

Gathering Together: Engaging Students with Remote Access to Live Lectures

WCSE 2015

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Outline

- ENGG 2450: Electric Circuits Summer 2014
- Remote Access to Live Lectures
 - Demo!
- Student Survey
- Highlight of Results
- Interesting New Questions

Summer Circuits in the SOE

(ENGG 2450: Electric Circuits)

What makes summer circuits so special?

ENGG 2450: Electric Circuits (a.k.a. Circuits)

- 2nd Year core U of G engineering course
 - Required course for all 7 programs
 - Prerequisite to many additional core courses
- Traditionally a single offering with ~400 students
- Reputation of being a “tough” course

New Summer Circuits

- First offered in Summer 2014
- Only summer offering of an undergraduate class in the SOE
- Primarily offered as remedial class
- Majority of students not in Guelph
 - Co-op jobs or other reasons
- 75 students enrolled



New Lecture Style: Things we did 'differently'

- Simultaneous live (in-class) and remote (live webcast) lectures
 - About 10-20 in-class, 30-40 online
 - Used Adobe Connect to webcast lectures
- Live online chat during lectures
 - Posted on screen so in-class attendees can see
 - Monitored by instructor who responds verbally to questions

The Remote Experience

- Hear only instructor's voice (can't hear classmates)
 - No video of instructor
- See what is written on the projector
 - Live writing, not static slides
- Live contact and active learning via chat
 - Ask questions, respond to instructor's questions/prompts, or 'talk' to friends

Demonstration

<http://uoguelph.adobeconnect.com/engg2450/>

Tips & Tricks

- Tablet with handwriting software (I use a Surface and Windows Journal)
- Repeat in class questions and answers so remote students can hear
- Be patient while students are typing
- Practice with the tech first and be good-humoured about tech failures (you will have at least one!)

Your feedback?

Initial thoughts and questions?

The Survey

What we asked and who responded

Survey Question Categories

- Attendance & Workload
 - Type of lecture attended
 - Time spent on course
- Course Delivery
 - Style, scheduling, likes, dislikes
- Employment
 - Job commitments & accommodations
 - Commuting
- Past Attempts
 - Success in prerequisite course and circuits



Survey Response

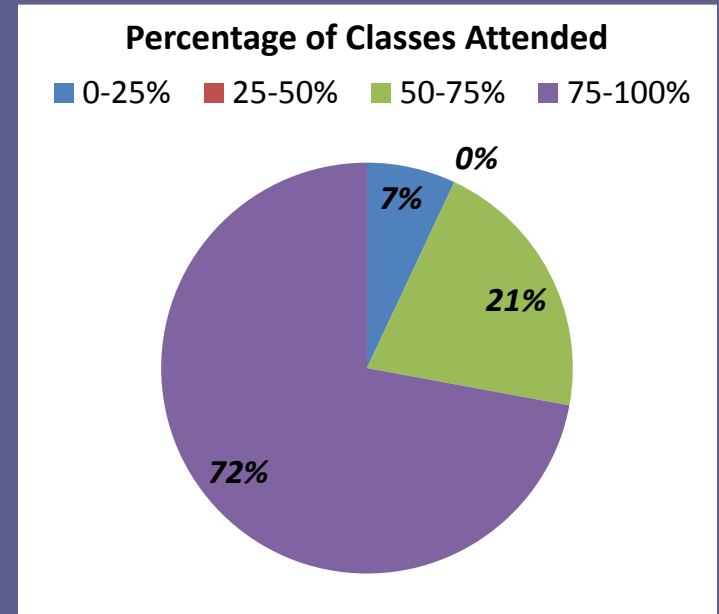
- 46 of 75 students responded (> 60%)
 - 4 responses removed: incomplete survey or incomplete grades
- 42 responses used to aggregate results
- Used final grades to correlate results
 - Respondents final average in line with overall class average (~65%)

And the Survey says....

Some surprising results

Class Attendance & Final Average

- Higher grades correlated to higher attendance
 - Final Average:
 - > 75% Attendance: 70%
 - < 75% Attendance: 50%
- Remote accessibility lead to increased attendance
 - Students attended remotely given the option
 - May not have attended otherwise

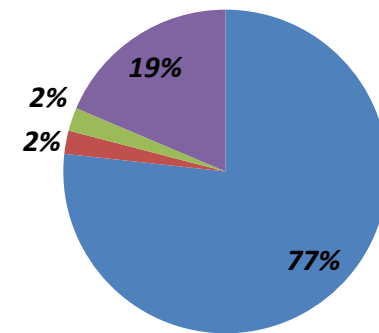


Remote vs. Live Attendance

- Proportion of Attendance:
 - 23% Live, 77% Remote
- Grades essentially equal
 - No academic effect
- More convenient
 - Lectures attended off-campus
 - Some students on-campus but preferred remote attendance
 - Some students found remote attendance less distracting

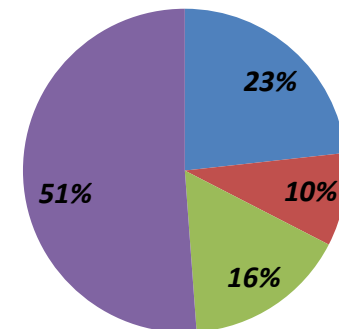
Percentage of Classes Attended
In-Person

■ 0-25% ■ 25-50% ■ 50-75% ■ 75-100%



Percentage of Classes Attended
Remotely

■ 0-25% ■ 25-50% ■ 50-75% ■ 75-100%



Online Chat – Important Feature

■ Positives:

- Very beneficial
- More interactive for remote attendees
- Questions could be asked anonymously
- Students responded to questions

■ Negatives:

- Requires monitoring
- Some comments frivolous
- Questions can be lost
- In-class questions not easily communicated to remote attendees

Overall Effects on Learning

■ Positive:

- Remote access
- Course organization
- Tutorials
- Only one course
- Motivation for passing

■ Negative:

- Work/School/Summer balance
- Lack of collaboration (off-campus)
- Online distractions



Still more questions...

The future considerations

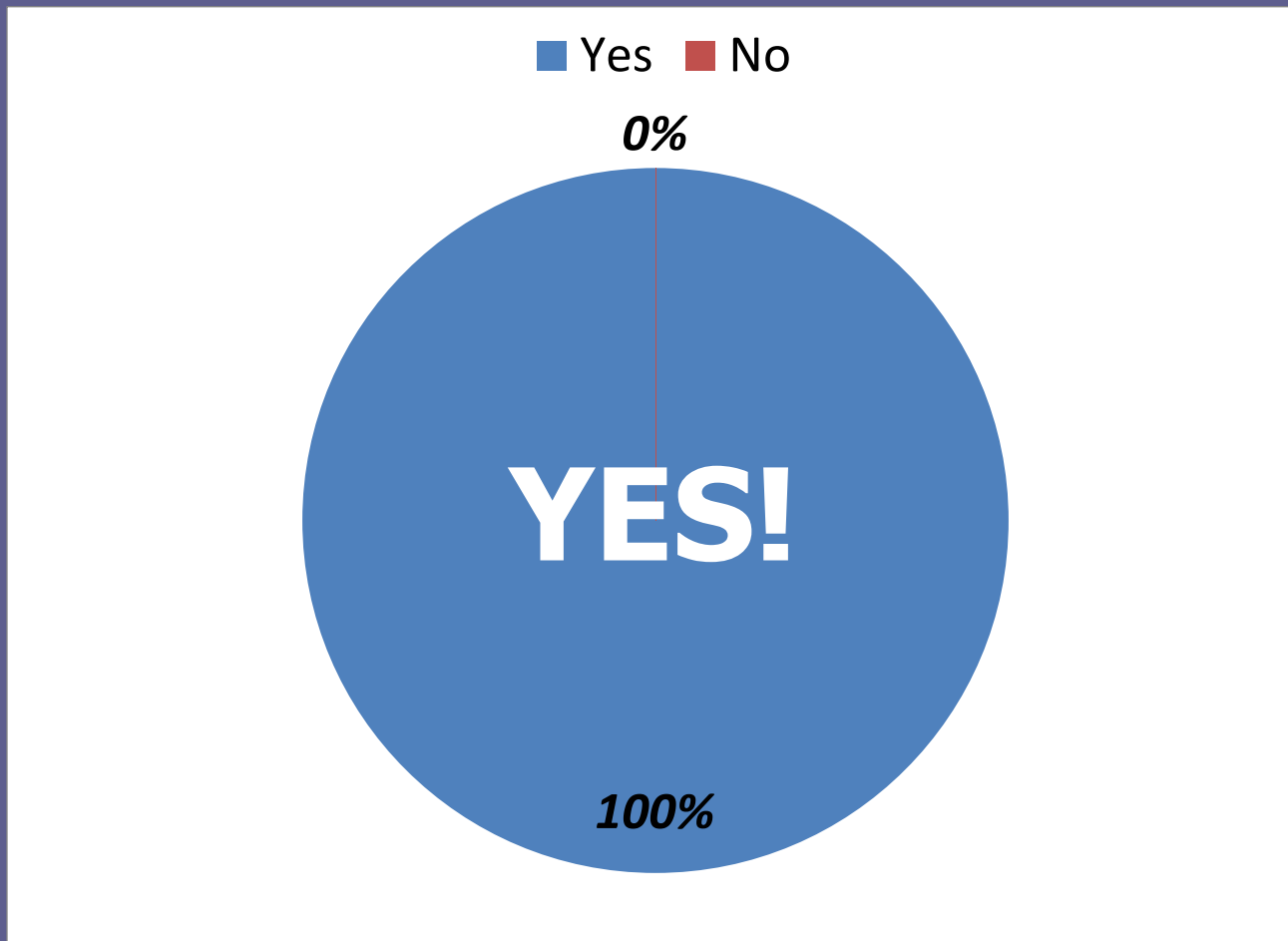


Future Studies

- How effective is the remote/live lecture style for large(r) classes?
- Benefit of recorded lectures:
 - Will attendance change?
 - What effects will it have on learning?
- Social Isolation:
 - Will students remain at home if given the option?
 - How important is social interaction within lecture?

In summary....

Should the SOE offer more summer courses with the same local/remote delivery style?



Thanks!

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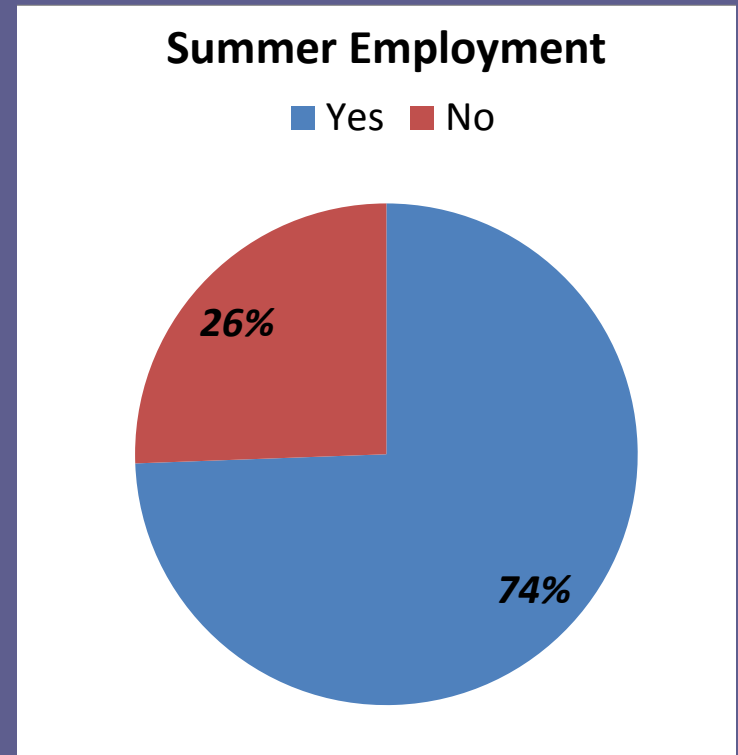


Recorded Lectures

- Students were told not to record lectures - some students did anyway
 - Average of students recording lectures $\sim 10\%$ higher than class average
- Reviewing of lectures main benefit
 - Lectures reviewed once or twice
- Many students recommended lectures be recorded in future

Work Commitments

- Many students had full time jobs – mostly co-op positions
- Essentially no effect on grades
- Employers were generally accommodating
 - Flexible lunch schedules
 - Time off for exams
- Students challenged with balancing work responsibilities and course work
 - Work often top priority



More Summer Offerings?

- YES!
- Keeps students on track
- Allows transfer students to finish earlier
- Requires change in study habits
- Which courses?
 - Courses with high failure rates
 - Critical prerequisite courses

