

# **An Initial Assessment of a Classroom Personal Response System (PRS) at Old Dominion University**

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## **ABSTRACT**

Old Dominion University implemented a wireless, infrared personal response system (PRS) in several courses during the Fall Semester of 2004. The system selected for university wide implementation was the Interwrite™ Personal Response System (GTCO CalComp). To assess the effectiveness of the PRS system, faculty (n=10) and student (n=706) perceptions regarding the initial use of the system were obtained. The student assessment was performed using a 10-item multiple choice questionnaire and faculty perceptions were obtained via semi-directed interviews using a series of six open-ended questions. Faculty teaching ten different courses using the PRS in the Colleges of Education, Health Sciences, and Sciences agreed to participate in this assessment cycle. Faculty and student participation was voluntary and all data gathered remains confidential.

The major questions to be answered were: "Was the initial implementation and use of the Personal Response System selected for Old Dominion University successful?" and "What problems or issues arose during the semester that should be addressed in order to improve and expand the use of the system to a larger audience; i.e., would faculty recommend the PRS to their colleagues and would they use it again in the future?"

## **RESULTS**

The results of the initial assessment were mixed, with faculty and students expressing both positive feelings and concerns about the PRS. Overall, the faculty felt the system met their expectations, however it depended upon the purposes the faculty used the system. The PRS system is not intended as a testing method, yet the faculty who used it for that express purpose had mixed success. The majority of faculty would recommend use of the PRS system to their colleagues but they noted that it is best used for certain uses. They noted the system is not especially good for testing/grading but is an excellent way to obtain feedback from the students.

Students perceptions were evenly distributed when rating the PRS on a scale of 1 (lowest) to 5 (highest) and they did not believe that the use of the PRS system had an impact on their attentiveness in class. Student perceptions were fairly evenly distributed on whether the use of the PRS made them more confident with course material.

Students made qualitative comments 181/706 (25.6%) regarding the PRS, with the majority being negative. An analysis of these qualitative comments indicated that, in general, when the system worked, students were positive about the use of the PRS system. Positive comments (36/181, 20%) indicated that it worked for both large and small classes and that they liked the system as a means by which one could keep up with the course content and "show" the instructor you knew the material. Negative comments (145/181, 80%) centered on technical issues/problems and the cost of "clickers" used in the PRS system.

A core group of faculty continue to use the system with several new faculty using the system in Fall 2005. Faculty interest is slowly increasing, and faculty in other academic departments and levels (graduate education) have expressed interest in adopting its use in upcoming courses. Continued assessment of the PRS will be performed at the end of the Fall 2005 and Spring 2006 semesters using a more structured assessment tool model based upon the Computer Attitude Scale by Lloyd & Gressard (1984).

## **RECOMMENDATIONS**

Technical recommendations:

1. Reduce the recommended number of manufacturer's clickers per receiver. We adopted 35 clickers per receiver rather than the recommended 40 clickers per receiver.
2. Mount receivers on the ceiling and stagger receiver locations in larger classrooms (65+ seats) to reduce interference from multiple clickers.
3. Use the PRS System on a computer which has a processing speed greater than 1 Ghz in larger lecture rooms (65+).
4. Faculty who use laptops experienced fewer problems with file transfers since they did not need to change file locations between PRS use and data download.
5. Turn off IR ports on some projection systems to prevent interference from clicker signals.
6. Create a "test" station on campus to allow students to test clickers before they return "broken" ones to the bookstore.
7. Purchase or recommend for purchase RS232 to USB adaptor cables for newer laptops. The PRS System connects to the computer via an R232 serial port. Most newer laptops do not have this port.

Faculty recommendations:

1. Consider the particular use(s) for which you will employ the PRS System for each class. Decide prior to class commencing *when* you will use the system and for what *purpose(s)*.
2. Communicate your intentions to your students. This could include a description of the PRS system and your expectations of its use in the course syllabus. An in-course description and demonstration of the system is also recommended.
3. Faculty should receive adequate training in the use of the PRS (setup, hardware, and software) prior to its use.

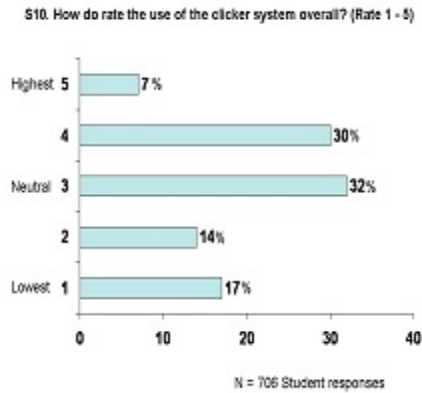
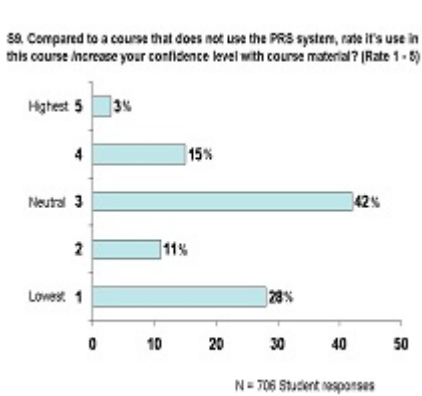
Training Recommendations:

1. Initial exposure (overview/demonstration) to the PRS is best delivered in a large group setting.
2. Once faculty self- identify as potential PRS users – provide demonstrations/orientation to the PRS in small groups.
3. Provide hands-on training on PRS at the Center for Learning Technologies (CLT) in a workshop format (1-2 hours).
4. Provide one-on-one training and “just in time” training as needed for faculty seeking assistance.
5. Facilitate “self-teachers” by identifying on-line product information/manuals and make these easily accessible to faculty.

Overall recommendations:

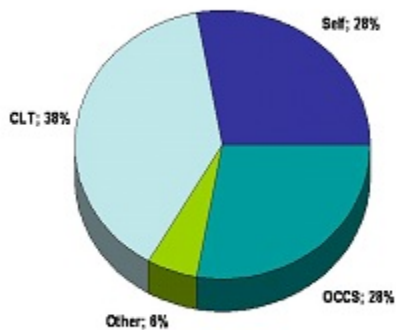
1. The university should choose to support a single PRS System to minimize technical, training and standardization issues across the institution.
2. Evaluate the use of the PRS from a faculty, student and technical perspective each semester during the first several semesters to assess effectiveness and perceptions of the PRS.

Student Results (selected):



Faculty Results (selected):

F3. Primary methods for learning how to use the PRS system.



N = 10 Faculty

F6. Would you recommend this particular response system to other faculty?

Qualitative Comments:

- "Yes, I would recommend it"
- "Yes I recommend they use it for developing a 'pulse' for the students only, not for grading"
- "Good way to get feedback"
- "Works pretty well for quick feedback, if \$30 is not a problem"
- "If using the system for grading or attendance - system is not reliable"
- "Great way to make large lectures interactive"
- "Use it with reasonably large classes"