

Audience Response Systems (ARS) and Clicker Technology

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1. Student Evaluation of Audience Response Technology in Large Lecture Classes (EJ786778)

Author(s): MacGeorge, Erina L.; Homan, Scott R.; Dunning, John B., Jr.; Elmore, David; Bodie, Graham D.; Evans, Ed; Khichadia, Sangeetha; Lichti, Steven M.; Feng, Bo; Geddes, Brian

Source:, Educational Technology Research and Development, v56 n2 p125-145 Apr 2008

Pub Date: 2008-04-00

Pub Type(s): Journal Articles; Reports - Research

Peer-Reviewed: Yes

Descriptors:

Undergraduate Students; Campuses; Student Evaluation; Student Attitudes; Audience Response; Questionnaires; Lecture Method; Educational Technology; Classroom Techniques

Abstract:

In the past few years, audience response technology (ART) has been widely adopted on college campuses, and is especially popular among instructors of large lecture classes. Claims regarding ART's benefits to students have received only limited empirical evaluation, and prior studies exhibit methodological limitations. The current study provides a multi-dimensional evaluation, utilizing a newly-developed measure, the "Audience Response Technology Questionnaire" (ART-Q). Data were provided at three points during a semester by undergraduate students (n = 854) who used ART in three large lecture university courses. Results indicate moderately positive evaluations of ART on some dimensions (e.g., ease of use, impact on attendance), with less positive evaluations on others (e.g., influence on preparation for class). These evaluations showed some variability across time of semester and course, but were not substantially affected by gender, ethnicity, or year in school. Findings are discussed with respect to the need for future research on instructors' techniques for using ART and their influence on student perceptions and outcomes. **Note:** The following two links are not applicable for text-based browsers or screen-reading software.

2. Using Wireless Response Systems to Replicate Behavioral Research Findings in the Classroom (EJ784819)

Author(s): Cleary, Anne M.

Source:, Teaching of Psychology, v35 n1 p42-44 Jan 2008

Pub Date: 2008-01-00

Pub Type(s): Journal Articles; Reports - Descriptive

Peer-Reviewed: Yes

Descriptors:

Class Activities; Learning Activities; Research Methodology; Tests; Psychology; Behavioral Science Research; Attendance; Student Motivation; Audience Response; Science Process Skills; Demonstrations (Educational); Spreadsheets

Abstract:

College instructors are increasingly relying on wireless clicker systems as instructional tools in the classroom. Instructors commonly use clicker systems for such classroom activities as taking attendance, giving quizzes, and taking opinion polls. However, these systems are uniquely well suited for the teaching of psychology and other courses that emphasize behavioral research methods. Specifically, instructors can use the clicker system to engage students in an in-class replication of a known empirical phenomenon. This article describes two classroom demonstrations that reveal the usefulness of wireless clicker systems for replicating empirical phenomena in behavioral research. (Contains two notes.) **Note:** The following two links are not applicable for text-based browsers or screen-reading software.

3. Efficacy of Personal Response Systems ("Clickers") in Large, Introductory Psychology Classes (EJ784815)

Author(s): Morling, Beth; McAuliffe, Meghan; Cohen, Lawrence; DiLorenzo, Thomas M.

Source:, Teaching of Psychology, v35 n1 p45-50 Jan 2008

Pub Date: 2008-01-00

Pub Type(s): Journal Articles; Reports - Evaluative

Peer-Reviewed: Yes

Descriptors:

College Students; Student Attitudes; Tests; Student Motivation; Audience Response; Technology Uses in Education; Psychology; Introductory Courses; Feedback (Response)

Abstract:

Four sections of introductory psychology participated in a test of personal response systems (commonly called "clickers"). Two sections used clickers to answer multiple-choice quiz questions for extra credit; two sections did not. Even though we used clickers very minimally (mainly to administer quizzes and give immediate feedback in class), their use had a small, positive effect on exam scores. On anonymous course evaluations, students in one clicker section reported that regular attendance was more important, but otherwise, students in clicker sections (compared to traditional sections) did not report feeling significantly more engaged during class. We suggest that future researchers might combine clicker technology with other, established pedagogical techniques. (Contains two tables and three notes.) **Note:** The following two links are not applicable for text-based browsers or screen-reading software.

4. Benefits of Electronic Audience Response Systems on Student Participation, Learning, and Emotion (EJ785511)

Author(s): Stowell, Jeffrey R.; Nelson, Jason M.

Source:, Teaching of Psychology, v34 n4 p253-258 Dec 2007

Pub Date: 2007-12-00

Pub Type(s): Journal Articles; Reports - Evaluative

Peer-Reviewed: Yes

Descriptors:

Audience Response; Student Participation; Psychology; Lecture Method; Achievement Need; Feedback (Response); Questionnaires; Student Attitudes; Emotional Response; Computer Uses in Education; Undergraduate Students; Teaching Methods

Abstract:

We compared an electronic audience response system (clickers) to standard lecture, hand-raising, and response card methods of student feedback in simulated introductory psychology classes. After hearing the same 30-minute psychology lecture, participants in the clicker group had the highest classroom participation, followed by the response card group, both of which were significantly higher than the hand-raising group. Participants in the clicker group also reported greater positive emotion during the lecture and were more likely to respond honestly to in-class review questions. (Contains three tables.)

Note: The following two links are not applicable for text-based browsers or screen-reading software.

5. Empowering or Compelling Reluctant Participators Using Audience Response Systems (EJ778944)

Author(s): Graham, Charles R.; Tripp, Tonya R.; Seawright, Larry; Joeckel, George L., III

Source: Active Learning in Higher Education, v8 n3 p233-258 2007

Pub Date: 2007-00-00

Pub Type(s): Journal Articles; Reports - Research; Tests/Questionnaires

Peer-Reviewed: Yes

Descriptors:

Student Attitudes; Audience Response; Audiences; Student Surveys; Teaching Methods; Undergraduate Study; Student Reaction; Instructional Design; Active Learning

Abstract:

This article investigates the impact of an audience response system (ARS) on student engagement in undergraduate university courses. A survey was administered to students in a dozen courses piloting the ARS system. On 13 out of 14 measures, the majority of students thought the system was helpful. Overall, students were more positive about the use of the ARS in courses that used the tool for formative feedback (empowering) rather than for grading or attendance purposes (compelling). The authors discuss the positive impact of the ARS on the engagement of "reluctant participators" or students who reported that they are least likely to participate in class under normal conditions. Reluctant participators' perceptions of the helpfulness of the ARS were compared to those of non-reluctant participators. Finally, student comments were analyzed to determine why students with the most negative feelings about the ARS felt the way they did and which teaching practices using the ARS were perceived to have the greatest value by the students. (Contains seven figures and four tables. Appended are: Faculty Survey Instrument and Student Survey Instrument.) **Note:** The following two links are not applicable for text-based browsers or screen-reading software.

6. Are We Having Fun Yet? Interactive Lecturing Techniques for Librarians

Jackson, Andy

ALISS quarterly, vol. 2, no. 4, pp. 35-39, Jul 2007

Abstract

Evaluates a few interactive methods which librarians may wish to use to enrich their teaching activities. These include the Cephelonian method, which is built on liberal use of colour, sound, and image (music is played during the prelude to the lecture commencing and at the end) and allows greater student involvement through the use of "planted" questions, loosely structured into colour-coded groups, but randomly asked.

The lecture is therefore delivered as a sequence of questions and answers, with the questions seeking to contextualise the information being sought. Another approach is library bingo, which is more of an "ice-breaker" than a philosophy of teaching, such as that provided by the Cephalonian style. It is based on a simple conceit (i.e., bingo or lotto) and provides an alternative to a didactic lecture where the presenter runs through a list of resources and services provided by the library. Small-group interactions are a simple tool to be used within the framework of a lecture, while **audience response systems** are a technological innovation whose use can be most clearly observed in TV programmes, such as "Who Wants To Be A Millionaire" during the "Ask The **Audience**" section. (Quotes from original text)

7. Livening Up the Classroom: Using *Audience Response Systems* to Promote Active Learning

Collins, Linda J.

Medical Reference Services Quarterly, vol. 26, no. 1, pp. 81-88, Spring 2007

Abstract:

Audience response system (ARS) **technology** offers considerable promise for bringing more interactivity and engagement to the classroom. Since gaining momentum in the late 1990s, ARS use has been promoted for its ability to provide immediate feedback, focus student attention, identify gaps in knowledge, and enhance student involvement. This inexpensive **technology** is potentially of great value for improving the educational experience of students and instructors alike. (Copies of this article are available for a fee from the Haworth Document Delivery Service, Haworth Press, Inc. E-Mail: getinfo@haworthpressinc.com, Web site <http://www.haworthpress.com>). (Author abstract)

Descriptors:

Computer Assisted Instruction; Cooperative Learning; Teaching Aids; Teaching Methods; **Audience Response Systems**

8. A Clicker for Your Thoughts: *Technology* for Active Learning

Hoffman*, Christina; Goodwin, Susan

New Library World, vol. 107, no. 9, pp. 422-433, 2006

Abstract:

Purpose: The purpose of this study is to provide an initial assessment of an **Audience Response System (clicker technology)** for library instruction as experienced at Texas A&M University Libraries. Design/methodology/approach: Clickers were tested in three different types of instructional sessions with unique class objectives and different student populations. The study provides an overview of the **technology**, followed by a report on some of the benefits and challenges the authors encountered in the classroom. Findings: Clickers are fairly easy to use and provide a fun way to quickly turn traditional classroom lectures into interactive learning experiences. Practical implications: This paper provides concrete applications on how to access student knowledge and implement active learning techniques in the classroom. Originality/value: This paper demonstrates an innovative way librarians can improve library instruction in order to meet information literacy standards and other educational challenges. (Author abstract)

Links: dot gov sites

Audience Response Made Easy: Using Personal Digital Assistants as a Classroom Polling Tool: *Active Learning in Higher Education*. 2007. 8(3)233–258.
<http://www.pubmedcentral.nih.gov/articlerender.fcgi?artid=400520>

Experiences of using an interactive audience response system in lectures
BMC Med Educ. 2003, 3:12.
<http://www.pubmedcentral.nih.gov/articlerender.fcgi?artid=317338>

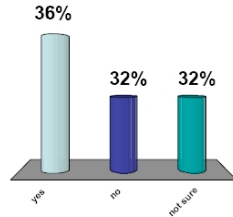
Clickers in the Large Classroom: Current Research and Best-Practice Tips
CBE Life Sci Educ. Spring 2007, 6(1):9–20.
<http://www.pubmedcentral.nih.gov/articlerender.fcgi?artid=1810212>

Example:

<http://hecb.wa.gov/boardmtgs/documents/ABrockhaus-UWBtechpresentation.pdf>

Should intelligent design be allowed to be taught in a science class?

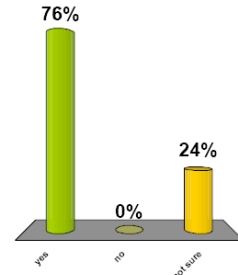
- 1. yes
- 2. no
- 3. not sure



BIS 304 Clickers Example

Should intelligent design be allowed to be taught in a philosophy course?

- 1. yes
- 2. no
- 3. not sure



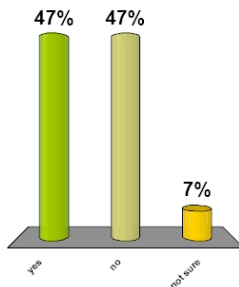
BIS 304 Clickers Example

After describing intelligent design in class, the questions were re-pollled...

BIS 304 Clickers Example

Should id be taught in science?

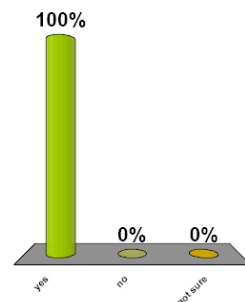
- 1. yes
- 2. no
- 3. not sure



BIS 304 Clickers Example

Should id be taught in philosophy?

- 1. yes
- 2. no
- 3. not sure



BIS 304 Clickers Example