Innovative eLearning Practices for Online Geoscience Education

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Rationale

With rapid advances in and wide spread access to the internet, online courses are increasingly become part of the educational landscape

The responses obtained from students will help to better understand how students interact with an online course and how this differs from a traditional classroom setting

This will allow us to generate institutional guidelines best suited to our student population in how to design online courses.

Study Design:

Phase 1: Examination of presentation of online course content (just finished)

Phase 2: Examination of student assessment methods in online courses (currently running first set of surveys)

Phase 3: Examination of resources used for online course instruction (one segment on ebook usage has collected 3 terms of survey data – other resources to be addressed in the future.)

2 Surveys per course, and focus groups in in each.

Questions addressed basic demographics – age, gender, year level, enrollment status (part-time/ full-time) and program

Students polled for Phase 1 were a diverse group from 15 courses (average enrollment ~150 students) offered from May 2017- August 2018

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Who are York's student's?

- Estimated Student Population (2017) ~ 53,000
- Most undergraduate students are:

  - Direct Entry from High School
  - Domestic
  - Local (i.e. native to Greater Toronto Area)
  - Live at family home
  - Commute on average 1 hr / day
  - Large number of first generation post secondary students

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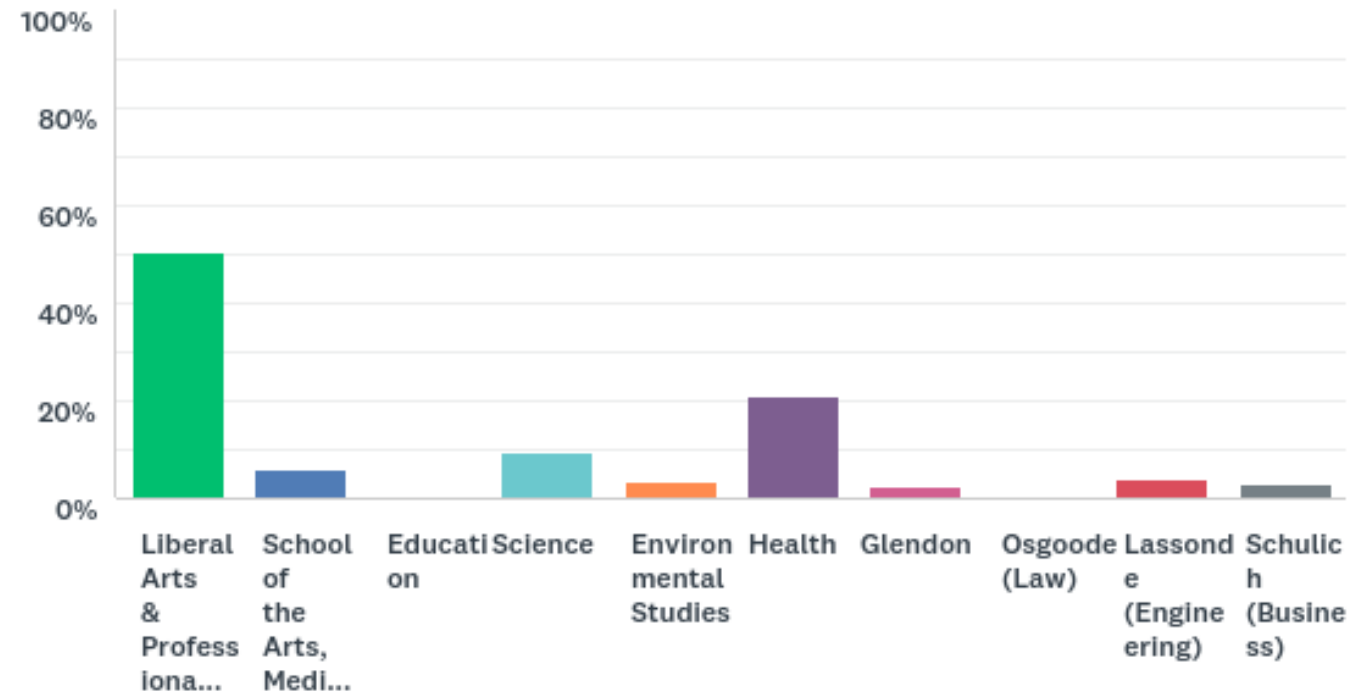
Who are our students?

Q7 Are you a domestic or international student?
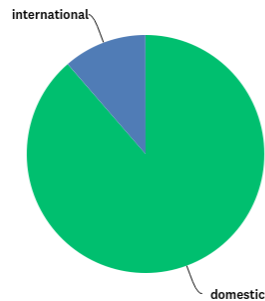

Q6 Year of Study
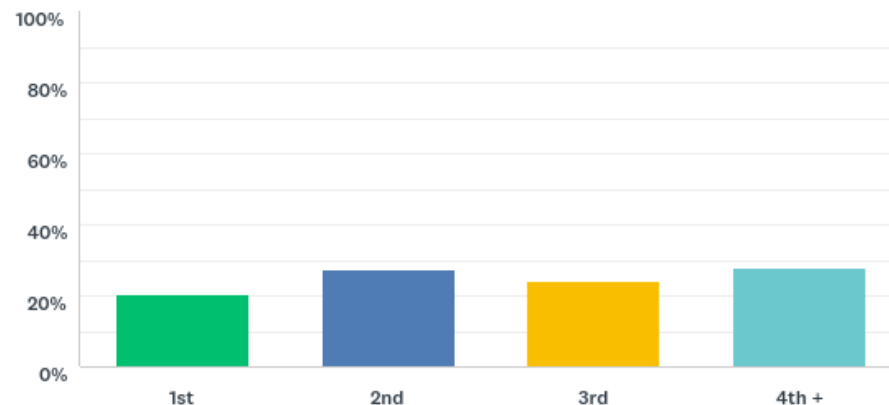
Q5 What Faculty are you in?

Why do students take online courses?

- At our institution a significant proportion of our students commute longer distances.

- Many students also work part-time.

- As such scheduling convenience is a key factor in taking online courses

- In Canada, many students may also be studying remotely, and online courses allow them to continue studies without the expense of living away from home

Q15 Why did you take this course online (check all that apply)
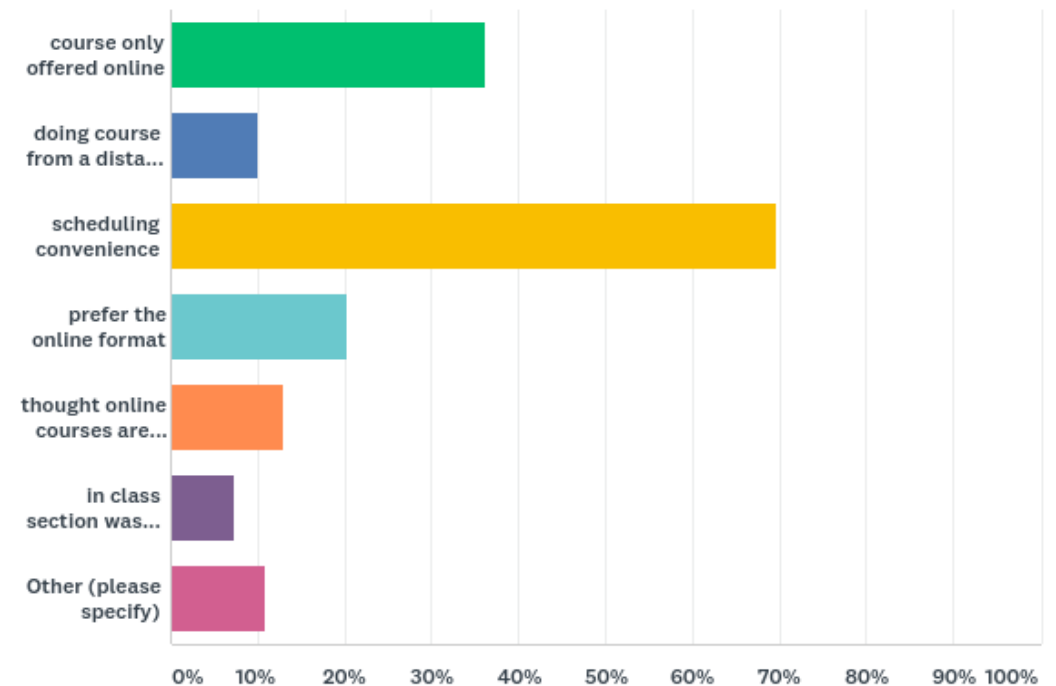
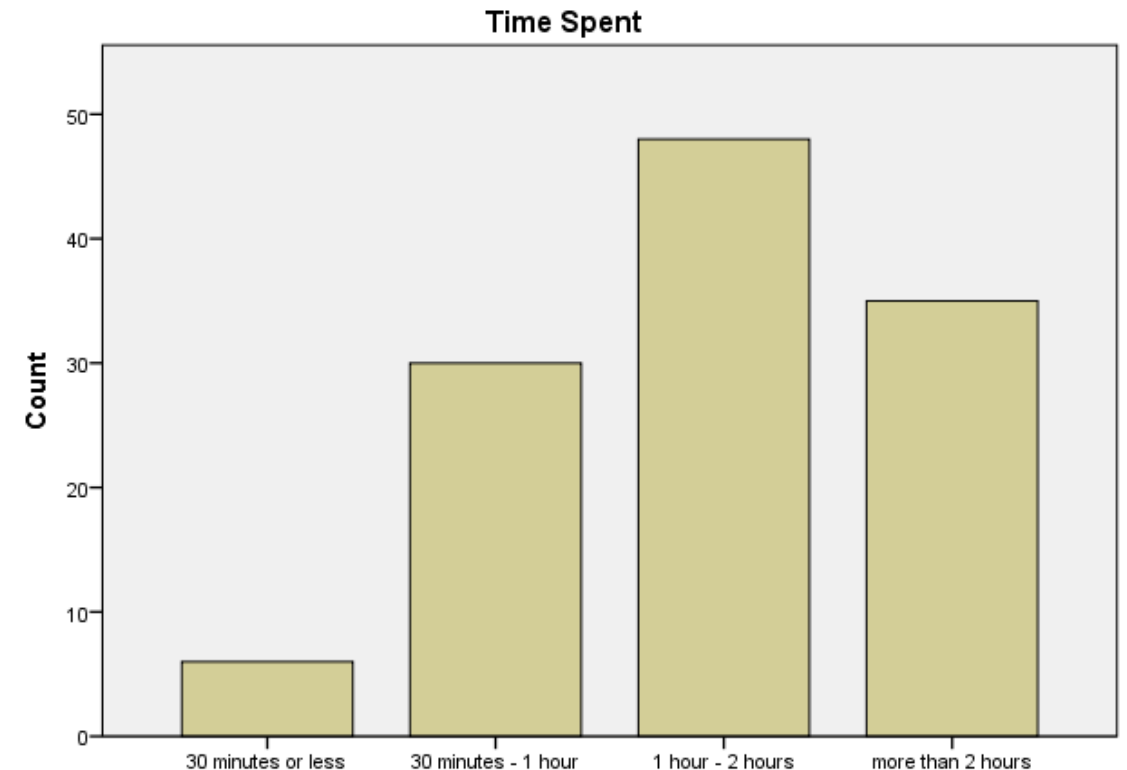# Key often to designing content is how student access the material

- Apple devices are the most common
- As many Learning Management systems or other software are browser based, the device used may have a significant impact on how well material can be accessed.
- Students will use both laptop and smartphones to access material.
- Preliminary results suggest this trends also hold true for how students submit work.

What device do you use to access the course? (check all that apply)
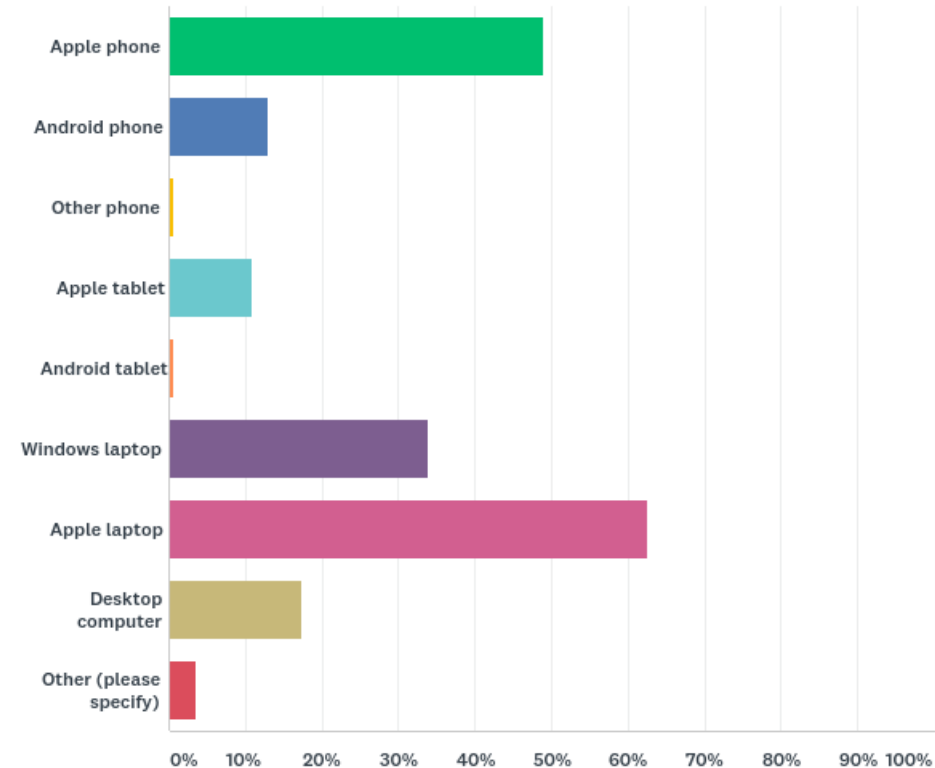
Time spent

- A significant factor in online courses is time spent on material.
- Normal lectures average 3 hours per/week
- Average time spent in less than that online
- What does this mean for learning?

Time Spent

(Chart: Count vs. Time Spent categories)
- 30 minutes or less: ~6
- 30 minutes - 1 hour: ~30
- 1 hour - 2 hours: ~48
- more than 2 hours: ~35

So far, in an average week, how much time would you estimate you have you spent learning the course material? (this is learning the material NOT working on assignments)
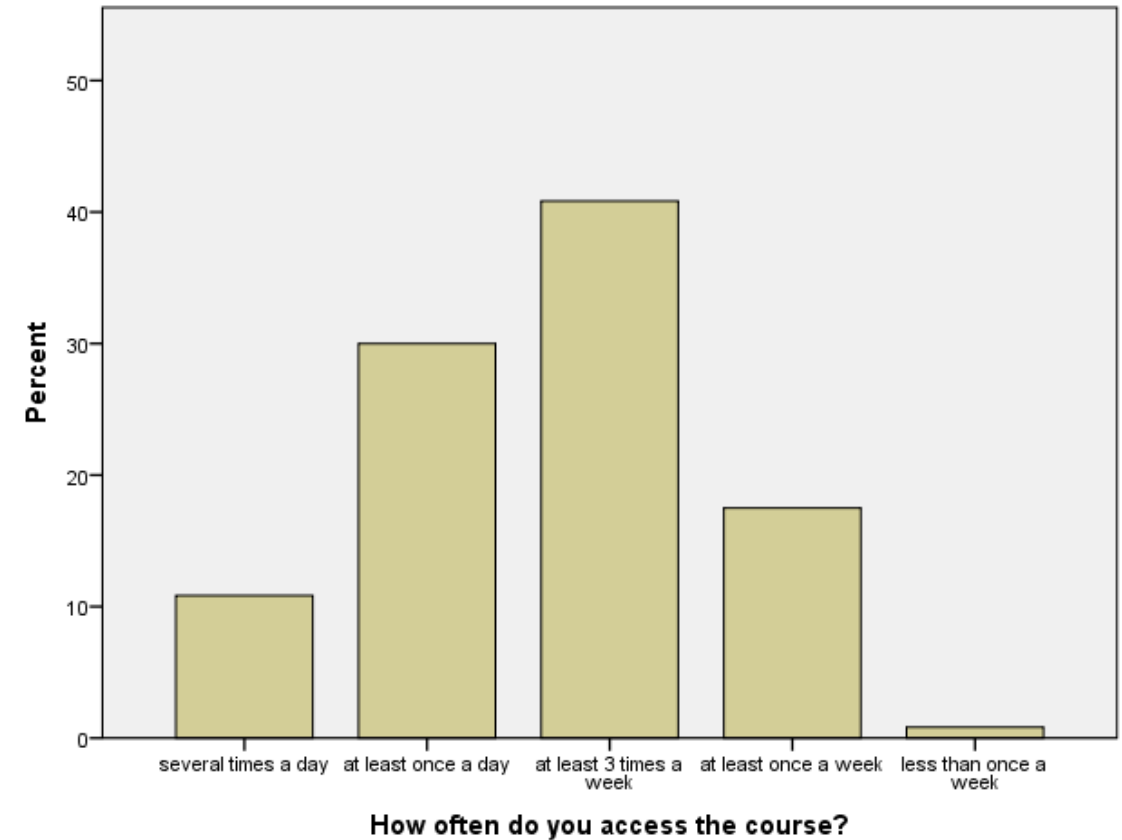
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Time spent

Yet when asked, more than half of students felt they spent as much time or more on the online course vs. and in class offering

Q17 In comparison to in-class offerings, how much time do you spend engaged in course activities for this online course?
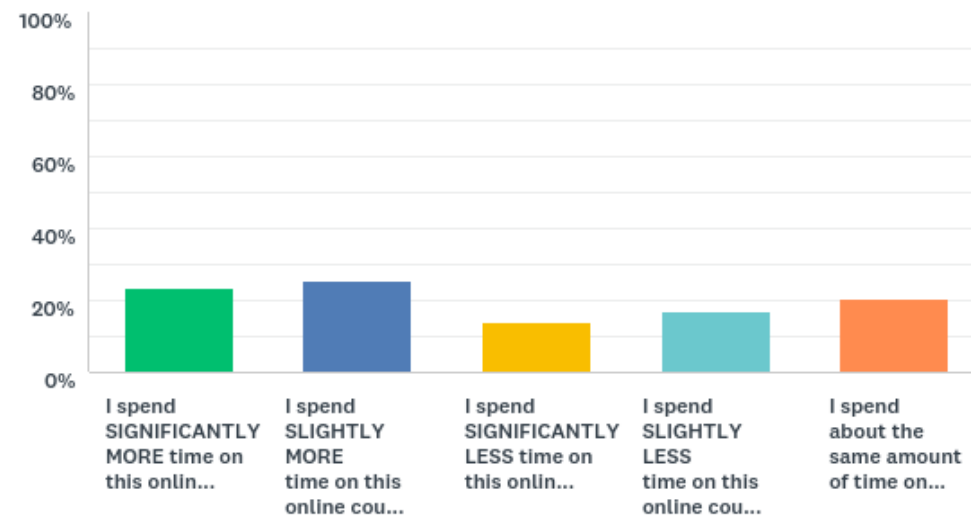


Time Spent

- Although the time spent may be lower on content, students on average do appear to access the content frequently.

- Most access more than once a week, and most more frequently than that.

How often do you access the course?

Interruptions

- With online courses, student attempt to multitask may disrupt the learning process
- It is clear that interruptions are a consideration in how students will be able to interact with the material

Are your sessions prone to interruptions (taking calls, reading other email that comes in, interruptions by other people etc?)

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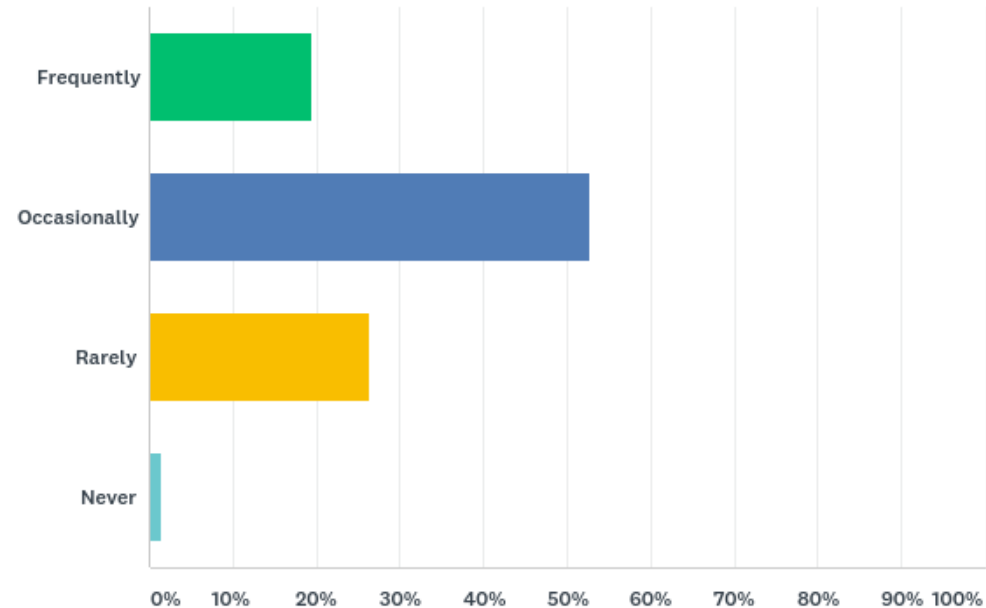
Note Taking

Q15 Do you write your own notes and / or annotate course content?
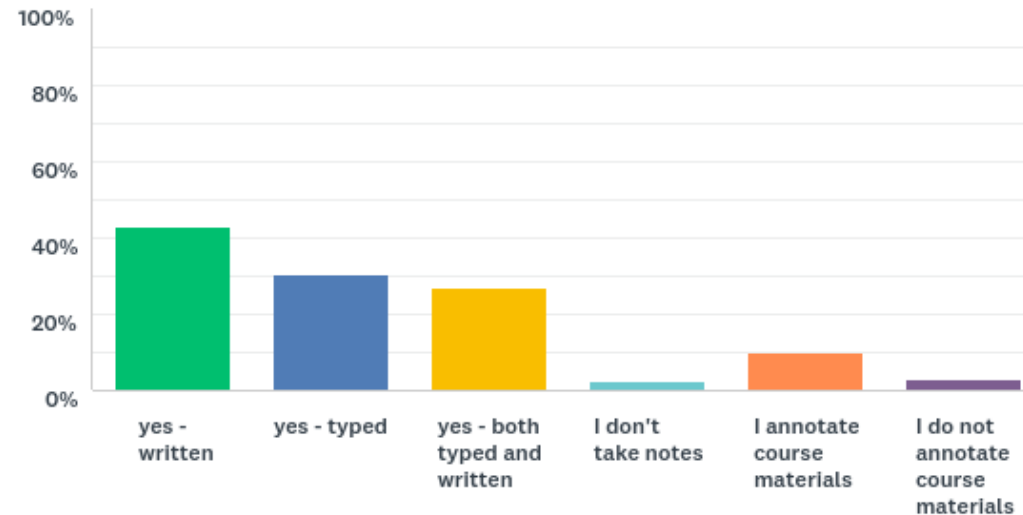
- Note taking is a key element in material retention. With material easily available online course may discourage these practices
- Results suggest however that students do still take notes.

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Approach to learning

- How the content is accessed is also clearly a factor in the learning process

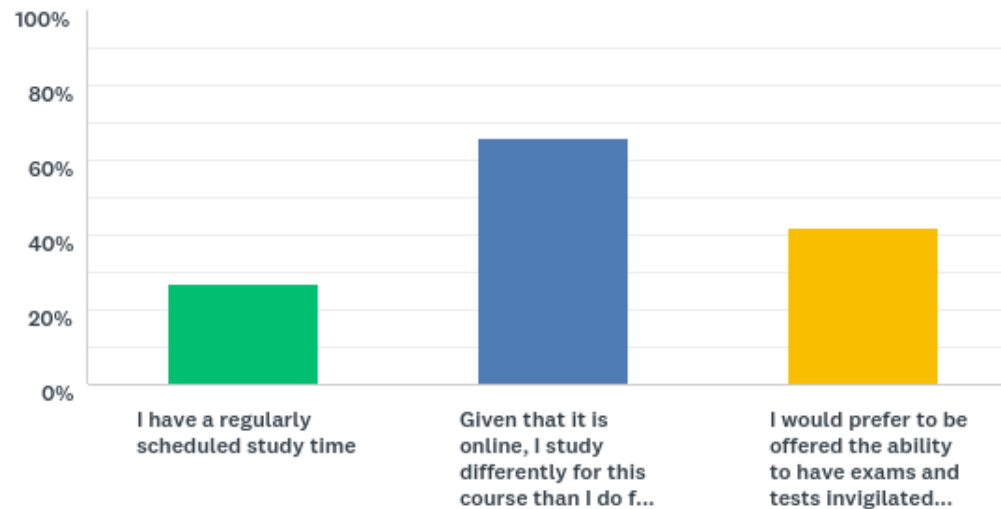- Students are clearly aware that their approach to learning is affected by the method of delivery

Do you think studying online changes your study habits from studying in a typical classroom based course?
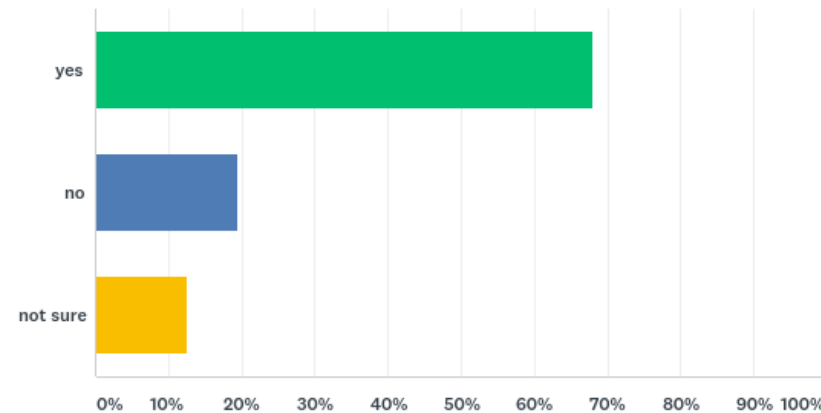
Approach to learning

Students tend to have more flexible times at which they access the material. Comments from students also reinforce the idea that the course is 'on-demand' and this flexibility is a key element for taking online courses.

Q18 With respect to studying for this course, please check all that apply


100%

80%

60%

40%

20%

0%

I have a regularly scheduled study time

Given that it is online, I study differently for this course than I do f...

I would prefer to be offered the ability to have exams and tests invigilated...

Preferred Content.

Q12 Which type of course content did you find easiest to learn from?   Check all that apply.

Q13 Which type of course content did you find hardest to learn from?   Check all that apply.
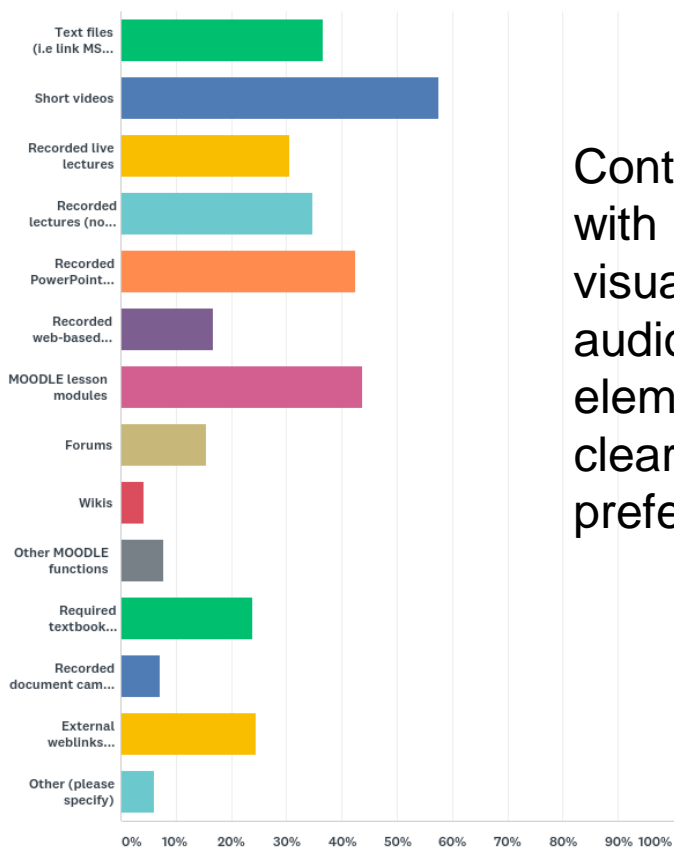
Content with both visual and audio elements is clearly preferred.
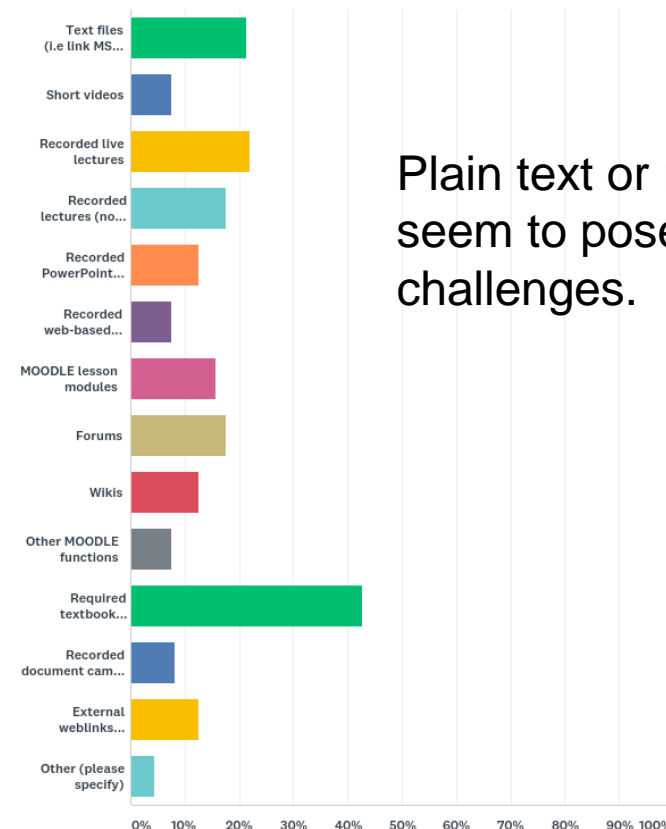
Plain text or readings seem to pose greater challenges.

However there is a large diversity in the medium students prefer

Overall experience

- Although comments from students provided a wide range of comments both positive and negative, overall more than half would take an online course again.

Q20 If the same course were offered in-class vs. online with no scheduling conflicts, which would you choose to take?

in-class offering

online offering
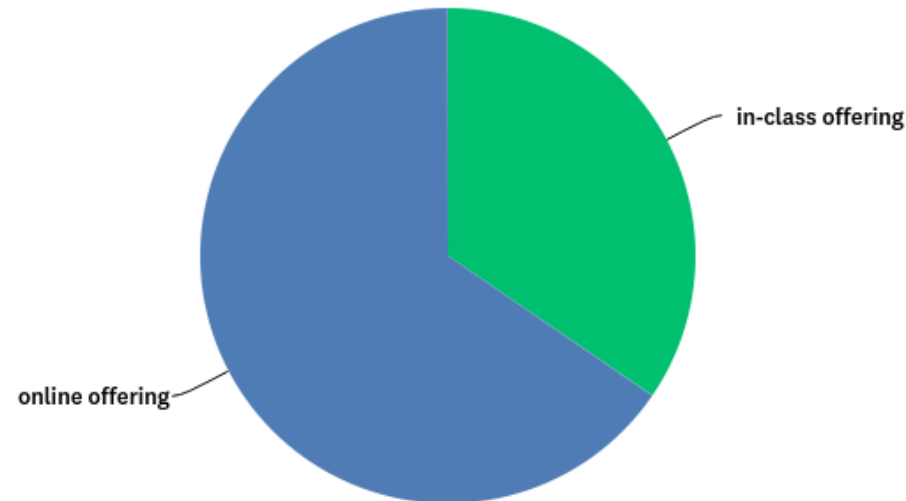
Comments - Positive

- *'the online course was very convenient because i was able to repeat the recorded lecture many time when i couldnt understand the topic for the first time'*
- *'I'd like to see more online course options, as it allows for schedule flexibility.'*
- Student generally like the flexibility and that course can be accessed at any time OR location.

Comments - Issues

- *'Online courses are a lot harder to manage but most students including myself prefer to take electives online to avoid tutorials. It's somewhat difficult to know exactly what the professor wants since the tone isn't emphasized over moodle or someone may understand something completely different from what is being told or asked. It is difficult to study for an online course especially for midterm/finals which are based on so many topics that its hard to differentiate what the main area of focus is sometimes'*

- Other comments about instructors indicate students find that instructors can be more 'monotone' in recorded lectures vs. the live lecture

Design of Online Courses

- Instructors need to be aware of how students interact differently with material online, but clearly in online courses students will put in as much if not more time into learning.

- Organization and communication are key. Students expect regular contact from an instructor.

- Instructors need to be aware that the lack of interaction with an audience also affects how they present material when recording lectures.

- Students appreciate the convenience of 'on-demand' learning. We are currently running a prototype course where study is self-paced with few deadlines, only a requirement to complete course material by a final date.

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Design of Online courses

- As online courses are a growing part of higher education we need to better understand the student experience and expectations.

- Results based surveys like this can better inform the instructor as to how their students are actually interacting with the online course.

- Students can also receive better guidance as to how to best approach online learning, which is often a much less structured environment than the typical in class lecture/tutorial schedule.

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- York University Academic Innovation Fund (A.I.F.)

- Division of Natural Science (NATS), York University