Effective Learning in the Biosciences 2011

The art of using clickers for Bioscience HE

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A Greater Manchester University

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Clickers 'technology' overview

What are Clickers?

Clickers* are similar to the technology used on the TV program "Who Wants To Be a Millionaire" during 'ask the audience'. A teacher asks questions in-class and students use a 'clicker' to respond. The students' responses can be viewed immediately on projector screen and/or scores can be captured then reports generated for further analysis.

** Clickers are also known as Personal Response Systems (PRS), Audience Response Systems (ARS), Electronic Response Systems (ERS), Student Response Systems (SRS), Interactive Response Systems (IRS), Electronic Voting Systems (EVS), Classroom Response Systems (CRS), Zappers, Voting Pads …. and more.*

Getting click-active…

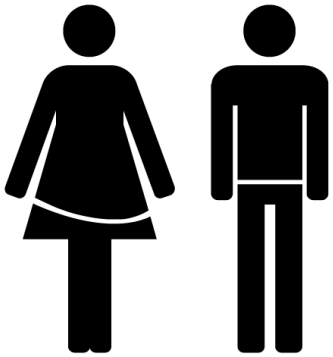
- Do not press the "**GO**" or "**?**" keys at any time
- A **green light** on your keypad will indicate your answer has been received
- You do not need to point the keypad at anything, just press your answer
- If you wish to change your mind, just press a different number/letter, only your last answer will be recorded for each question

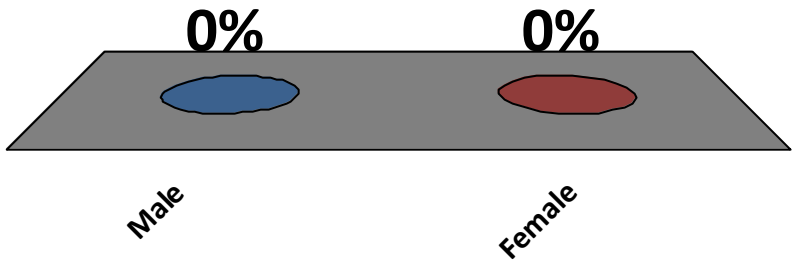
Have you used clickers in your lectures before?

1. Yes
2. No

Are you?

1. Male
2. Female



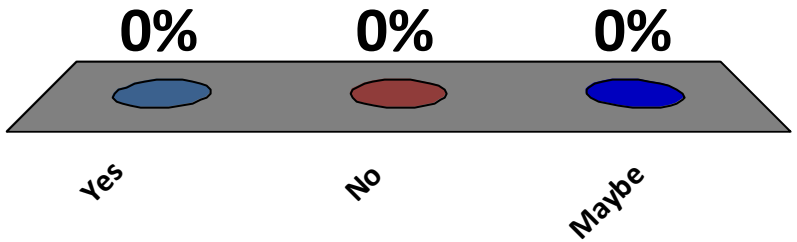


From what you have seen/know so far would you consider using clickers in lectures?

A. Yes

B. No

C. Maybe

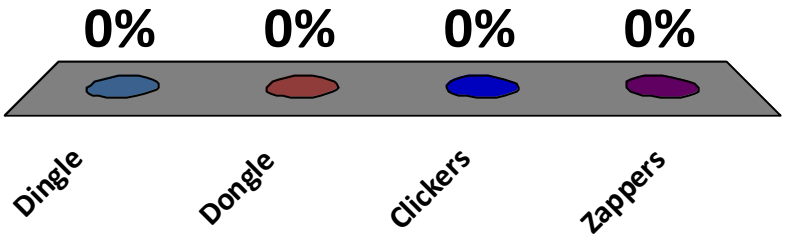


Teaching & learning benefits

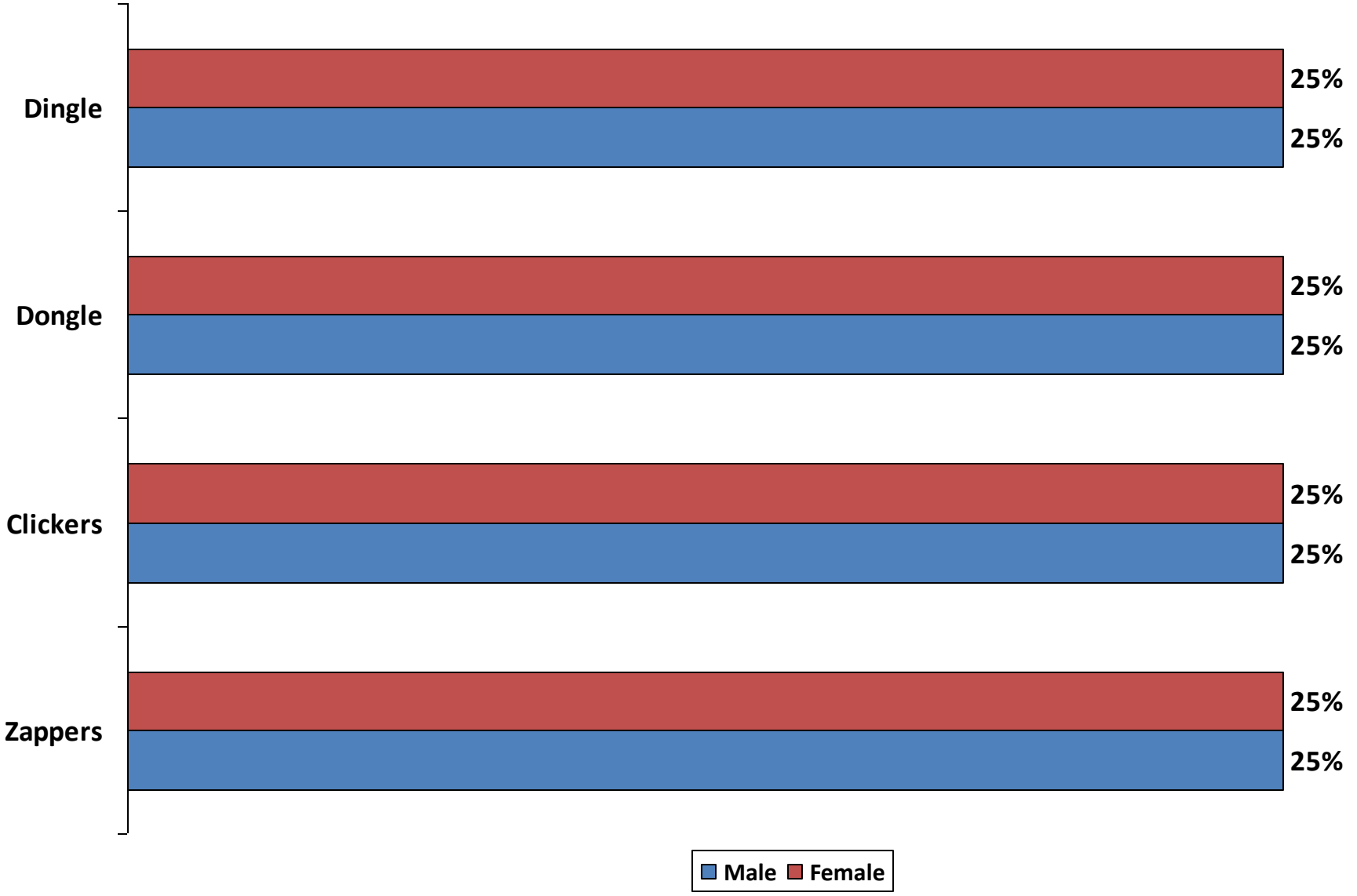
- *Should* enable the in-class assessment of student knowledge – particularly in the area of key concepts
- *Will* provide immediate feedback
- *Might possibly* facilitate adaptive teaching based upon in-class feedback
- *Should* encourage discussion, debate and peer instruction
- *Has the potential to* transform passive teaching into active learning
- *Does* provide a route for the more reticent students to participate
- *Could* add 'fun' to teaching and learning

The receiver, which connects to your PC/laptop via USB is known as ...

1. Dingle
2. Dongle
3. Clickers
4. Zappers



The receiver, which connects to your PC/laptop via USB is known as ...



My Clicker Applications at Salford

1)Formative and timely feedback

- Students can 'benchmark' their progress compared to their colleagues

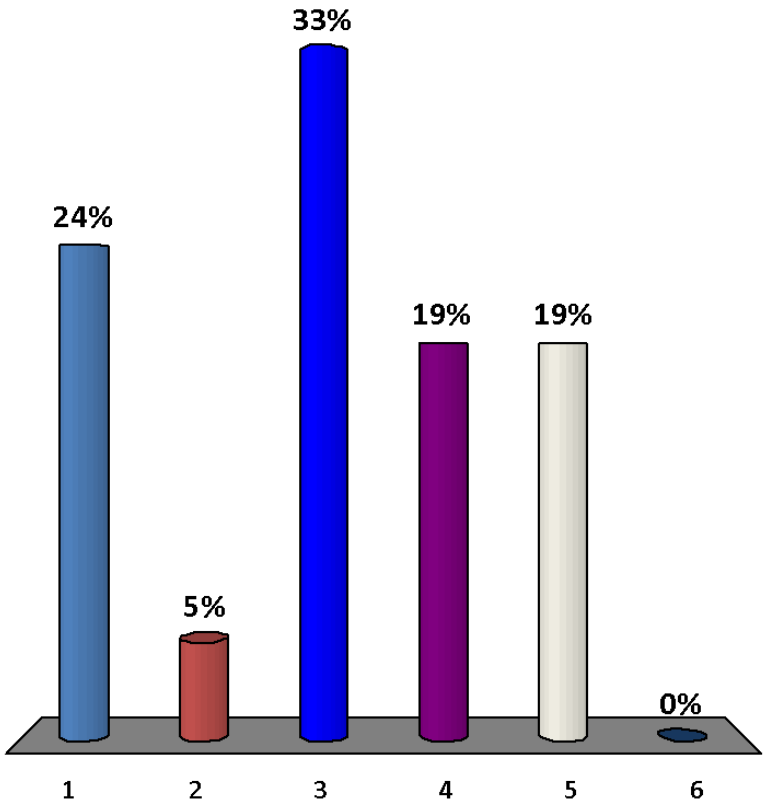
2) Student ability to assimilate and interpret data

3)Summative assessment of peer set learning

4)Student opinion and their feedback

Which programme are you studying?

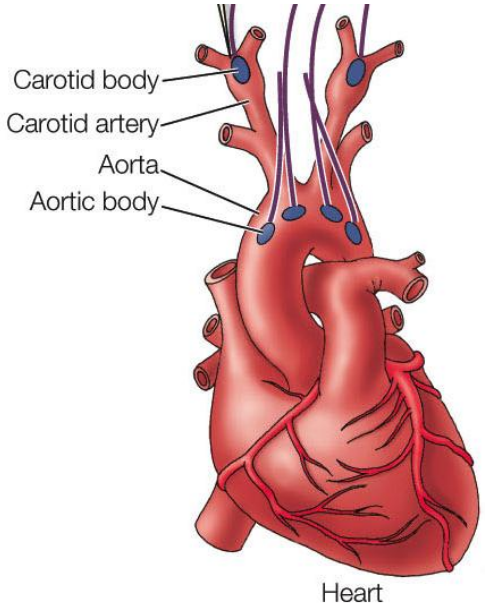
1. Biology
2. Biochemistry
3. Biomedical Sci
4. Zoology
5. Pharmaceutical Sci
6. Toledo exchange

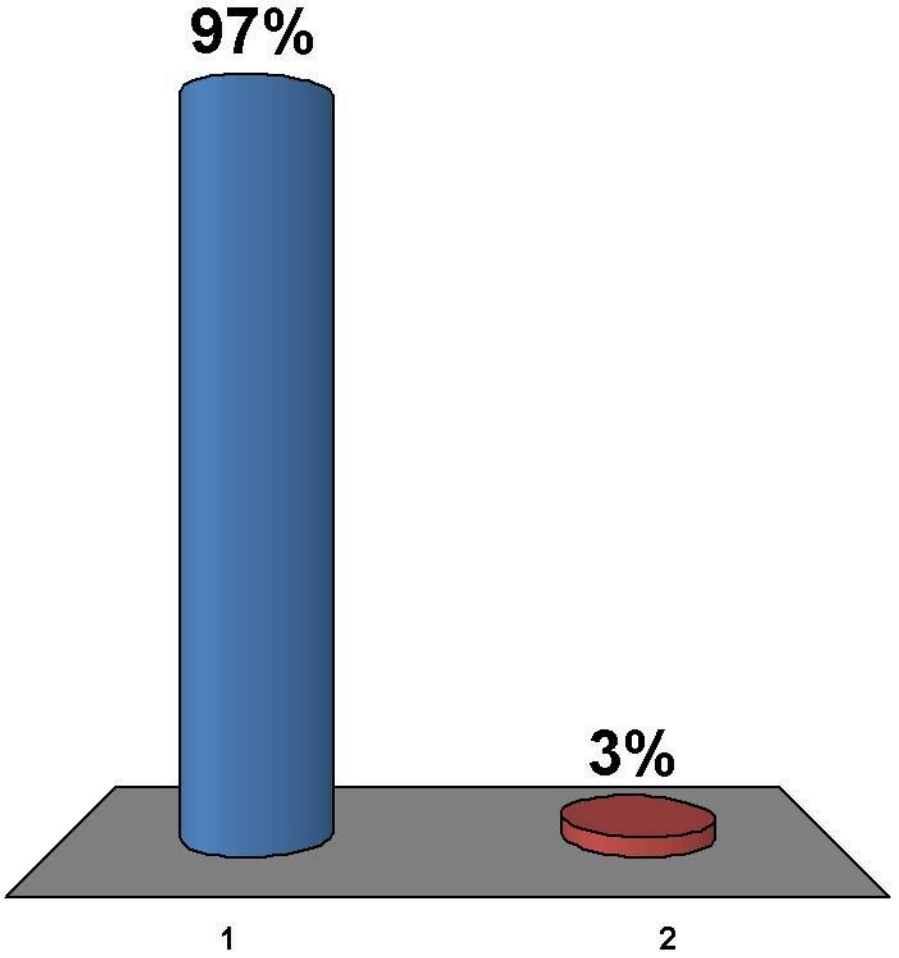


1) Clicker use for formative feedback

Adrenalin increases cardiac output

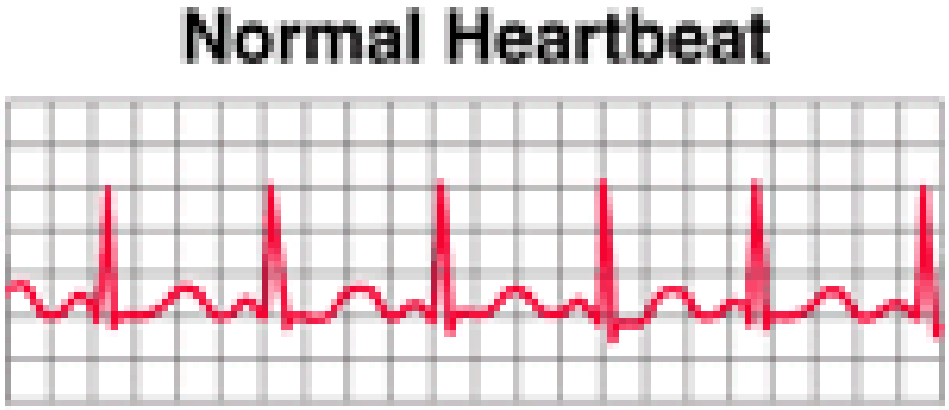
✔1. True
2. False

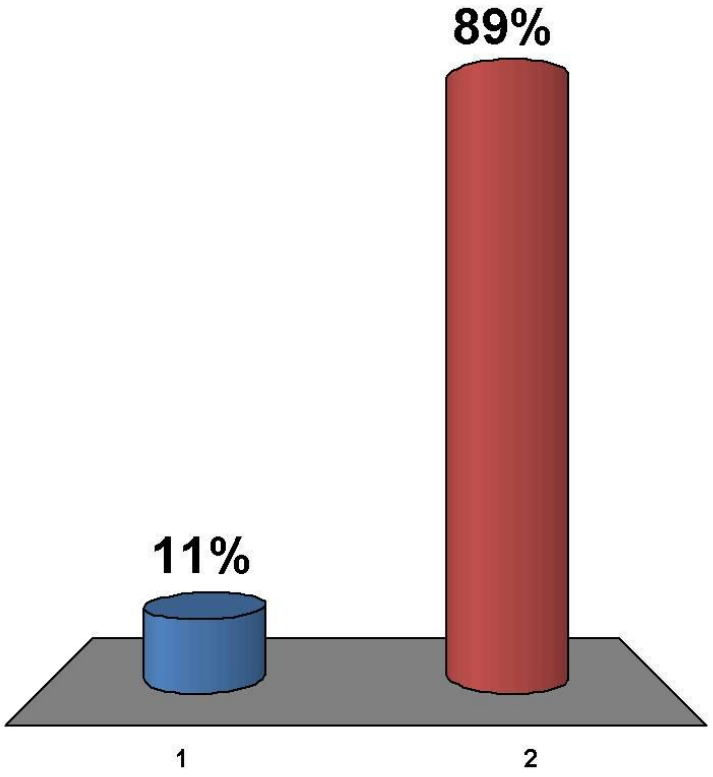




Parasympathetic innervation increases heart rate

1. True
2. False ✓





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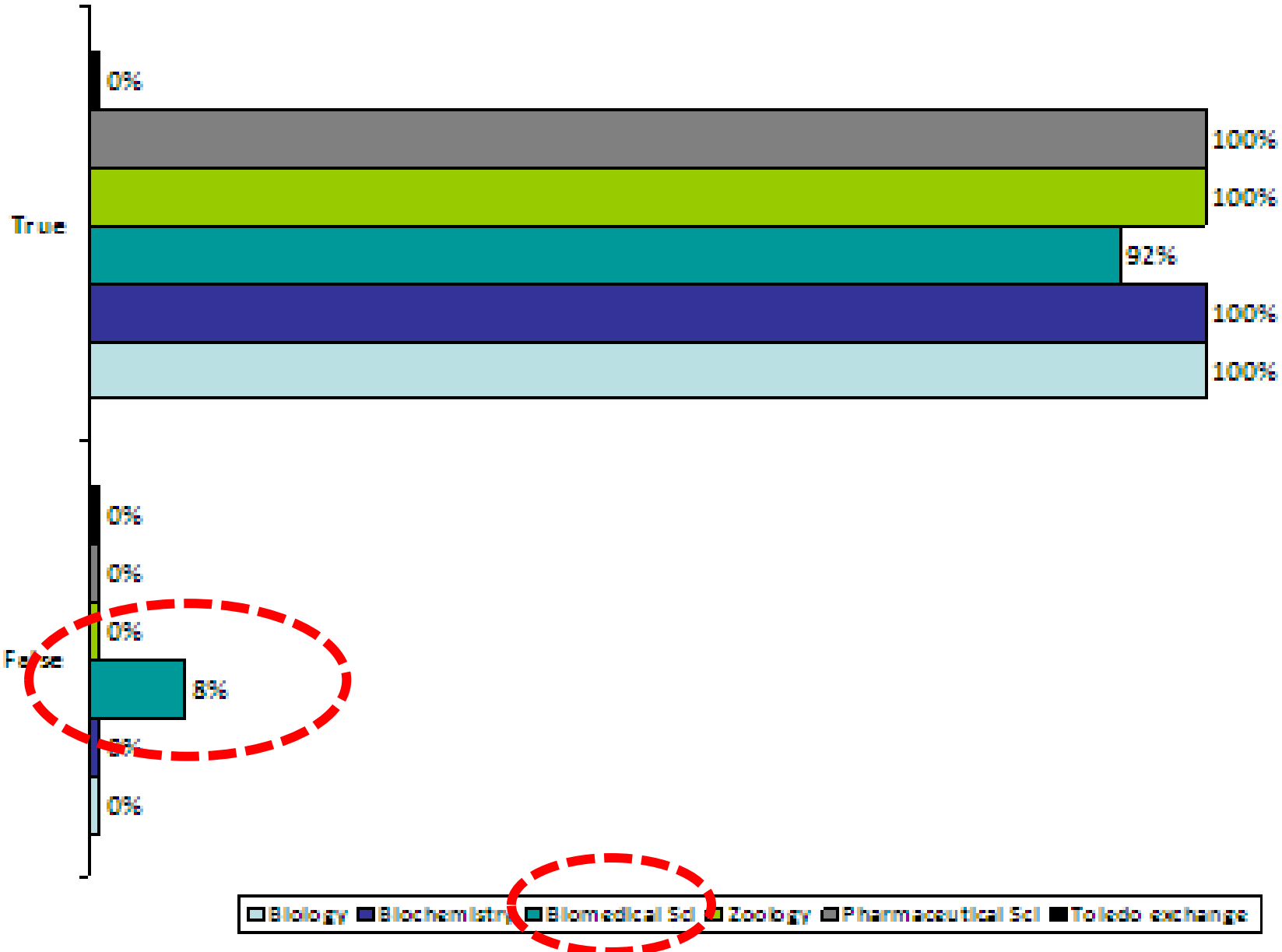

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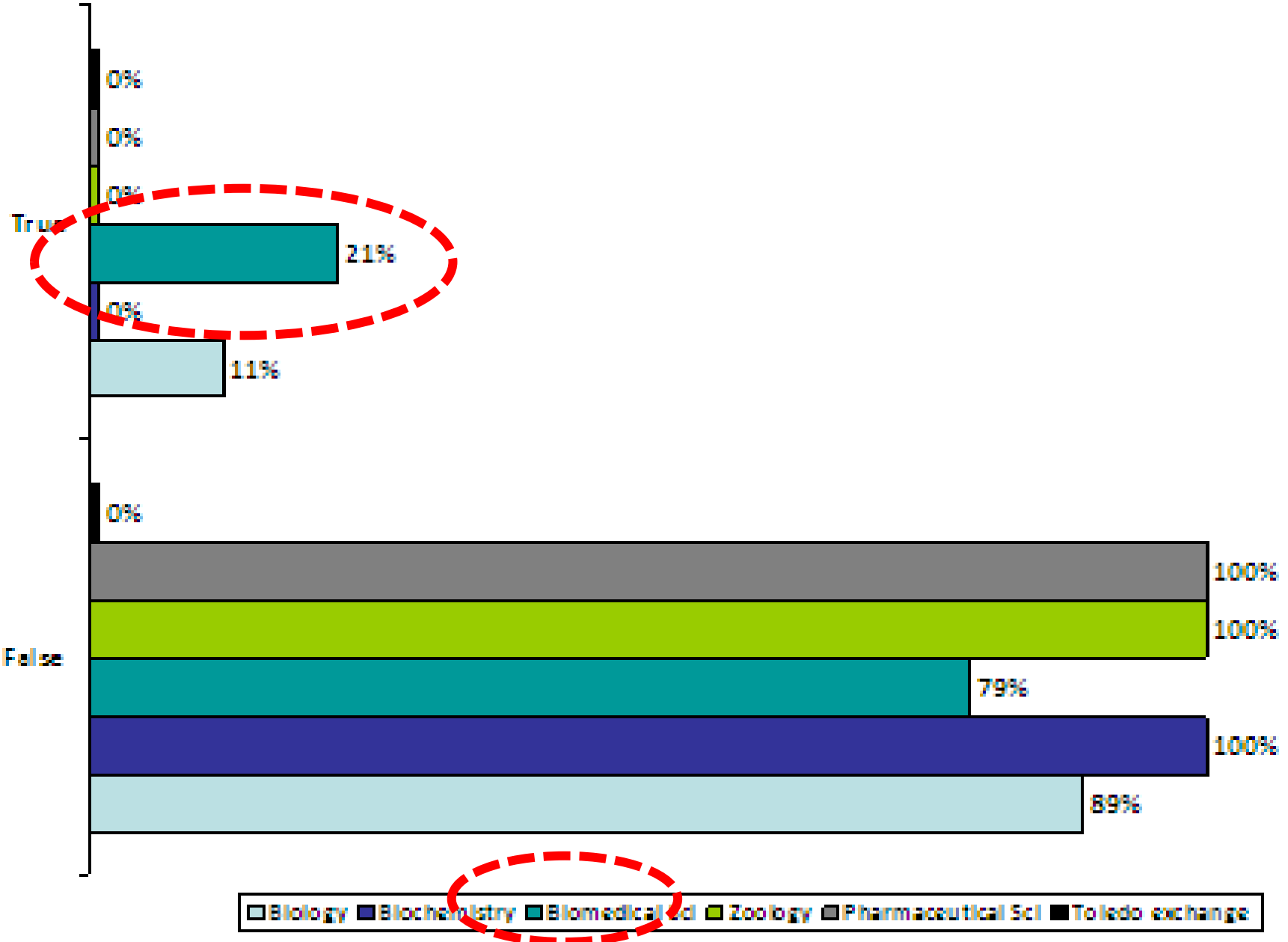
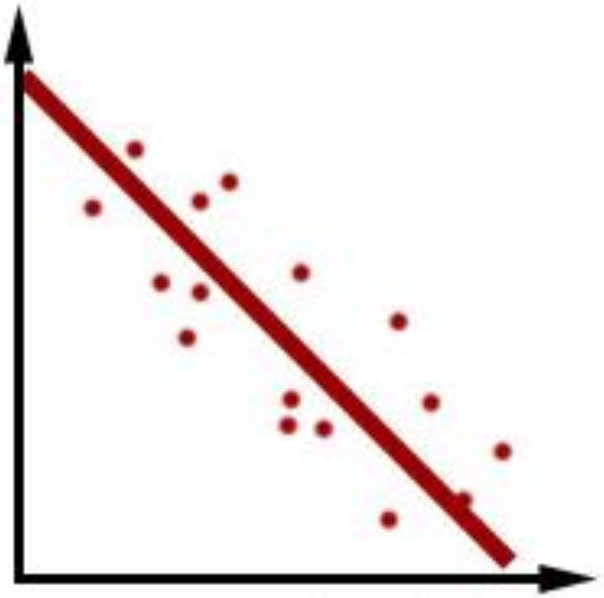
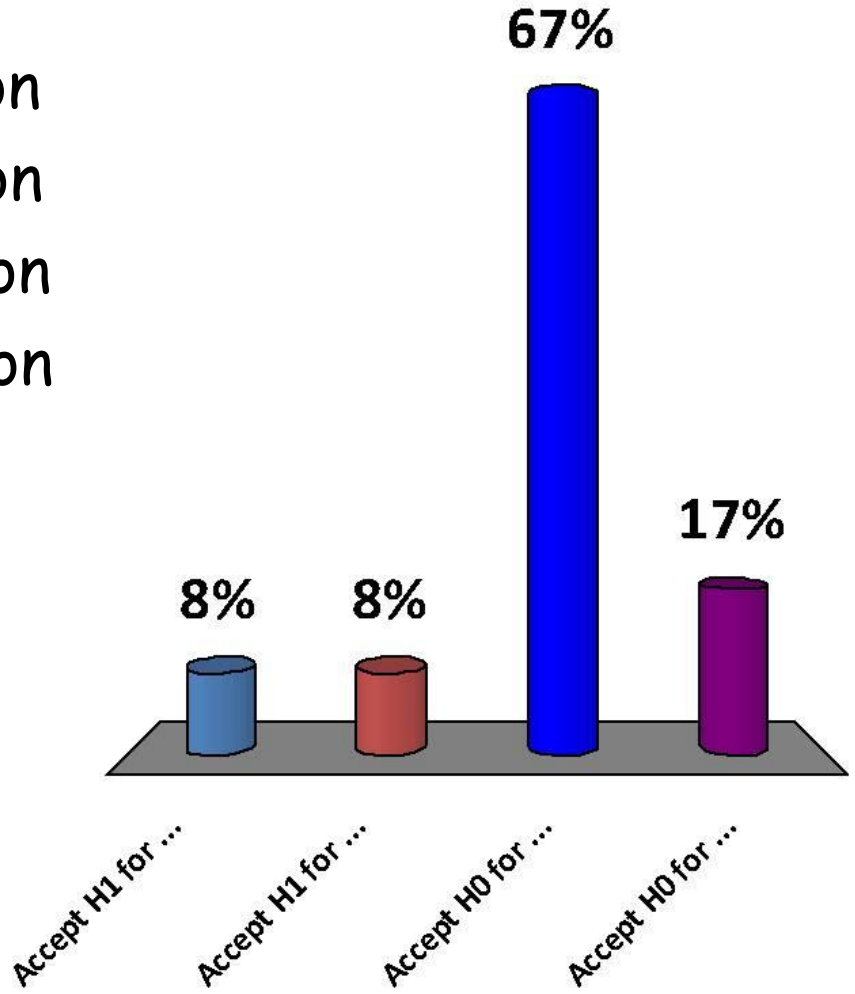


2)Assessment of assimilation and data interpretation skills

Correlation:
You get a high P value and a small R value
What do you conclude for the below curve?

1. Accept H1 for –ve correlation
2. Accept H1 for +ve correlation
3. Accept H0 for –ve correlation
4. Accept H0 for +ve correlation





3)Summative assessment of peer set learning

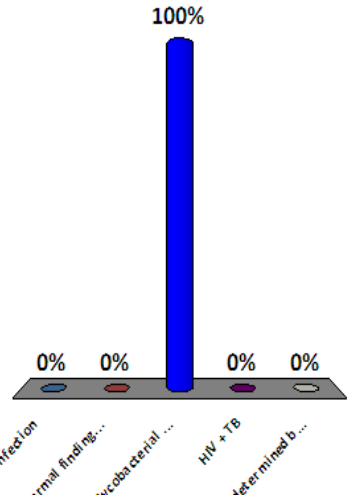
- ALT project Outline
- Student groups - patient case study
  - Diagnosis, treatment management.
- Assessment: submit their answers simultaneously in class by clickers.
- Get instant feedback

Q1 What is the **% predicted FEV1** and **FEV1/FVC ratio** respectively?

1. 68% and 0.44
2. 2.0 and 0.44
3. 2 and 4.5
4. 68% + 4.5
5. 0.44 and 2.0

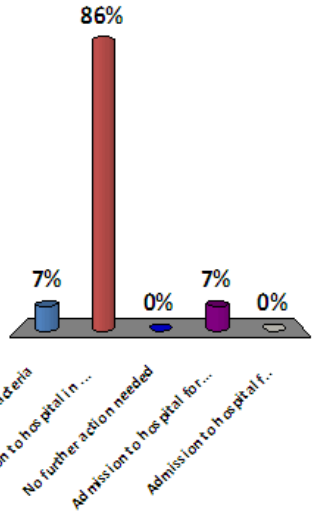
Q3 What do the blood tests + sputum + Xray indicate?

1. HIV infection
2. normal findings
3. Mycobacterial infection (TB)



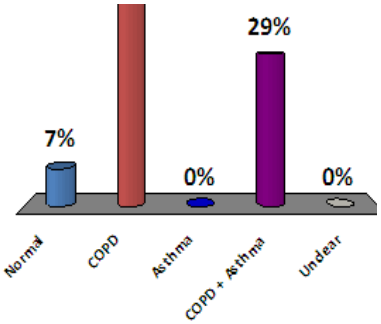
Q5 What course of action would you recommend for the patient?

1. Antibiotic for the bacteria
2. Admission to hospital in isolation for medication
3. No further action needed
4. Admission to hospital for further tests
5. Admission to hospital for medication



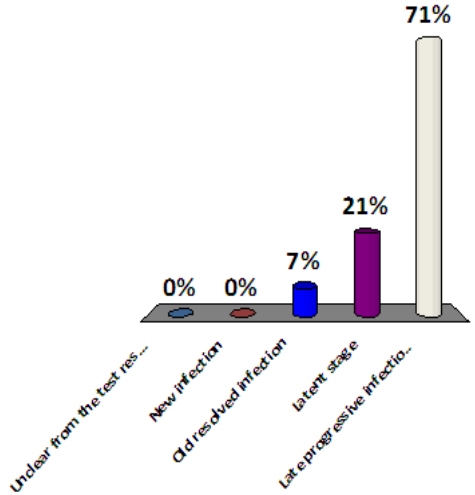
Q2 What do ... **sputum** cellu...

1. Normal
2. COPD
3. Asthma
4. COPD + Asthma
5. Unclear



...uld you predict the ...n is at?

5. Late progressive infectious stage



Export Assessment Data to Excel

1	Turning Results by Participant	
2		
3	Session Name: q1-5 on 7th April	
4	Created: 07/04/2011 12:18	
5		
616	**Group 5**	**Responses**
617	1) Do you feel ready for exams?	2
618	2) Q1 What is the % predicted FEV1 and FEV1/FVC ratio	
619	respectively?	2 i
620	68% and 0.44	
621	COPD	
622	3) Q2 What do the spirometry and the sputum cellular findings	
623	indicate?	4 i
624	COPD	
625	4) Q3 What do the blood tests + sputum + Xray indicate?	3 c
626	Mycobacterial infection (TB)	
627	5) Q4 What stage would you predict the infection is at?	5 c
628	Late progressive infectious stage	
629	6) Q5 What course of action would you recommend for the patient?	2 c
630	Admission to hospital in isolation for medication	
631		60%

Clickers for Summative Assessment - Challenges

- The technology!
- Setting up the database in advance:
  - Need clicker ID in advance
  - Setup database on the PC to be used

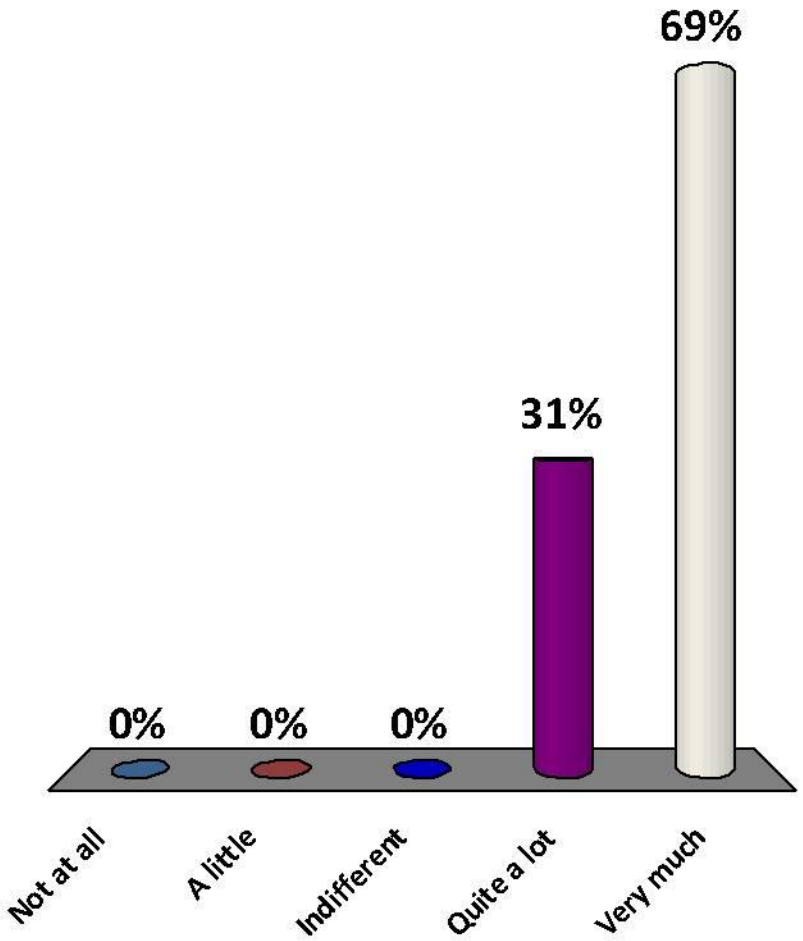
4) Student evaluation and feedback

- What do our customers think?
- Lichert scale 1-5: student clicker ratings
- Tutor awareness of student needs

  Jackson and Trees, 2003; Nichol and Boyle, 2003)

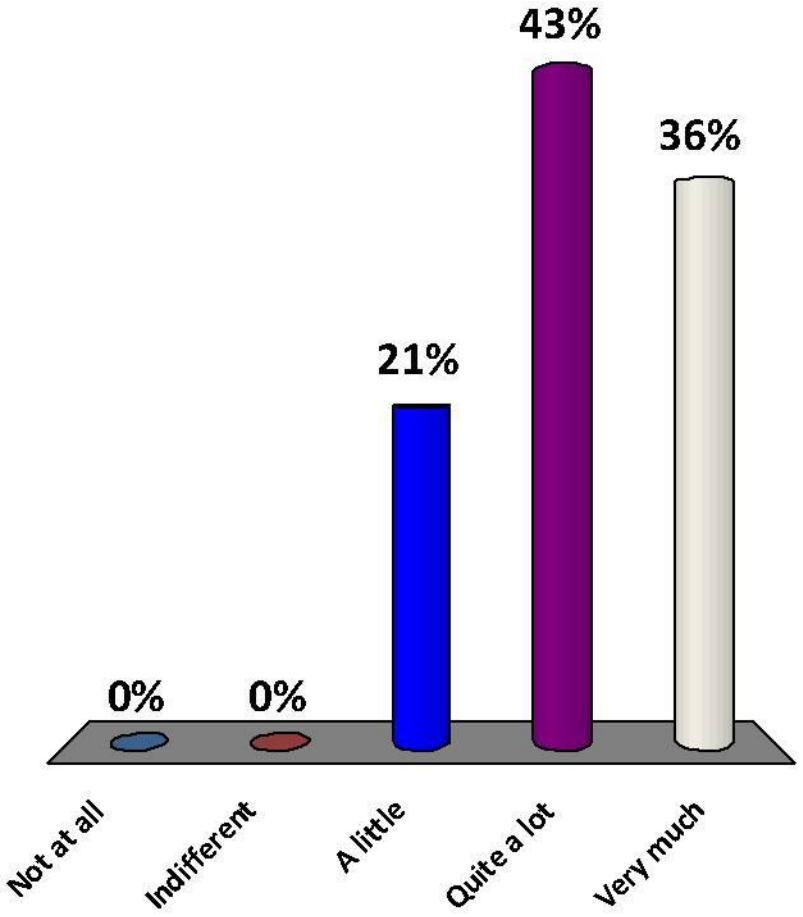
Rate your opinion on clicker use
Do you like using them:

1. Not at all
2. A little
3. Indifferent
4. Quite a lot
5. Very much



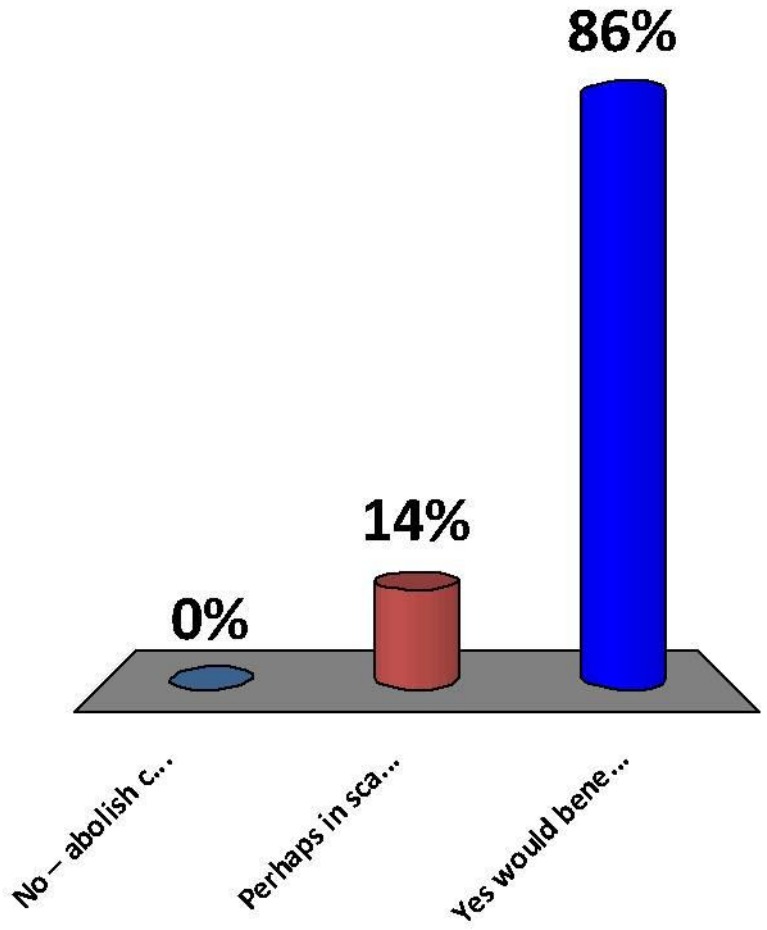
Do you feel clickers help you learn?

1. Not at all
2. Indifferent
3. A little
4. Quite a lot
5. Very much



Would you value clickers being used in more lectures?

1. No – abolish clicker use!
2. Perhaps in scattered lectures
3. Yes would benefit from more frequent use



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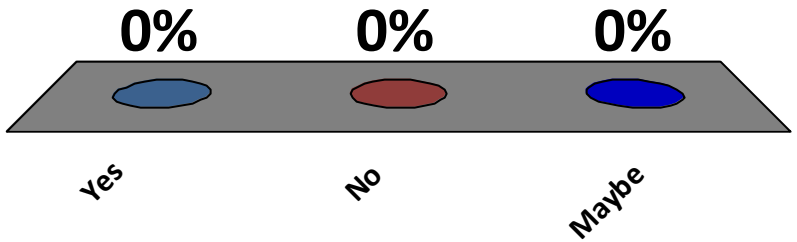

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