If You Can't Beat It, Integrate It: Using Smartphones and Polling Software to Create an Interactive Learning Environment

A common complaint among educators is the number of distracted students in their classes. Many of us bemoan students in our classes engrossed in their smartphones instead of listening to our lectures. In fairness, distractions in class are nothing new. I must confess to doodling in my notebook when I was a student. Indeed, in whimsical moments, I envision Socrates admonishing his students to put away their scrolls and pay attention.

Some of my colleagues ban students from using their cell phones in class, calling out students caught checking their phones or even asking students to leave the class for multiple offences. Unfortunately, forbidden fruit is often the most tempting. Instead of complying with the ban and concentrating on class, students tend to merely hide their phones in their laps or behind a textbook and merrily continue being distracted. In the spirit of "If you can't beat them, join them," I decided to integrate the use of smartphones with the material I cover in class by using Poll Everywhere (www.polleverywhere.com).

There is a vast array of polling and survey applications available on the internet. It should be noted that this article is not intended as an endorsement or advertisement for Poll Everywhere, but simply a description of how I use the application as a means to incorporate smartphones into my instruction and keep students interested and engaged in the course material. Similar applications include Survey Monkey, Polldaddy, easypolls, and a host of other online and downloadable tools.

My In-Class Activity

I use the smartphone activity in my External Auditing course. The course is offered in the third year of our baccalaureate degree in accounting. It introduces students to the concepts, standards, and procedures related to conducting an annual financial audit of a company.

For four weeks during the semester, we examine how an auditor conducts an audit of various business processes, such as reviewing how sales are recorded, how payroll is conducted, and so forth. In a typical audit, the auditor will have a long list of evidence to gather. Rather than simply lecture on the process and bore students with long lists of details, I decided to make the activity interactive and get the students to create the lists themselves.

In my class, I project a question on the screen at the front of the classroom. The application I use allows for multiple-choice and open-ended responses, and it displays the results in real time in the form of bar graphs, word clouds, or simple scrolling text responses. Students text their responses to a short-form cell number, which is set up specifically for text messaging and which carries no charges beyond standard text messaging rates. In the case of open-ended questions, students actually see their text appear on the screen. In the case of multiple-choice questions, the bar graph updates in real time in accordance with their choices.

The free version of the application I use allows for up to 40 responses per poll. This is sufficient for my courses, as our institution limits registration to 40 students per class. In addition, since the students in my class typically collaborate with their friends and respond as a group, I rarely hit the 40-response limit. Paid subscriptions allow for more responses, filtering of responses, and a much wider range of data analysis tools. The features are very similar across the various applications.

To introduce the students to the application, I first create a generic, "just for fun" poll, which I display on the screen when students arrive in class. The poll simply asks students a multiple-choice question:

How are you doing today?
   A. Awesome!
   B. Pretty good.
   C. Not bad.
   D. Pthhhhrrrrppp!
   E. What's today?

As the poll is intended to be humorous, I am not too surprised when the majority select "Pthhhhrrrrppp" or "What's today?"

As the class progresses, I pose a question such as, "When testing the 'authorization' control objective, what evidence would you gather?" or, "What audit procedure would you use to test if transactions were valid?" These particular polls are "open-ended," meaning that students can type any response. Students then text their responses to the question, and their responses appear on the screen at the front of the class. The activity typically lasts five to ten minutes, during which time a list of possible audit procedures or evidence is generated in the form of the students' text responses. When the maximum number of responses is reached, or when it seems there are no other responses forthcoming, I stop the poll. I then go through the list generated by the students, expanding on some

responses and explaining why some responses might be more appropriate or successful than others. This allows me to focus my explanations on areas where students needed clarification, rather than lecturing on topics they already understand. Once I have review the responses to a particular poll, I move on to the next topic, and after a brief introduction, repeat the process with another poll. In a typical three-hour class, I conduct three to four such activities, interspersed with discussion on the subject.

Results

One key result is the level of participation in the activity. Virtually every student has their cell phone out, or is discussing a possible response with a neighbor who has his or her cell phone out. Not only are students engaged, they discuss the response amongst themselves as they appear on the screen. The room is abuzz with discussions about the subject material.

Another important aspect is the insight polling provides me into students' comprehension of the material. If a number of students provide the same or similar correct ideas, I know that I do not have to elaborate on that concept. I can then customize my discussion of the list, focusing only on the areas where clarification is obviously needed. This allows me to make class time much more focused and efficient.

Students can sometimes be reluctant to speak out during a class activity for fear of answering incorrectly and appearing foolish in front of their peers. Since the responses are anonymous, students can respond to a question without fear of ridicule, as no one in the class knows who sent which text.

An initial concern I had about using text messaging in class was the possible cost to students. I spoke to a few of my students beforehand, who indicated that unlimited texting is included with their smartphone plans. No students expressed concern over paying for texts. The only concern raised was with cell coverage. Because my class takes place in the basement of one of our campus buildings, some students are unable to get a signal in the classroom, depending on their service provider.

In addition to the texting option, students can access the poll on their laptop computers. Students access a specific website (instructions are given on-screen), and can reply via their computer. This allows students who have to pay for texts or who are unable to get a cell signal to participate in the poll. As a final step, I bring additional whiteboard markers to class, and indicate to students they can make their lists on the whiteboard as an alternative to texting or using their laptops. Unsurprisingly, not a single student has made use of this option.

With open-ended questions, students have the opportunity to type whatever they wish, raising the potential for students to send frivolous, inappropriate, or offensive messages. For the most part, my students are very well behaved, and conduct the activity the way it is intended. There are, of course, some exceptions. Some write "hello" to a friend sitting across the room. In my Friday afternoon class, owing no doubt to the end of a long and difficult week, several students take the opportunity to share reviews of the latest movie. So long as the majority of students are texting responses to the poll question, I allow the occasional digression. Since polls are a five-minute activity, the off-topic conversations don't last long and are usually not a great distraction. When the messages have less to do with auditing and more to do with irrelevant topics, I simply end the session and continue the class. I find that by ignoring the inappropriate messages and focusing on the relevant ones, the class (for the most part) remains focused and professional.

Versatility

This type of activity can easily be adapted to other subject areas. Allowing students to generate their own lists of information can be an activity for almost any subject. Specific questions related to the subject material with multiple-choice responses can be used to gauge the class' understanding of the material.

In a large classroom setting, it can often be difficult for students to ask questions or interact with the instructor, simply due to the size of the room and the difficulty of hearing questions. An open-ended poll can be used to allow students to text their questions to the instructor, which allows for some interaction between the instructor and a large audience.

It has been said that imitation is the highest form of flattery. A few weeks after I first used the application in my class, the same students were assigned a group presentation on corporate sustainability in another instructor's class. A requirement of the presentation was to involve the audience. One group of students, having experienced using smartphones in my class, decided to do the same as part of their presentation.

The students shared with me that they find using smartphones in my class to not only be fun, but also effective, as it ties directly into the material we discuss in class. They also tell me that when they look around the room, they see their classmates participating and enjoying the activity, which does not happen in other classes. This inspired them to create their own smartphone activity as part of their presentation. The students shared with me that the entire class, including the instructor, participated in the activity, and the group felt the activity had a lot to do with the A+ grade they received for the presentation.

Recently, illness caused me to cancel a class. Not wanting the students to fall behind in the course due to my absence, I offered to conduct a "make-up" class outside of normal class time. In a matter of a few minutes, I created a survey offering the class four choices of alternate times, and let the students vote on which time fit their schedules best. Since the students were already familiar with the application after using it

in class, I was able to rapidly gauge the class' feelings about the best time to make up the lost class. This made for an efficient way of gathering feedback from a class and in an enjoyable format for my students.

Distracted students in the classroom are not a new phenomenon. Smartphones and the various social networking apps that accompany them have added even more classroom distractions. Rather than fight a vain battle against distractions, there are opportunities for instructors to take advantage of students' fascination with their smartphones. By integrating smartphones with the material being covered through the use of websites such as Poll Everywhere, it is possible to keep students entertained and engaged.

Stephen L. Bergstrom, *Faculty, Accounting*

For further information, contact the author at SAIT Polytechnic, 1301 16th Avenue NW, Calgary, Alberta, Canada T2M 0L4. E-mail: stephen.bergstrom@sait.ca

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