

# Teaching and Learning with Technology

## Report on Adoption of a Student Response System

### February 2007

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One of the major challenges in large lecture classes is for faculty to know whether students understand key concepts. Student response systems represent a new way for faculty to test students' comprehension and for faculty to know whether they have achieved their learning objectives. For several years Classroom and Lab Computing (CLC) has evaluated several kinds of "clickers" to determine which product would be most cost-effective and easiest to use by faculty and students. On the basis of our pilot with five courses in the fall semester (2006), we recommend that we adopt the Interwrite PRS system for use in University Park general-purpose classrooms next fall. By standardizing on this product, we will eliminate the need for students to buy more than one "clicker" and for the University to support more than one system.

#### Results from the Pilot

During the pilot, both students and faculty found several benefits of using student response systems in the classroom.

- Systems helped increase student understanding of material.
- Systems added interactivity to class sessions.
- Very few technical problems arose.

We also found many significant differences between the two different systems we evaluated. After careful review, two models clearly stood out as meeting our criteria: e-Instruction CPS RF (<http://www.einstruction.com>) and Interwrite PRS RF (<http://www.interwritelearning.com>).

	Interwrite PRS	e-Instruction CPS
Utilizes radio frequency signals	Yes	Yes
Cross-platform compatible	Mac, Win, Linux	Mac, Win
Standardized client across platforms	Yes	No
Integrated PowerPoint add-ins	Yes	No
Integration with ANGEL/Gradebook	Yes	Limited and cumbersome
Online training modules	Yes	Yes
Student cost	\$45 lifetime	\$20 initial
Vendor registration requirement/fee	No	Yes – If standardized \$13/semester; \$36/lifetime; \$39 combination cap
Bookstore buyback/resale	Yes	No
Software costs (including upgrades)	None if standardize	None if standardize
Hardware costs	Receivers provided. Faculty clicker possibly negotiated.	Single receiver and clicker per faculty registered with vendor.
Ease of support with CLC systems	Yes	Somewhat
Low rate of support issues	Yes	Somewhat
Vendor response to support issues	Very Good	Very Good

Students did list several concerns. These included the cost of the clicker, uncertainty about how faculty would use the system for grading, and a strong desire for better integration of the system within lectures.

As regards members of the Committee on Institutional Cooperation (CIC) of the Big 10, three have standardized on e-Instruction CPS, two on Turning Point (no Mac client), two have no plan to standardize, one has recently begun investigating systems, and three did not respond to our request for information.

Once a final decision concerning standardization is made, information regarding the new system can be released to faculty and arrangements for training and tutoring of faculty can begin. Interwrite PRS also offers online training modules for faculty who wish to use them.

CLC will share its findings with the University Committee on Instructional Facilities (UCIF), which will make this information available to all Penn State campuses, and we will discuss with the vendor and the campus bookstores the most cost-effective way for students to purchase clickers.

Becky Carolus  
Classroom and Lab Computing  
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