

## **Clickers @ MSU**

(modified 3 March 2008)



Since Spring of 2006, the use of “clickers” (also known as student response systems) has grown at MSU. Faculty who use clickers in their classes, along with the published research, extol the advantages of using clickers, especially in large class settings (see, for example, Beatty 2004; Bergtrom, 2006). The primary advantage of a clicker system is to promote active student engagement in the class. Faculty who have used clickers in large classes (generally in class sizes over 70 students) report that they would never again teach these large classes without a clicker system. They view the pedagogical advantages of these systems as superior to a traditional lecture environment.

The initial clicker policy at MSU provided faculty the opportunity to gain experience with the clicker system of their choice, while at the same time allowing the clicker technology and market to mature. As a result, clicker use almost tripled from Spring 2006 to Spring 2007 (from 4 different clicker systems in 12 courses with over 3,300 students to 6 different clicker systems in 35 courses and over 8,500 students). This approach allowed faculty academic freedom in conducting their classes in the manner they believed appropriate. However, it also resulted in some deleterious effects for students. It was possible (even likely) that a student would need to purchase or register, and carry, multiple clickers in a single semester, and possibly different clickers the next semester. The net effect was increased costs for students and the possibility of bringing the wrong clicker to class. Further, the use of multiple clicker systems also meant that faculty were not able to obtain any organized support from MSU.

Clicker technology and the clicker market have significantly matured. Students and faculty both have commented on the cost and inconvenience to students of having too great a variety of clickers in use at MSU. LC&T recently conducted its third annual meeting with faculty and students who use clickers, and there was consensus that the time had come for the MSU community to make an attempt to limit clicker variety. We recognize that clicker technology and its associated software will continue to evolve, and we also do not wish to impose artificial limits on instructors’ ability to make informed choices of tools to use in instruction. MSU would like to be able to provide guidance to faculty who are considering the use of clickers in their classes. Additionally, MSU would like to facilitate the student experience with all types of instructional technology and to minimize student expenses and inconvenience. Consequently, MSU will not *standardize* on a selected clicker, but will *recommend and support* two different clicker systems, recognizing that one system is unlikely to support all pedagogical objectives. The choices of clicker are tempered by the following guidelines:

1. Primacy of Instructor Determination of Instructional Methods – Although individual faculty members are not restricted in their choice of a clicker system and may, for pedagogical reasons, choose an alternate system, LC&T will now only support two systems.
2. MSU Student Data Privacy – A preference exists for clicker systems that do not export or otherwise make student data available to vendor-owned servers or systems.
3. Ease of Use – A preference exists for clicker systems that are easy to use, that are transparent in their use, for both faculty and for students.
4. Cross-platform Usability – A preference exists for clicker systems that work with Mac, Windows and Unix-based operating systems.
5. Usable with Any Text – A preference exists for clicker systems that are independent of textbook decisions. These are two separate decisions that should usually not be commingled. However, some faculty may prefer a clicker system that is supported by their text of choice.
6. Enhance the Student Experience – The use of clickers should not result in significant increased costs to students, and the choice of clicker systems should be as consistent as possible across courses.
7. Ability to be Supported within ANGEL and LON-CAPA Course Management Systems – Clickers which meet this standard facilitate recording of student participation in CMS grade books. A preference exists for such clicker systems.
8. Vendor Support and Product Durability – LC&T will make information about vendor responsiveness, in terms of providing faculty and student support, and product durability, as judged by faculty who have used the systems in the past, available to faculty. A preference exists for clicker systems which produce good records of vendor responsiveness and product durability.
9. Pricing – The pricing of the clickers, base stations and software should be as economical as possible.

At this point in time, MSU is recommending that faculty use either the eInstruction CPS LCD – RF or the iClicker student response systems. These clicker systems should provide the pedagogical capabilities needed by the vast majority of faculty. Both systems have relative strengths based upon our analysis and feedback from current users. iClicker best meets our concerns for student cost and student data privacy. However, iClicker supports only multiple-choice question formats (it does not support numeric responses). eInstruction supports numeric input, and is in the process of developing ANGEL support that could reduce or eliminate the need for students to register their clicker with an outside party.

Feature	PRODUCT	
	 <b>I&gt;Clicker</b>	 <b>eInstruction CPS RF – LCD</b>
Ease of Use	Easy, Transparent	Some Setup, depends upon mode used (CPS or PowerPoint)
Bundled with Text	Can be used independent of textbook, some textbooks supported	Can be used independent of textbook, some textbooks supported
Base Station Dimension	7.5" x 5" x 3.5" (including antenna) LCD display of responses.	4.25" x 2.5" x 1.5"
Cost of base station	\$300 (one given for every adoption of 100 students/remotes)	\$250 (one provided to every adopting faculty member)
Software	Included on flash drive provided with base station/ can check for upgrades at any time	Included on CD or download from vendor web site
Approximate Clicker Dimensions	6" long x 2" wide x ½" deep	4.75" long x 2.25" wide x 1.25" deep
Clicker Numeric Input	No	Yes
Clicker LCD Display	No	Yes
Student Registration	In Class, or on iClicker Web site, potential for registration within LON CAPA	On CPS site (potential for integration with ANGEL) No plans for LON CAPA at this time
Student Cost	Purchase cost only (@\$33)	Purchase cost (@ \$21)
Registration/Site License Fee	No	Yes (\$35 lifetime, \$13 per term; \$39 maximum.)
Signal Type/Range	915 MHz Radio Frequency/ 1000 feet	Radio Frequency/ 200 feet
Battery Type	3 AAA (200 hours)	2 AA
Low Battery Indicator	Yes	Yes
PC Compatible	Yes	Yes
MAC Compatible	Yes	Yes
Student Data Issues	All data remains with instructor	Student data might need to be transmitted off-campus
Re-sellable to bookstore	Yes	Yes

## References

Beatty, I. 2004. Transforming student learning with classroom communication systems. *Educause Research Bulletin*, 3: 2-13. Available at <http://www.educause.edu/ir/library/pdf/ERB0403.pdf>

Bergtrom, G. 2006. Clicker sets as learning objects. *Interdisciplinary Journal of Knowledge and Learning Objects*. 2: 105-110. Available at <http://www.ijkl.org/Volume2/v2p105-110Bergtrom.pdf>