

TurningPoint Technology: Increases knowledge and test scores in North Idaho

The Situation

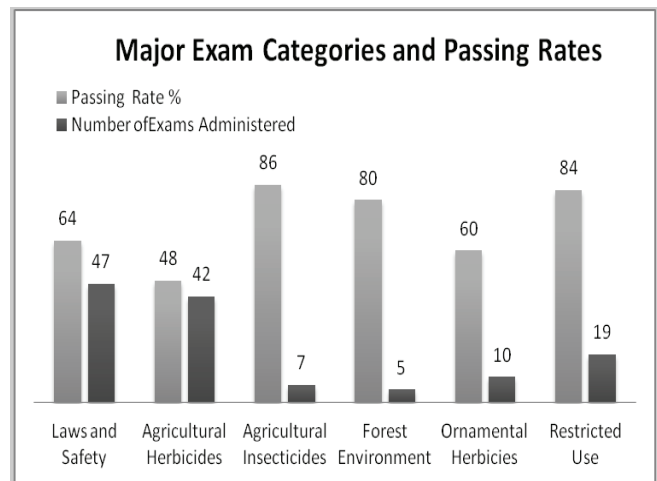
Pesticide applicator certification courses are conducted around the state of Idaho each year by University of Idaho Extension and the Idaho State Department of Agriculture. It is known that actively engaged learners will learn more and have better knowledge retention. Additionally, class participants for pre-licensing pesticide classes are not always homogeneous, and will have different educational levels and life experiences. In previously offered applicator trainings, 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.

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 minimizing human and environmental health risks a teaching method that would encourage participant engagement, evaluate comprehension, and increase knowledge retention was needed.

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.



Major exam categories and passing rates combined for 2010 and 2011 Lewiston PATT.

Our goals were to increase:

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

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 fall behind. This periodic measurement also benefits the educator, giving them the ability to detect when more time and review is needed on a particular subject.

The ARS clickers are small handheld wireless response devices that are portable, 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.

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 not well comprehended. Instructors were also able to use post-presentation quizzes to confirm subject comprehension and reinforce topic specific retention.

Test results from the 2010 Lewiston Pesticide Application Training and Testing (PATT) course indicated a 65% pass rate for the 76 exams administered. The testing areas of: Forest Environment, Restricted Use Pesticide, and Agricultural Herbicide has pass rates of 100, 86, and 74 percent, respectively. Test results from 2011 indicated a overall passing rate of 58% for 71 attempted exams, with similar pass rates to 2010 for the specific testing areas. The average pass rate for individuals who do not attend a preparation class is 55%, indicating that attendance of preparation courses increases the pass rate.

Ninety-one percent of the 2011 training attendees did not hold any sort of pesticide license, and over three-quarter of those were testing for the first time for a license. Of the 23% that had previously tested for the license they were attempting to obtain at the 2011 Lewiston PATT course, 77% felt better prepared after the training. Almost all attendees indicated that their knowledge of "pesticide use and safety" had increased as a resulting of attending the preparation course (93%) and that the "information they had gained" would be useful in their occupation (93%).

The Future

Ninety-three percent of attendees indicated that they would recommend this preparation course to others attempting to obtain pesticide applicator licenses. University of Idaho Extension and Idaho State Department of Agriculture will continue to cooperatively hold this preparation course and testing.

References

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

Lydia Clayton, Extension Educator
University of Idaho Extension, Nez Perce County
1239 Idaho Street
Lewiston, ID 83501
Phone: 208.799.3096
Fax: 208.799.3054
E-mail: lclyton@uidaho.edu

Ronda Hirnyck, Extension Educator
Extension Pesticide Coordinator
University of Idaho, Boise
322 East Front Street, Suite 180
Boise, ID 83702
Phone: 208.364.4046
Fax: 208.364.4035
E-mail: rhirnyck@uidaho.edu

Sherman Takatori, Program Manager
Idaho State Department of Agriculture
Pesticide Licensing and Training
PO Box 7723
Boise, ID 83707
Phone: 208.332.8609
E-mail: Sherman.Takatori@agri.idaho.gov

28-11lclyton-turningpoint.pub
10/11