Using Student Response Clickers to Maximize Impact and Evaluation of Extension Presentations to Stakeholders

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Abstract

Student response clickers are currently used in various applications in formal classroom settings. These clickers allow educators to take attendance, assess student knowledge of course material during lecture or exams and provide review activities for students. This tool can also be applied to Extension meetings with questions posed at both the beginning and end of presentations. Questions at the beginning of the meeting can provide real-time feedback on the demographic makeup of the audience and their interests. Though a general idea of audience interests are usually known prior to a meeting, this data would then allow Extension personnel to pinpoint important areas to focus on during the meeting, specialized to that particular audience. Questions were posed using clickers prior to a recent Extension meeting related to the age range and farm size of participants as well as their interest in using switchgrass for bioenergy and their interest in using switchgrass for forage. Questions posed at the end of the meeting could be used for evaluation purposes and to identify the effectiveness of the informational meeting. At the same meeting described above, participants were asked about their relative change in knowledge and interest in switchgrass use for bioenergy. The majority of participants identified that they liked using the clickers. Student clickers have important applications that can be utilized by Extension professionals to maximize their effectiveness in serving stakeholders.

Figure 1. Student response clickers used in data collection.

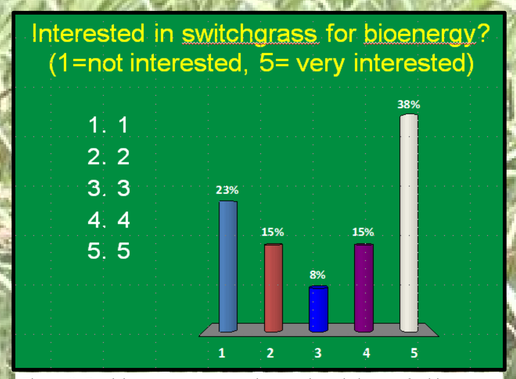


Figure 2. Participants responses to interest in switchgrass for bioenergy.

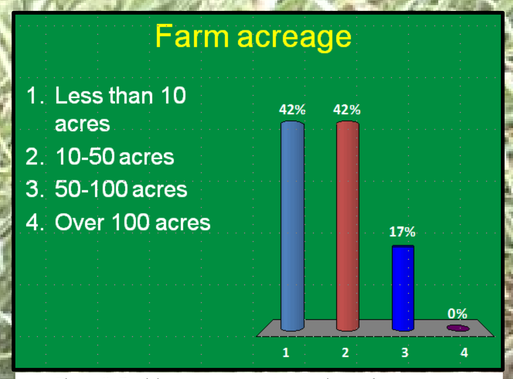
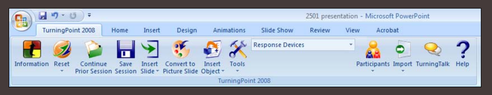


Figure 3. Participants responses to question on farm acreage.

Materials and Methods

An Extension presentation on "Using switchgrass for forage and biofuel production" was given in 2012 to participants of the Small Farm Outreach and Assistance Program conference in Nashville, TN. Student response clickers (Fig. 1) from Turning Technologies (Youngstown, OH) were incorporated to collect real-time information about the audience. Using the TurningPoint™ program (see below) that accompanied the clickers, demographic polling questions were embedded into the beginning of the PowerPoint™ presentation and evaluative polling questions were embedded into the final few slides.



Demographic information included questions on age, farm size, and interest level of the presentation topic. Evaluation questions included queries about change in knowledge or interest in the subject matter and whether the audience liked using the clickers. Reported responses came from between 11 to 13 participants.

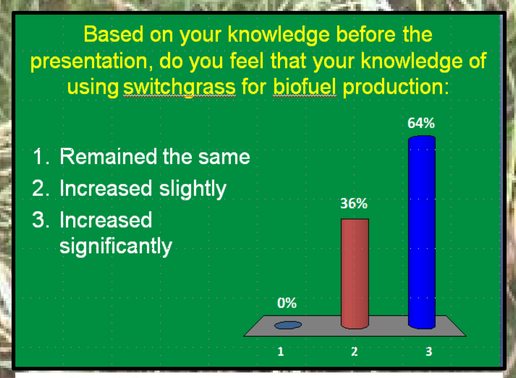


Figure 4. Participants responses on change in knowledge.

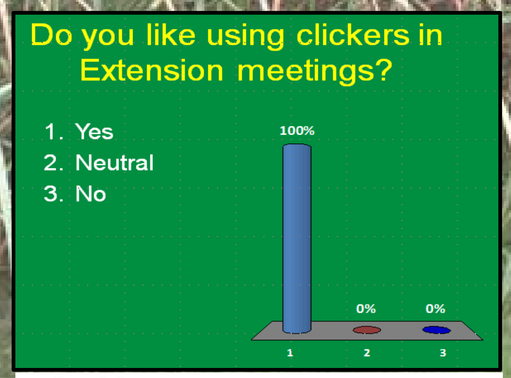


Figure 5. Participants responses on using clickers in meetings.

Results and Discussion

TurningPoint™ worked seamlessly with Powerpoint™ and displayed the results within the presentation in real-time. The software essentially created an extra tab within Powerpoint™ that could be used to create polling slides and set how the data was collected. The default options work well for general information queries. More complex analysis can be performed (i.e. linking answers from different questions to each other and to a particular clicker) but requires changes in the default settings. Data is collected using a small receiver that connects to the USB drive. Collected data can be saved and then imported into a spreadsheet format for later use.

Based on the polling results, the majority of participants were interested in switchgrass for bioenergy (Fig. 2) and had 50 or fewer acres (Fig. 3). Following the presentation, all of the participants felt that their knowledge of switchgrass for bioenergy increased (Fig. 4) and liked using clickers in Extension meetings (Fig. 5).

Salmon and Stahl (2005) assessed knowledge retention when wireless response systems were used in an Extension setting. Though they did not identify a significant difference between these and traditional evaluation methods they did identify an overwhelming interest by participants in using these devices (98% approval rating). This is similar to the feedback we received.

The student response clickers would be useful for most Extension activities. For smaller audiences (containing 5 or fewer participants) the graphs produced and the data collected may be too simplistic for the work involved in creating the polling slides. In these cases, paper evaluation forms may be just as effective.

While the research on student response clickers has been largely focused on students, the results may be applicable to many Extension audiences. Many benefits have been attributed to the use of clickers including improved attention level, quality of learning, and feedback (Kay and LeSage, 2009) which are all important for effective Extension meetings.

Conclusions

The use of student response clickers for an Extension meeting worked well from the development stage through implementation. Data collection was simple and stakeholders were unanimous in their positive opinion of their use for Extension meetings.

The initial demographic data collection could assist Extension professionals by pinpointing their audience more accurately and making adjustments in real-time. Providing stakeholders with a response device may increase participation in assessments as compared with traditional paper-based assessments because it would take place during the presentation rather than after it is over. Also, stakeholders may feel that the clickers would grant more privacy. Further research is needed to define these causes and benefits.

Based on results from student usage, stakeholders may be more engaged in the material that is presented.

Kay, R.H., and A. LeSage. 2009. Examining the benefits and challenges of using audience response systems: a review of the literature. Computers & Education 53:819-827.

Salmon, T.P., and J.N. Stahl. 2005. Wireless audience response system: does it make a difference? Journal of Extension 43(3):3RIB10 Available at: http://www.joe.org/joe/2005june/rb10.php

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