Use of Clickers in Physiology Courses
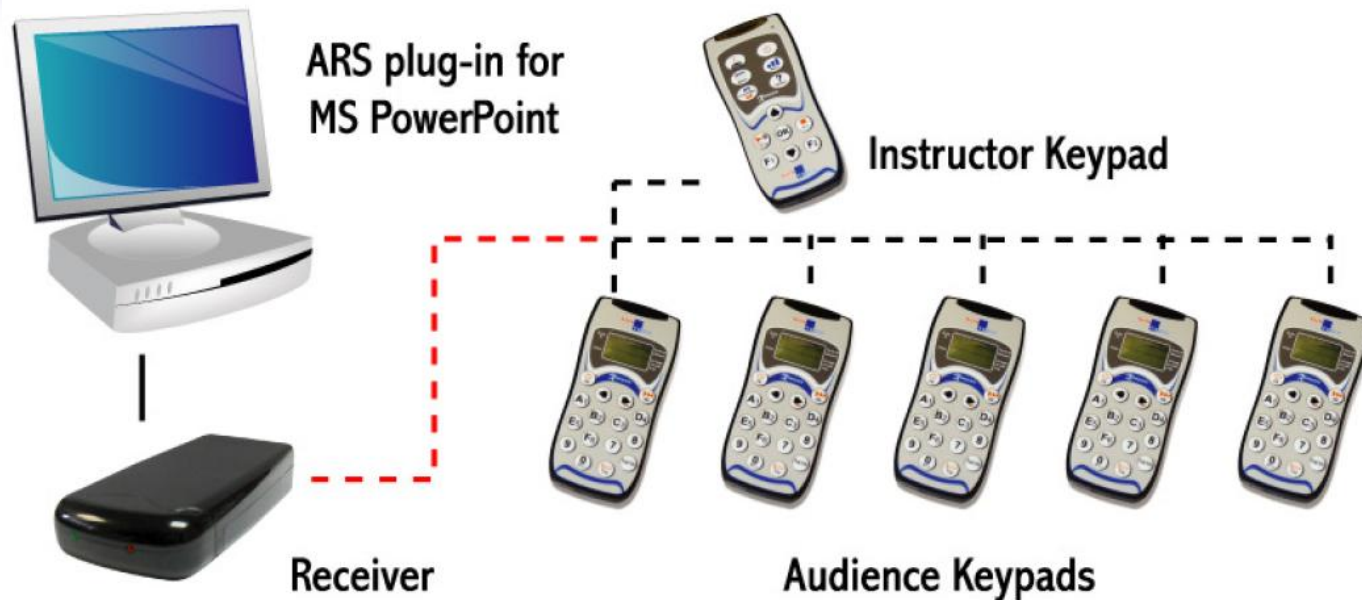
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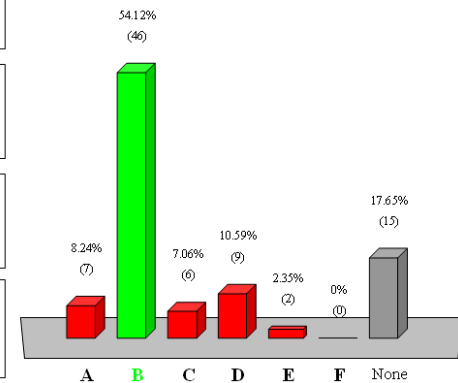# *What are clickers?*

ARS plug-in for MS PowerPoint

Instructor Keypad

Receiver

Audience Keypads

■ *Clickers* are *A*udience (Student) *R*esponse *S*ystem (ARS) that allows instant interaction between teacher and students.

Set-up

- Combines direct wireless hardware with Powerpoint software.

- Students are provided with a hand-held remote control (keypads) that allow rapid tabulation of answers from classroom quizzes, exercises, or voting.

The P wave of ECG represents

A — Atrial repolarization

B — Atrial depolarization

C — Ventricular repolarization

D — Ventricular depolarization

E — Atrial relaxation

54.12% (46)

8.24% (7)   7.06% (6)   10.59% (9)   2.35% (2)   0% (0)   17.65% (15)

A   **B**   C   D   E   F   None

- Student performances can be summarized in charts.

Benefits

- Encourage participation of all students in class.
- Immediate collection and display of student answers
- Teachers can identify the most likely mistake students have made, and give feedback at real time.
- The cost is fairly moderate.

Course information

Frequency of use:

>50% (2010-2011)
~80% (2011-present)

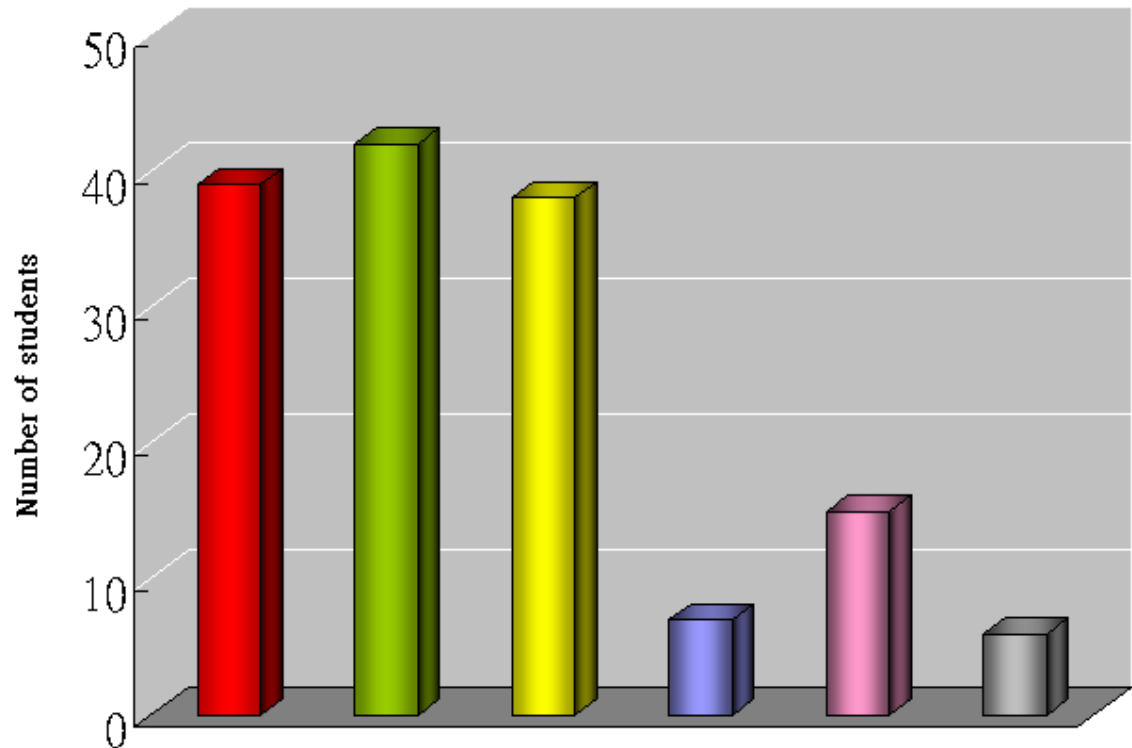| Discipline	BCME1610	MEDN3070	NURS1602	NURS6210	PHAR1431
Date of survey	10 Feb 2011	5 Nov 2010	9 Feb 2011	21 Dec 2010	3 Nov 2010
Students in the course	41	45	198	59	80
Student responded	27	14	127	53	35
Response rate	65.9%	31.1%	64.1%	89.8%	43.8%

Evaluations (NURS1601/NURS1602)

- Student surveyed: 127 (Total number: 198)

- Overall response rate (R): 64%

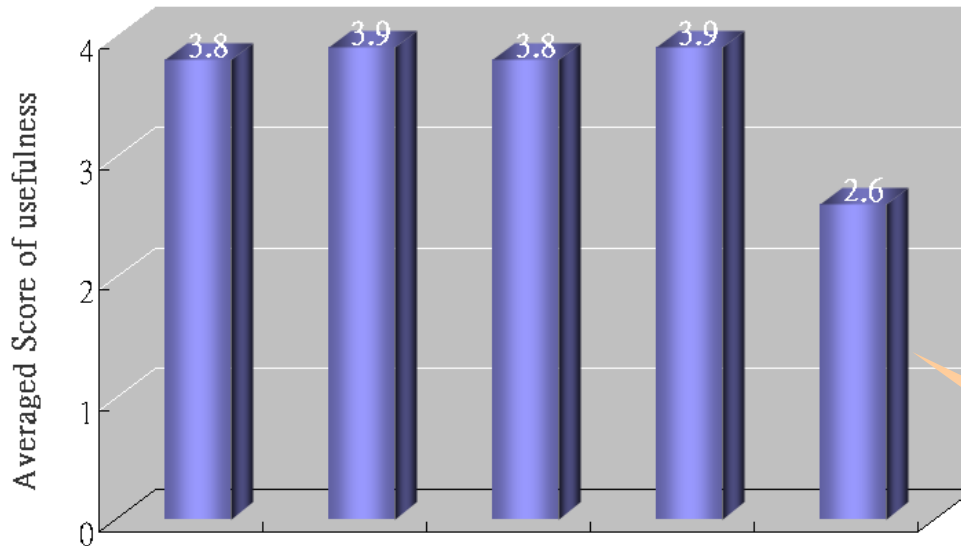- Survey was conducted at the end of second term (NURS1602) in Feb 2011.

Type of use

How were clickers used in this course?

- As lecture summary
- For knowledge consolidation
- As course-end revision
- For preparation of lesson
- As assessment
- As attention grabbers

(N=81, R=40.9%)

Usefulness

Likert scale _1-5_

1. Strongly disagree
2. Disagree
3. Neither agree nor disagree
4. Agree
5. Strongly agree

Lower score is _better_ for the dimension of "Difficulties", as the questions are negative statements.

Averaged Score of usefulness

3.8 — Processes → Interaction, engagement, attention to class

3.9 — Understanding → Clarify, learn more, instant feedback, identify wrong concept

3.8 — Attitudes → Enjoy the course, like more clicker questions

3.9 — Overall comments → Makes class more fun & interesting, do better in exam, clickers for other courses

2.6 — Difficulties → Technical problem, user-friendly, time-consuming

(N=127, R=64.1%)

Results

- **Usefulness (open-ended questions)**
  - **Frequent comments from students:**
    - request for more clicker exercise in class as test of subjects or revision.
    - use clickers for voting and course evaluations.
    - clickers help identify areas that needs further elaboration by the teacher.
    - use clickers for other courses.

Some updates:

■ More colleagues are using clickers in their lectures of different courses held by the School of Biomedical Sciences.

Acknowledgement:

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Thank you.