INVESTIGATING STUDENT PERSPECTIVE & EXPERIENCE with ONLINE Geoscience First Year General Education COURSES

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GSA Annual Meeting ♦ Seattle ♦ October 22, 2017
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York University’s Division of Natural Science, “NATS”

Physics ♦ Chemistry ♦ Biology ♦ Earth & Space Science

• All non-science undergrads required to take one NATS Gen. Ed. Course
• Online course offerings increasingly popular
Online Course Study

MOTIVATION:
• To have faculty present course content in the best way so as to benefit students in large, introductory online geoscience and general education science courses.

PRIMARY OBJECTIVE:
• To establish institution-specific best practices guidelines for online instruction.
Research Methodology

• Gauge student perspective & experience through multiple surveys and focus groups.

• Surveys obtained from NATS students taking 10+ different NATS fully online courses throughout 2017/18 academic year.

• 3 surveys across all courses: beginning, middle, end of course.

• Surveys track student perception and experience over time.

NATS provides large, diverse student sampling given:

• students are from all disciplines
• students are from all undergrad years
• total student sampling size ~ 1500.
Student Surveys

- Using Survey Monkey

Demographic Data in All Surveys
- Age
- Gender
- Domestic / International
- Year of Study
- Time commitments
- Accessibility

21. How much time do you spend or intend to spend at a time working on the course material? (this is learning the material NOT working on assignments)
- 30 minutes or less
- 30 minutes - 1 hour
- 1 hour - 2 hours
- more than 2 hours

22. How does the professor communicate with the class? (please check all that apply)
- Emails to entire class (Moodle Announcements)
- Live chats
- Forums/blogs
- Phone
- Face to face meetings
Phases of Project

Three phases (1 year each):

Phase 1: Examination of presentation of online course content

Phase 2: Examination of student assessment methods in online courses

Phase 3: Examination of resources used for online course instruction
Phase I:
Examination of Content Delivery in Fully Online NATS courses
York U: Student Profile

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

<table>
<thead>
<tr>
<th>Percentage of Students (%)</th>
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<tbody>
<tr>
<td>ACCESSIBILITY ISSUES</td>
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<tr>
<td>FULL-TIME WORK</td>
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<td>PART-TIME WORK</td>
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<tr>
<td>PARENTING</td>
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<td>11.6</td>
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<td>37.7</td>
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eLearning Trends: Rise of the Fully Online Course

- 54% of students have taken a fully online course before.
- 94% of students consider themselves adequately proficient with tech/software required for course.
- Comfort level not correlated with previous online course experience.

![Graph showing comfort levels with technology/software required for course.]

Have you taken an online course before?
- Yes (if so please indicate where in comment box below)
- No

Level of Comfort with Technology/Software Required for Course

- Not Comfortable at All
- Somewhat Comfortable
- Comfortable
- Very Comfortable
Why did you take this course online (check all that apply)

- 44: Course only offered online
- 36: Doing course from a distance (can't commute to York)
- 107: Scheduling convenience
- 56: Prefer the online format
- 14: Thought online courses are easier
- 4: In class section was full
- 21: Other (please specify)
How do you access the internet?
(please check all that apply)

- mobile data: 92
- home landline (Rogers, Bell etc): 114
- Wireless (point to point or satellite): 90
- dial up: 0
- on campus: 79
- Other (please specify): 5
What device do you use to access the course? (check all that apply)
Student Study Habits: Perceptions & Expectations for online courses

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

Time students expect to spend studying

- 30 minutes or less
- 30 minutes - 1 hour
- 1 hour - 2 hours
- more than 2 hours
How is the content in your course presented?
(please check all that apply: 904 replies from 207 cases)
How much time do you spend or intend to spend at a time working on the course material? (this is learning the material NOT working on assignments)
How is Content Delivered: number of cases. Average Effectiveness.
Summary and Future Research

- Preliminary results from summer 2017 academic term have been analyzed.
- Surveys for fall / winter 2017/18 have been prepared for distribution
- Focus groups of students, faculty and T.A.s will be held in March 2018.
- Funding initiatives will be undertaken to continue and finalize the project.
Conclusion: need for Academic Institution Leadership in eLearning

Competition arising from private industry online course offerings in the area of continuing and adult education:

- Udemy
- Coursera
- World Science U

- Private industry offers studio level production including VFX, compositing, animation and graphics for recorded lectures.

- Offering bodies tend to be corporations whose financial resources may be greater than those of academic institutions.

- Advantage of Academia: degree granting privileges for students and research by faculty to develop standardized best practices of delivery for online courses.

- Student recruitment and retention in academic institutions may increase if degree granting organizations assume leadership in this area.
Acknowledgements

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

• Teaching Commons, York University

• Division of Natural Science (NATS), York University

• Ross Baker, Research Assistant