The use of technology and social media in teaching Statistics

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A wee intro about the course (Advanced Data Analysis)

- 4th year course (i.e. mainly for Level 4 students)

- 35-45 students (where 5-10 students are Level M students)

- Course Aim: *To integrate material covered in various lecture courses with skills developed through practical work in order to solve real-world problems*

How it all started

- Past:

  - 3 hours weekly (all in the labs)

  - In the 1st hour the material was "introduced"

  - In the final 2 hours students were trying to answer, in R, specific questions about a data set

- Present:

  - 3 hours weekly (not all in the labs)

  - 1 hour as a "lecture"

  - 2 hours in the labs where students worked in groups (most of the time) on open-ended questions (most of the time) about a data set

What about technology and social media? (Part I)

- Each topic is now available online on **RPubs** (white lie)

- The topics are comprised of:

  - a theory section,

  - an application section, and

  - the R code to reproduce everything (i.e. graphs, model inference, etc)

- **RPubs** is a publishing service that makes it easy to share and upload documents

http://rpubs.com/cchanial

What about technology and social media? (Part II)

- **R Markdown** is a file format for making dynamic documents with R. Markdown is a simple formatting syntax for authoring HTML, PDF and MS Word documents

- **RStudio** harnesses the power or **R Markdown** and **RPubs** allows you to upload the documents online

- **Shiny** is an R package that provides a web framework for building web applications

- The **shiny** package makes it simple for R users to turn statistical analyses into interactive web applications that anyone can use

http://bit.ly/RSS_Shiny

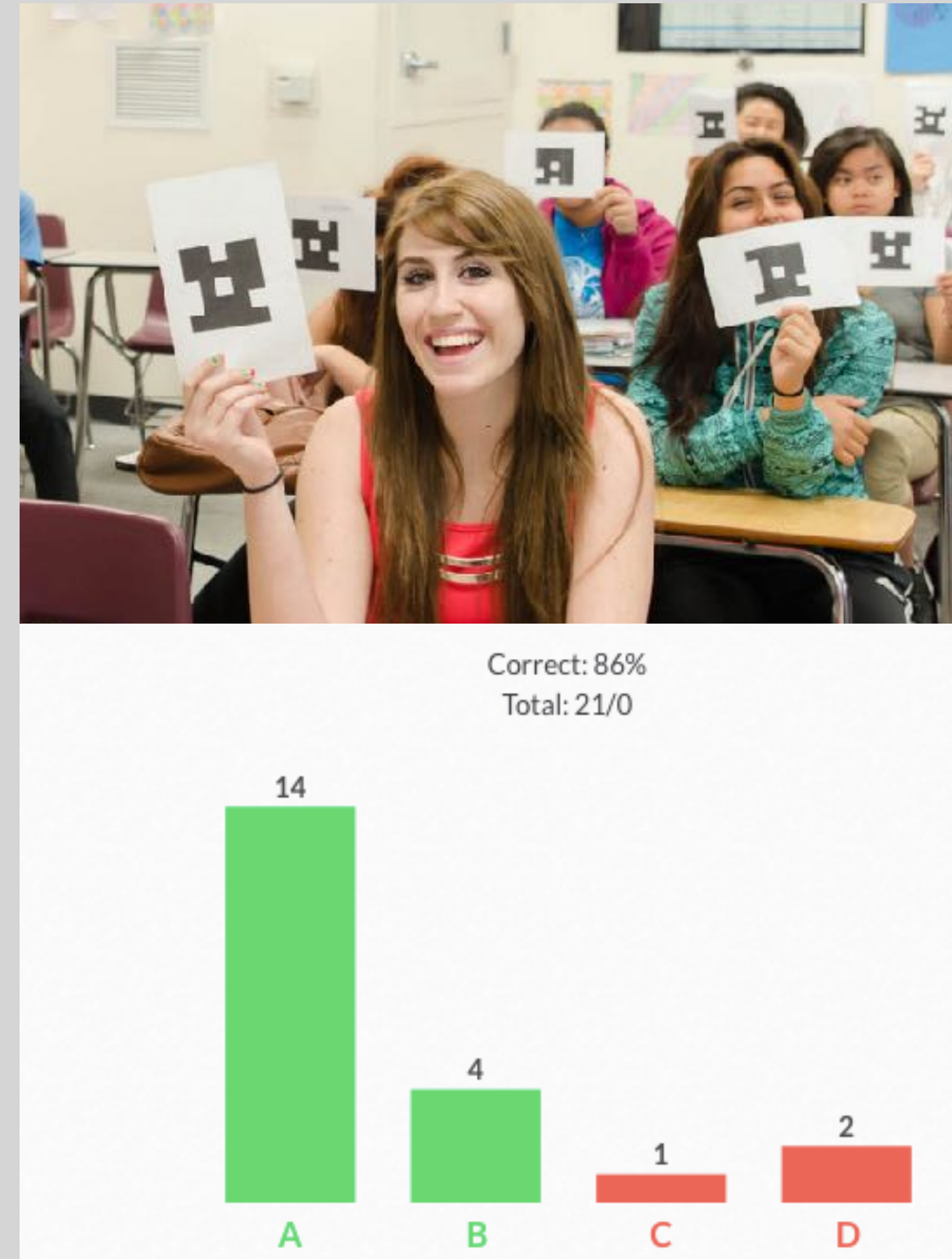# What about technology and social media? (Part III)

- For each topic I created 2-3 short videos "explaining" important concepts about the material.

  (these can be found on Moodle)

- **Screencast-O-Matic** is a screen and webcam recorder

- Really useful for recording on-screen activity for tutorials and presentations (29$/3 years for the Pro version)

- I used **Twitter** to give additional information to students

- I added the twitter feed on Moodle and created a # for the course

#adagla17

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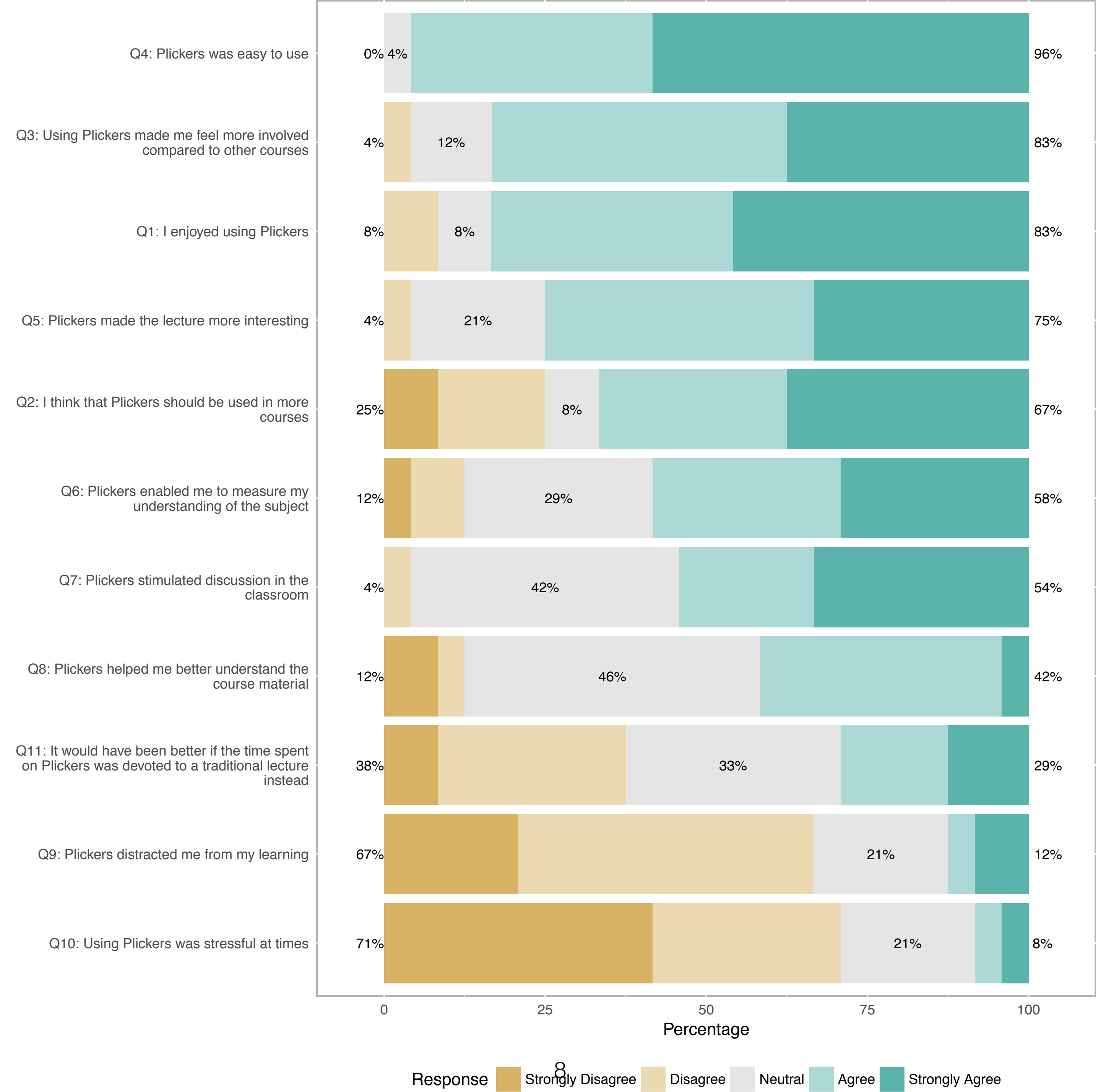
What about technology and social media? (Part IV)

- I used **Plickers** in order to enhance classroom interactivity and active learning

- I used the **Plickers** app on my Ipad to scan the class and get real-time anonymous feedback

https://www.plickers.com

Correct: 86%
Total: 21/0

14

4

1

2

A   B   C   D

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
Q4: Plickers was easy to use	0%	4%			96%
Q3: Using Plickers made me feel more involved compared to other courses	4%		12%		83%
Q1: I enjoyed using Plickers	8%		8%		83%
Q5: Plickers made the lecture more interesting	4%		21%		75%
Q2: I think that Plickers should be used in more courses	25%		8%		67%
Q6: Plickers enabled me to measure my understanding of the subject	12%		29%		58%
Q7: Plickers stimulated discussion in the classroom	4%		42%		54%
Q8: Plickers helped me better understand the course material	12%		46%		42%
Q11: It would have been better if the time spent on Plickers was devoted to a traditional lecture instead	38%		33%		29%
Q9: Plickers distracted me from my learning	67%		21%		12%
Q10: Using Plickers was stressful at times	71%		21%		8%

Percentage

Response Strongly Disagree Disagree Neutral Agree Strongly Agree

8

Last but not least

- <u>htmlwidgets</u> work just like R plots except they produce interactive web applications

- <u>showmeshiny</u> presents a lot of applications (with R code)

- <u>radiant</u> is a browser-based interface for business analytics in R. You can use it online or clone the GitHub repo and run your "own" radiant version

  (<u>ggplotgui</u> is a great alternative)

- <u>shinystan</u> is a GUI for interactive MCMC diagnostics

Summer of what???

- Which Bryan Adams' album featured the hits: Summer of 69, Run to you, It's only Love, and Heaven?

  A. Reckless

  B. Waking Up the Neighbours

  C. Cuts Like a Knife

  D. Into the Fire

Thank you for your attention

http://www.maths.gla.ac.uk/~cchanialidis/