IMPACT
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Use of TurningPoint Technology increases success for pesticide applicators

The Situation

Pesticide applicator certification courses are conducted around the state of Idaho each year by University of Idaho Extension and Idaho State Department of Agriculture personnel. It has been documented that actively engaged learners have increased comprehension levels and better knowledge retention[1].

In previously offered applicator trainings, personal observations have indicated that participants struggle with engagement levels that are necessary for retaining adequate knowledge to obtain passing test scores required for state certification and licensure. We have also observed that class participants for pre-licensing pesticide classes are not always homogeneous, and have different educational levels and life experiences, making it difficult for the instructor to teach at the proper level of all class participants. Using the ARS "clickers" allows the instructor to periodically test the audience for knowledge comprehension to ensure all class participants are comprehending the material regardless of their initial educational level.

The purpose of these educational programs is to teach the proper use and application of pesticides. Pesticide misapplications can result in inadequate control resulting in additional, often expensive, chemical applications, crop damage, and potentially toxic exposure to humans and the environment. In order to increase good pesticide application stewardship and decrease misapplications that minimizes human and environmental health risks, a teaching method was needed that would encourage participant engagement, evaluate comprehension, and increase knowledge retention.

Our Response

University of Idaho Extension collaborated with the Idaho State Department of Agriculture to implement the use of TurningPoint Technology's Audience Response System (ARS) clickers at four Pesticide Applicator Certification classes in 2011. Classes were held in Lewiston, Twin Falls, Idaho Falls, and Caldwell, Idaho.

Our goals were to:

- increase participant engagement and subject matter comprehension.
- increase pesticide certification test scores.
- increase the number of certified pesticide license holders.
- Increase program effectiveness.

The ARS clickers are small handheld wireless response devices that are portable and easy to transport and set up, making them well suited for Extension classes. The ARS technology was also utilized to conduct pre- and post-tests, and course evaluations.

The ARS clicker technology allows the educator to measure class participants' level of understanding and knowledge by embedding "pop" quizzes in the PowerPoint presentations to determine if more time and review is needed before moving to the next topic. This periodic measurement of understanding benefits class participants because they remain engaged in the class presentations and do not lag behind. Periodic measurements also benefits the educator, giving them the ability to detect when more time and review is needed on a particular subject.

Program Outcomes

The use of TurningPoint ARS clickers increased participant engagement and knowledge retention by allowing the instructors to use a real-time evaluation of subject retention during presentations and reinforce topics that were not well comprehended. Instructors were also able to use post-presentation quizzes to confirm subject comprehension and reinforce topic specific retention.

The March 2011 pesticide safety education class in Caldwell, Idaho was attended by 30 people from all over southwest Idaho. Examinations were given in the following nine categories: Law and Safety, Agricultural Herbicide, Agricultural Insecticide, Ornamental Herbicide, Right of Way, Aquatic Pest, Chemigation, Restricted Use and Statewide Consultant. Forty-six examinations were given with an overall pass rate of 78 percent. The overall pass rate in the three classes from 2003 to 2007 when TurningPoint was not used was 67 percent. The pass rate for people that do not attend a pesticide safety class before taking the examinations averages 55 percent. TurningPoint Technology helps learners comprehend pesticide safety subject matter which ultimately helps them pass the examinations needed to obtain a license.

References

[1]Bird, C. & McClelland, J. (2010). Have You Used Clickers in Programming? *Journal of Extension* (On-line), 48 (5) Article 5T0T9. Available at: http://www.joe.org/joe/2010october/tt9.php.

FOR MORE INFORMATION

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