The Socratic method of teaching has been around since, well, Socrates. Posing a question to a student, letting him work through the answer before giving it, rephrasing the question?it?s a time-tested way of encouraging critical thinking.

But Socratic method works best one-on-one or in small groups. What happens when there are a few dozen or a few hundred students? What if you are facilitating a large group through a professional development course, and some participants seem to be less than engaged?

One answer could be ?clickers.? Used on many college campuses, clickers?more properly known as audience response systems?give instructors immediate feedback on whether the lessons are sinking in. Clickers are also used in conferences and other settings where a presenter wants to engage a large group. Each participant is issued a handheld device similar to a television remote control and wirelessly connected to a computer. They input their answers to questions posed by the group facilitator and the clickers feed their answers through a central unit and into the facilitator?s computer, incorporating the results into her Powerpoint presentation or other computer program set up to receive them. Just like on television game shows, once everyone has ?voted,? the votes instantaneously appear in a graph onscreen. It?s fun for participants, but equally importantly, it gives the facilitator immediate feedback on how the group is progressing and whether more time needs to be spent on the current portion of the presentation before moving on to the next.

Studies of university students using clickers in class showed that they like clickers, feel more engaged in classrooms that use them, and are more likely to participate actively in class when they are used. Studies show that students learn better in classrooms with clickers. A University of Wisconsin study showed that students retained knowledge better when clickers had been used. Instructors also benefit by saving time on reviewing subjects that students already understand or by knowing right away that a concept has not sunk in yet. No studies have been done on the non-academic use of clickers, but clicker vendors cater to both
How do clickers enhance learning? Perhaps because they set up a feedback loop, ensuring that each person’s answer is heard, even though it may be anonymously. An Ohio State University study showed that use of clickers benefited one group in particular: women. The study found that female physics students’ test scores improved more than their male counterparts when clickers were used.

Many different strategies can be employed with clickers. Among them:

- **Peer instruction.** Ask a question, graph the answers. If most are wrong, re-explain the concept, then get the students to form small groups and discuss. Then re-poll. If there are more correct answers on the second try, ask a student who changed his answer to the correct one to explain how to approach the question. In this way, students are working together and teaching each other.
- **Start a debate.** Unlike a show of hands, clicker answers tend to be more honest, because they are anonymous. In addition to multiple-choice answers and right-or-wrong questions, clickers can be used to poll opinions. The graph that appears on the screen reveals differences of opinion that can be surprising and become the spark for small-group discussions.
- **Plan future events.** Most conference organizers issue printed surveys at the end of presentations to learn how much the attendees liked the speaker, but the response rate can be low. Clickers could be used to obtain instant feedback from all attendees to give a more complete picture.

**Some criticisms**

Critics of this technology in the classroom say that answering multiple choice questions is not good training for critical thinking. Another potential problem is cost. Some instructors say the time spent on administering ARS questions would be better spent covering more material. Several studies mention these criticisms but say that most instructors who use them believe the feedback leads them to shape their lectures differently and that clickers are a net benefit to instruction.

**Hardware**

There are several types of audience response systems. Infrared and radio frequency systems rely on handsets wirelessly connected to a computer, usually running a Powerpoint presentation or other software that presents the questions and answers on a screen for all to see. At universities where clickers are extensively used, students may be required to buy their own individual hand-held units. In these cases, they are assigned unique numbers and can be used to record class attendance or even to administer quizzes or exams. Some universities instead have a box of clickers in classrooms where they are used, and students can either be assigned their own units or use them randomly for anonymous responses.

Clickers cost about $20 to $60 apiece and come in bundles with a central unit and software to link with the presenter’s presentation software. For conferences and other one-time events, packages can be rented for upwards of $5 per participant.
ARS via mobile phones does away with the clickers themselves, connecting group members to the group leader’s presentation via their own mobile phones and instant messaging (SMS) technology. This trend away from place-based computing and toward use of personal mobile phones for a variety of educational purposes is part of a broader trend called m-learning [1]. ARS delivered by Internet requires all users to have a computer with wireless internet connection and operate through a browser, rather than actual clickers.

Judicious use

According to Derek Bruff of Vanderbilt University, who has published a book called ?Teaching with Classroom Response Systems,? the way in which clickers are used is critically important to how useful they are. For example, facilitators who want to use them must plan ahead. They must write appropriate questions and insert them into their presentations. Bruff says that it is not very useful to merely interrupt a lecture every 15 minutes to ask students to repeat what they have just heard?the questions must require students to use the new information to think through a question themselves before answering. The same rule applies to professional development or conference settings, and possibly even more so: it is well known that adult education is more effective when the learners believe the lesson is relevant to them, and clickers can help facilitators to be aware of whether participants believe that it is. If the majority are not, there is a chance to redirect the presentation, perhaps by asking additional questions.

Common Measure:
Technology [2]

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References & Resources:


Source URL: https://cyfar.org/resource/clickers-those-audience-response-systems

Links