) reported having an unlimited plan, up from 73% in Spring 2010.
- 10% (106) reported having a plan limited to a specific number of texts, down from 19% in Spring 2010.
- Further constraints: a combined 4% (37) of students either pay per text, do not have a text plan, or do not have a cell phone—down only slightly from a combined 5% in Spring 2010.

Internet-enabled handhelds

- 52% (526) reported owning a smart phone or a hand-held Wi-Fi device (new question for Fall 2010).
- Only 1% (14) used web-form submission using a smart phone or iPod Touch.

Comparison with clickers

In the Fall 2010 surveys, students were asked that if they had used clickers in another class, which system would they prefer to use and why, if cost were no consideration. Ten percent (24) of students who preferred Poll Everywhere nonetheless mentioned cost as factor. For most courses* that have implemented clickers, students have had to purchase the devices themselves. There was no cost to students to use Poll Everywhere, other than any text charges, which could be avoided by using browser-based submission. (Summary continued on next page.)

* The Department of Physics and Astronomy owns sets of clickers that are distributed to students during the class sessions.

Comparison with Clickers, continued

- 33% (334) of total surveyed reported using clickers in another class.
- 65% (220) of students preferred Poll Everywhere, noting
 - that they were less likely to forget their phone or laptop than a clicker (39 mentions)
 - its ease-of-use (27 mentions)
 - its convenience (21 mentions)
 - the usefulness of answering short-answer questions (rather than only multiple choice) (13 mentions)
 - that using it requires carrying one less device (7 mentions)
 - that they already own the required device (6 mentions)
- 34% (113) of students preferred using clickers, citing ease of use and reliability (including fewer technical problems) as top factors.
- Students who reported having smart phones or another handheld, WiFi-enabled device were slightly less likely to report a preference for clickers (30% of all Internet-enabled handheld owners vs. 37% of those not owning these devices).

APPENDIX: TECHNOLOGY-FOCUSED SURVEY QUESTIONS

We are interested in learning about your experience using Poll Everywhere in this course and would appreciate you taking a few minutes to complete this anonymous survey.

1. What device do you use most often to answer Poll Everywhere questions?
 - a. Laptop or netbook
 - b. Cell phone, using text message
 - c. Cell phone, using poll4.com
 - d. Other device, please specify _____
2. Why did you decide to use this device? Circle all that apply.
 - a. I carry it with me anyway.
 - b. It was easier to answer questions with this device.
 - c. I tried another device, but I couldn't connect or my answers didn't go through.
 - d. I didn't want to pay for text messages.
 - e. Other reason(s), please specify: _____
3. When you attended class, how often did you respond to the Poll Everywhere questions in class?
 - a. Always
 - b. Often
 - c. Sometimes
 - d. Rarely
 - e. Never

4. When you didn't respond to Poll Everywhere questions, what were the reasons?

- a. I always responded.
- b. I did not have enough time to respond.
- c. It did not play a large enough role in my final grade to matter to me.
- d. I did not want to pay for text messages.
- e. Technical difficulties with responding (please describe): _____
- f. Other reason(s), please specify: _____

5. Is there anything else about Poll Everywhere or the way it was used that you would like to mention?

6. What type of text plan does your cell phone have?

- a. I don't have a cell phone.
- b. I don't have a text plan on my cell phone.
- c. I pay for each text.
- d. I have an unlimited plan.
- e. My plan is limited to a certain number of texts sent or received.

7. Do you have a smart phone or other device (e.g., iPhone, Blackberry, iPod Touch) that can access the web?

- a. Yes
- b. No
- c. Not sure

8. Answer this question only if you have used clickers in another class. If cost were no consideration, which would you rather use, clickers or Poll Everywhere? Why?