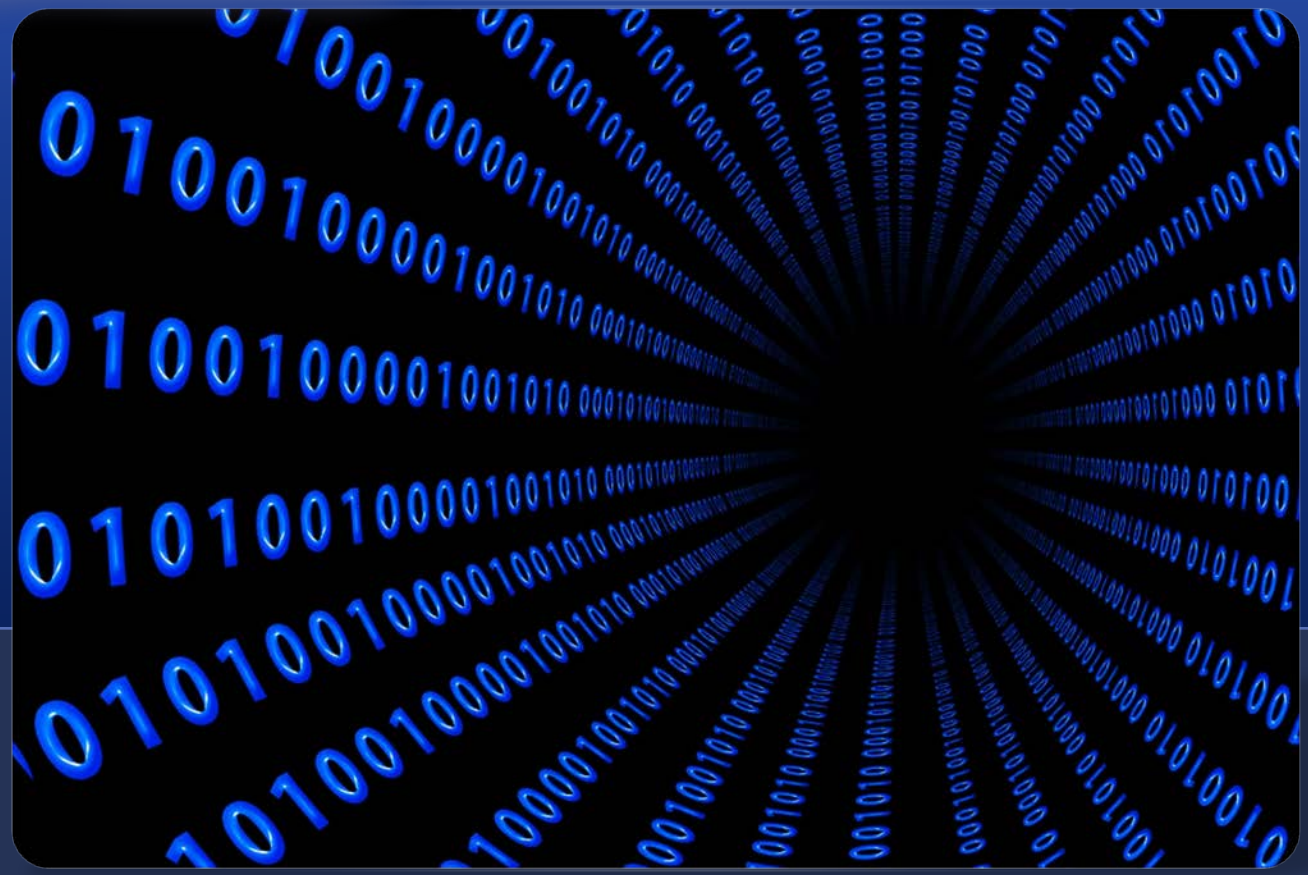
INVESTIGATING STUDENT PERSPECTIVE & EXPERIENCE

with ONLINE Geoscience First Year General Education COURSES



Jerusha Lederman

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Toronto, Canada

GSA Annual Meeting ♦ Seattle ♦ October 22, 2017

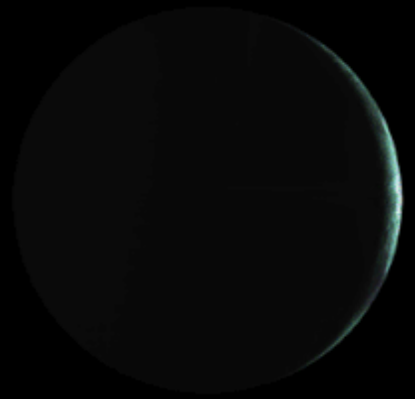
Jerusha Lederman

- H. B.Sc. Space & Communications Science
- M.Sc. Astrophysics
- Ph.D. Atmospheric Physics

Mary-Helen Armour

- B.Sc. Physics & Astronomy
- M.Sc. Astronomy
- Ph.D. Geophysics (in Progress)

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

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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.

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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.

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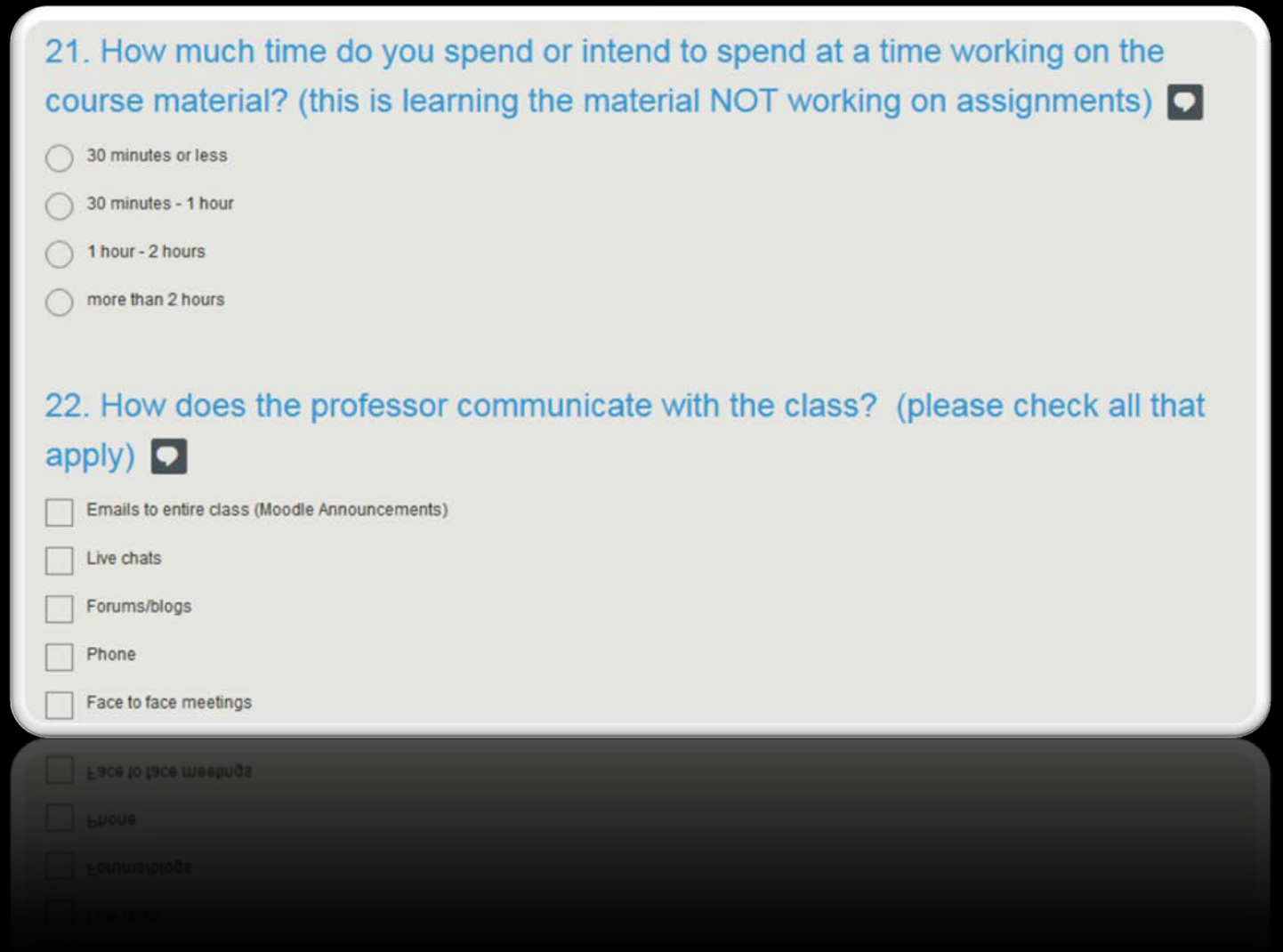
Student Surveys



- **Using Survey Monkey**

Demographic Data in All Surveys

- Age
- Gender
- Domestic / International
- Year of Study
- Time commitments
- Accessibility

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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

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Phase I:

Examination of Content Delivery in Fully Online NATS courses

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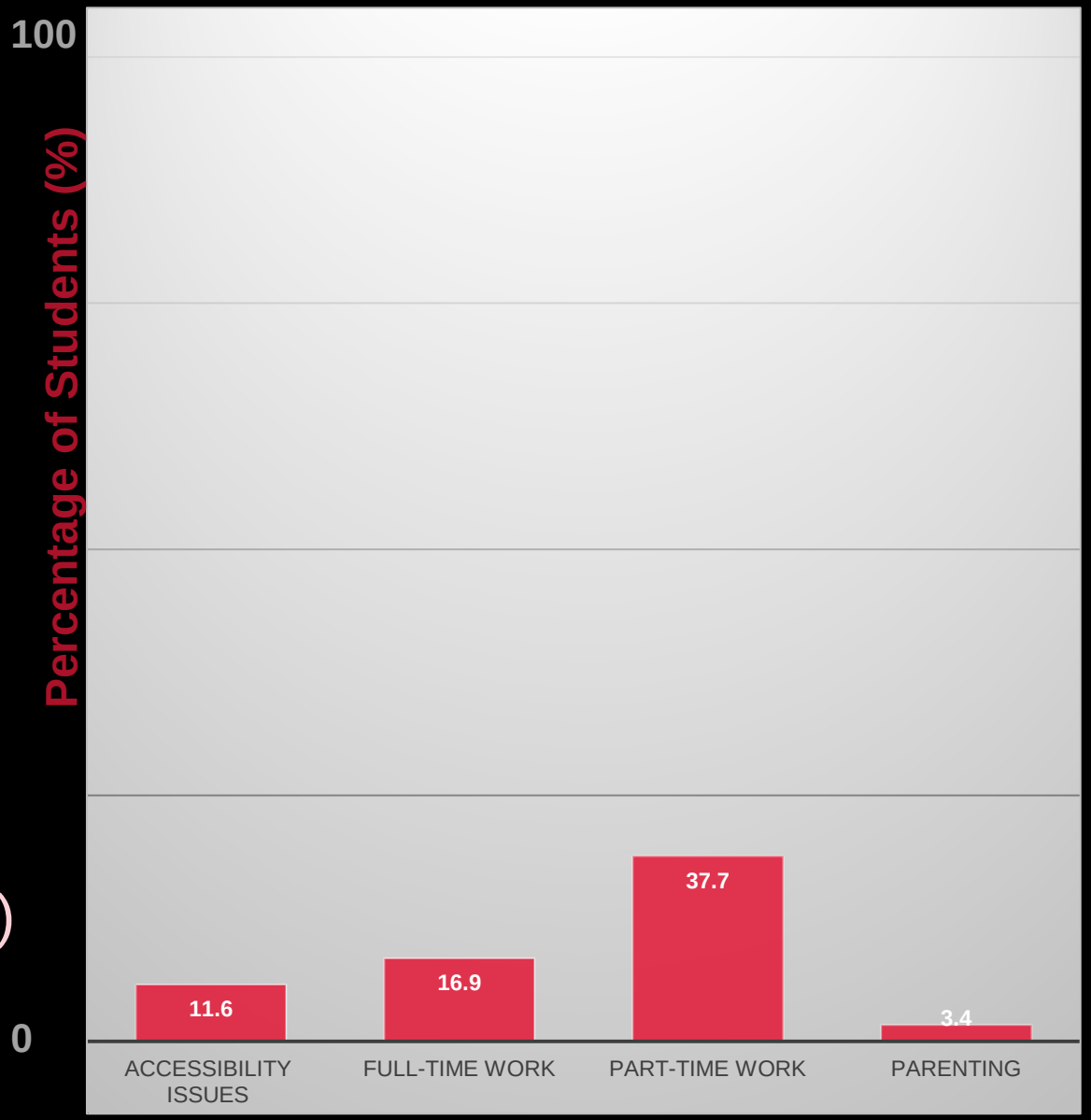
York U: Student Profile

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



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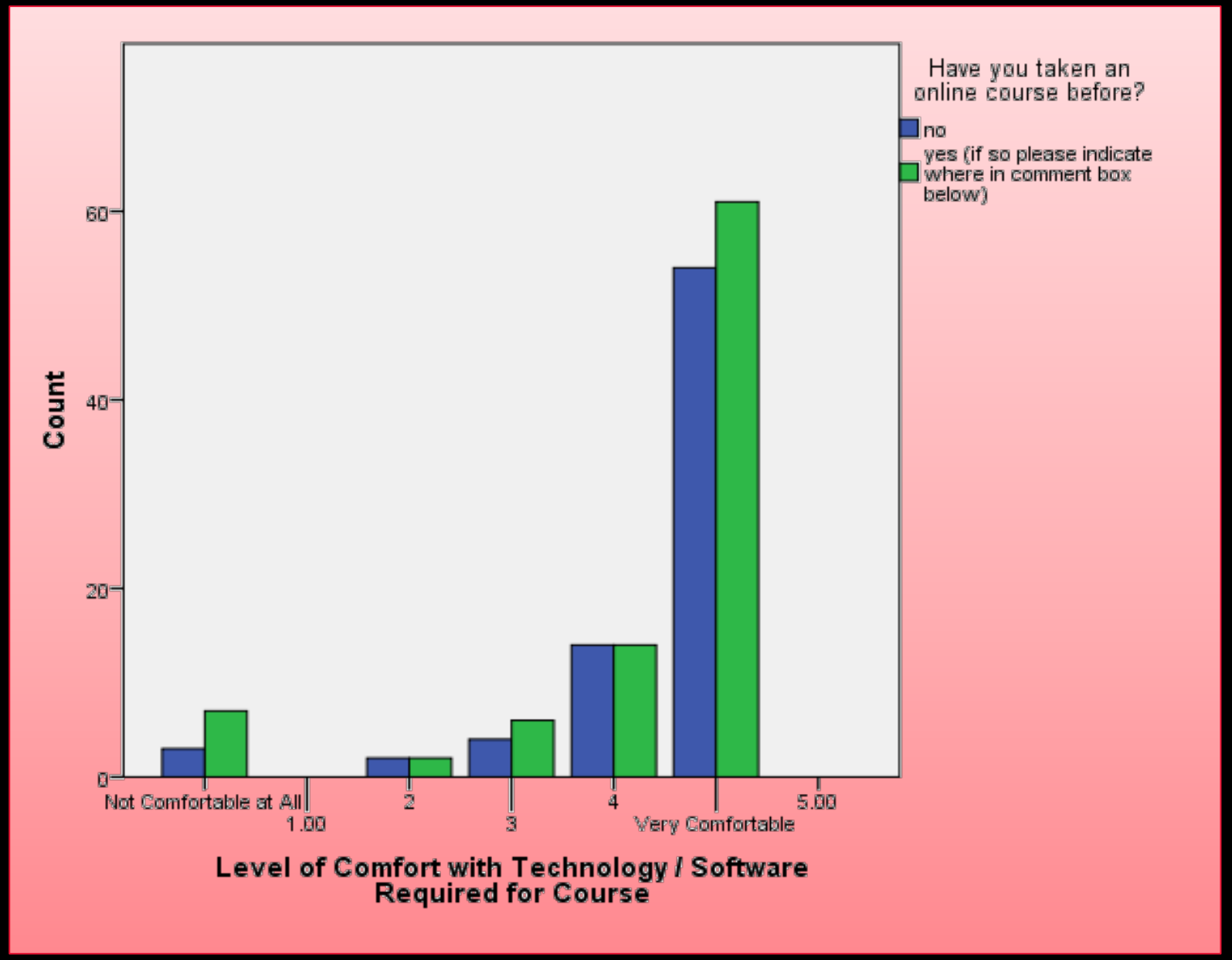
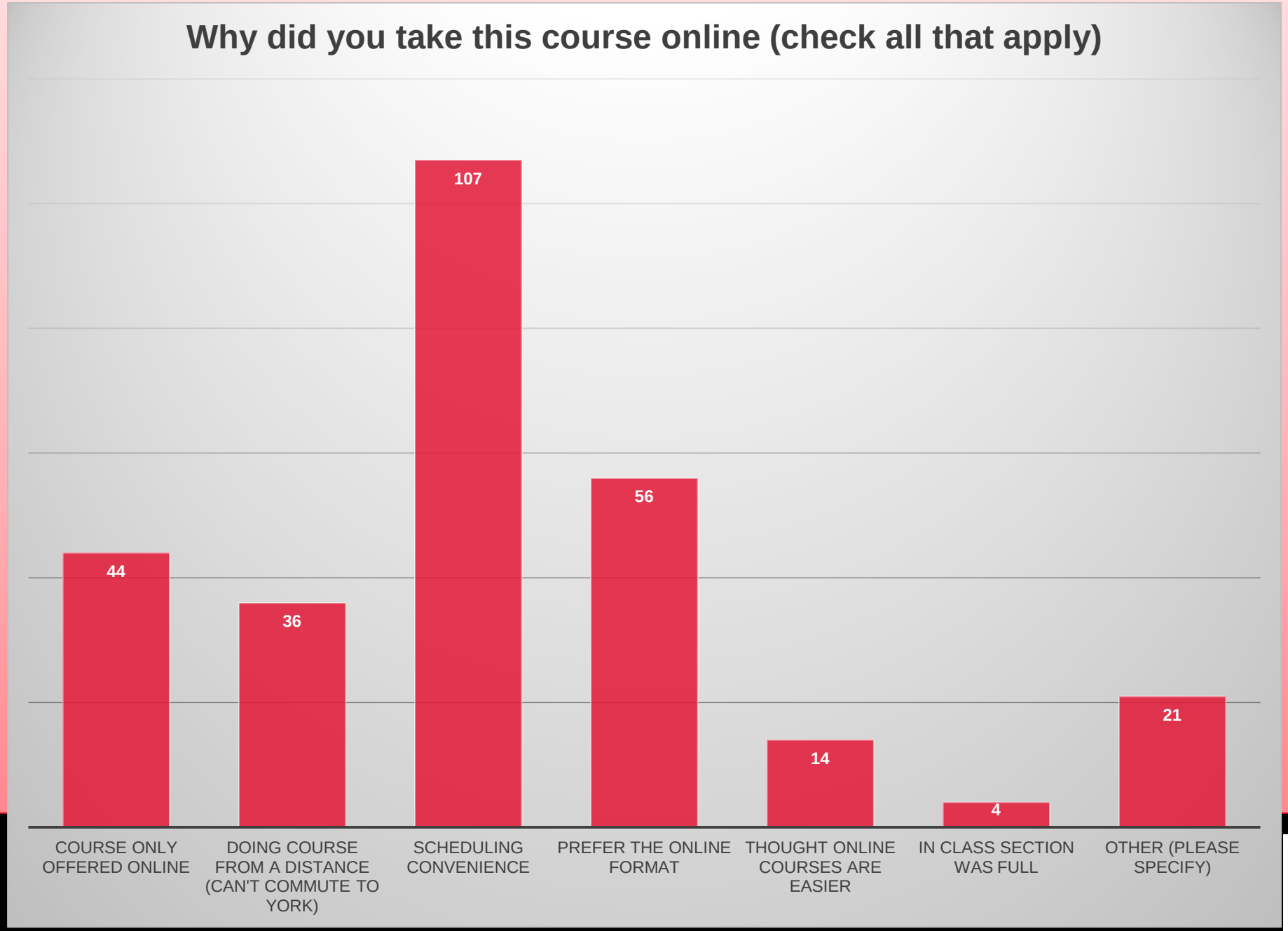
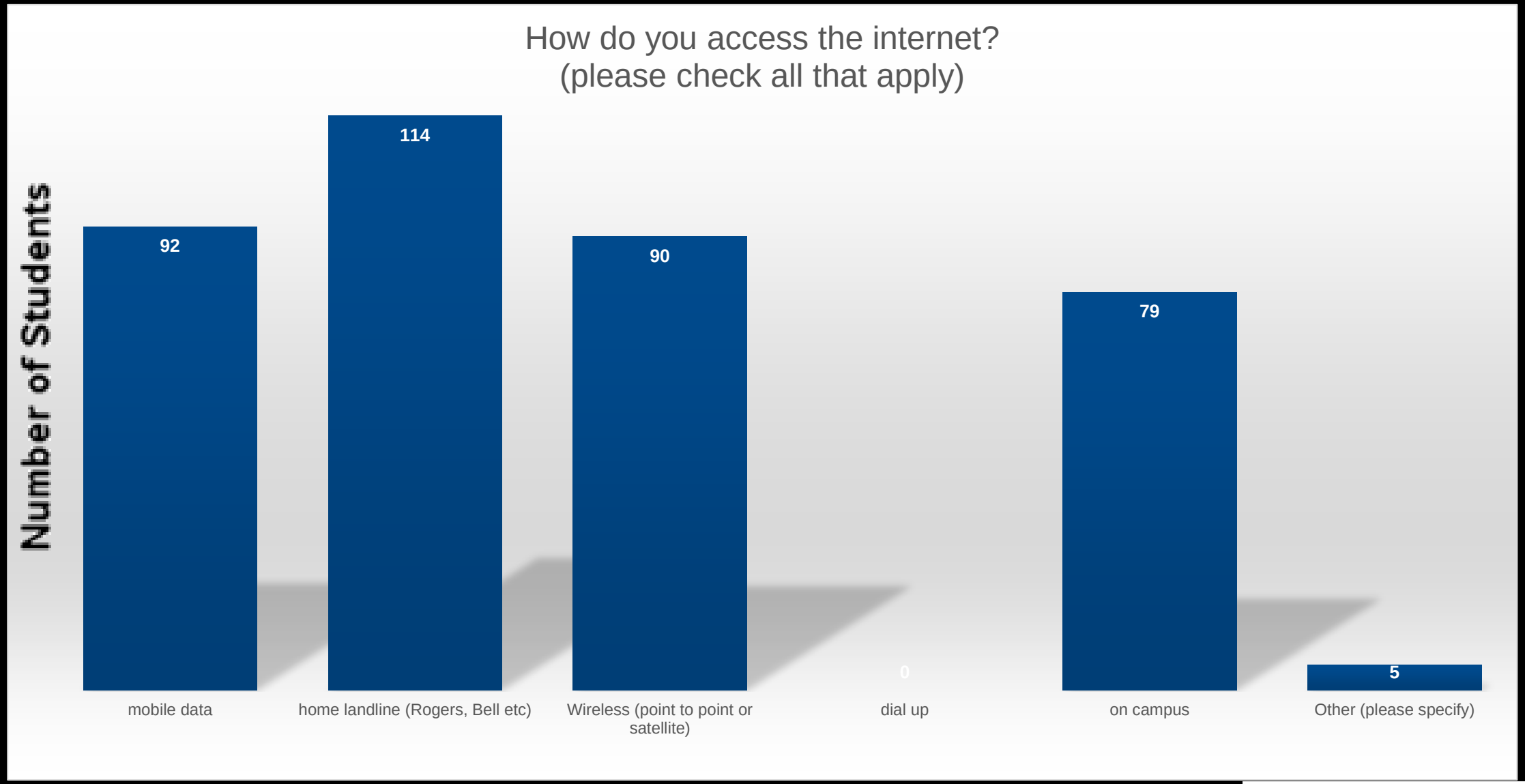
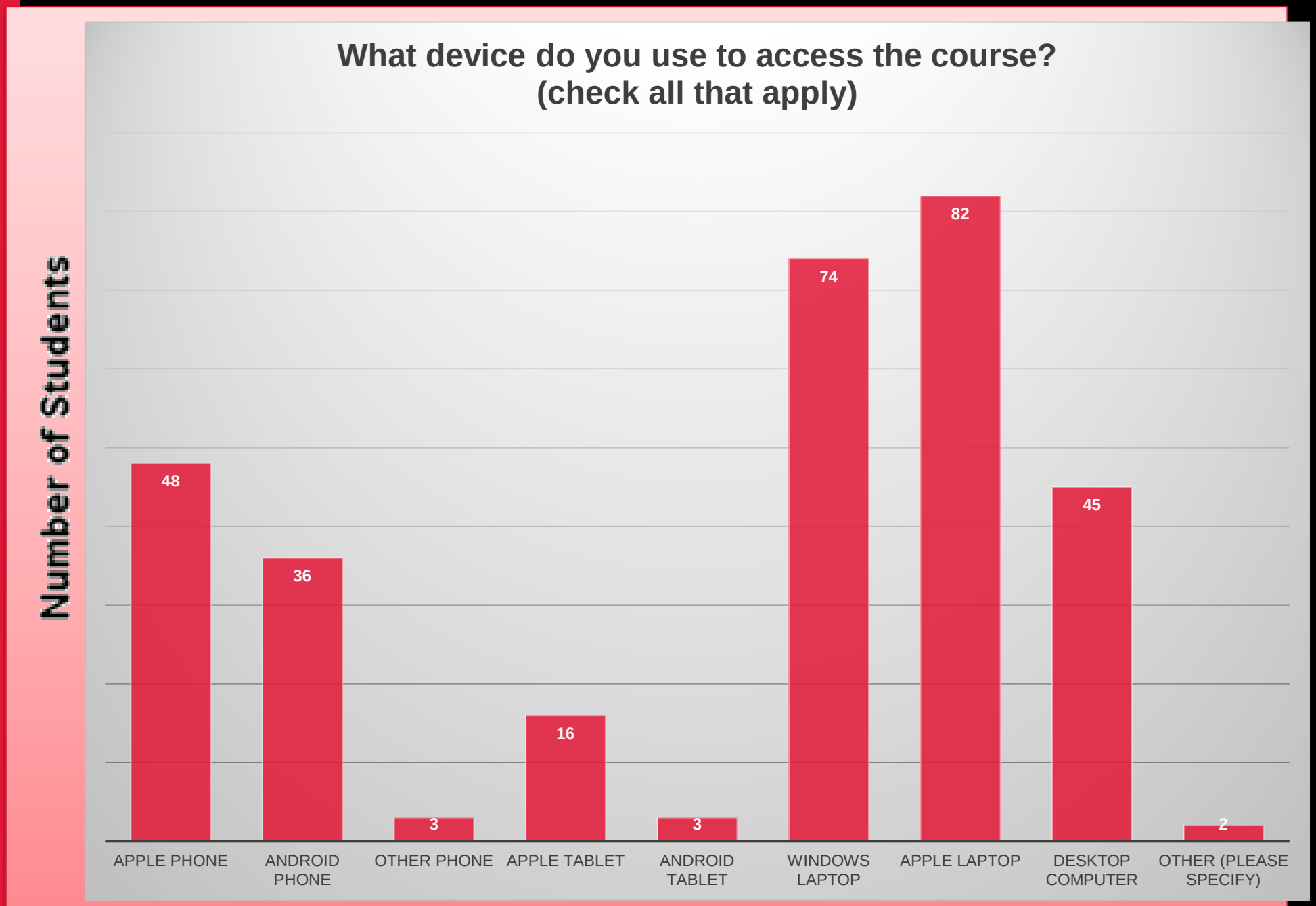
eLearning Trends : Rise of the Fully Online Course

- 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.




Why did you take this course online (check all that apply)
Number of Students
44
36
107
56
14
4
21
COURSE ONLY OFFERED ONLINE
DOING COURSE FROM A DISTANCE (CAN'T COMMUTE TO YORK)
SCHEDULING CONVENIENCE
PREFER THE ONLINE FORMAT
THOUGHT ONLINE COURSES ARE EASIER
IN CLASS SECTION WAS FULL
OTHER (PLEASE SPECIFY)


How do you access the internet?
(please check all that apply)
Number of Students
92
114
90
0
79
5
mobile data
home landline (Rogers, Bell etc)
Wireless (point to point or satellite)
dial up
on campus
Other (please specify)



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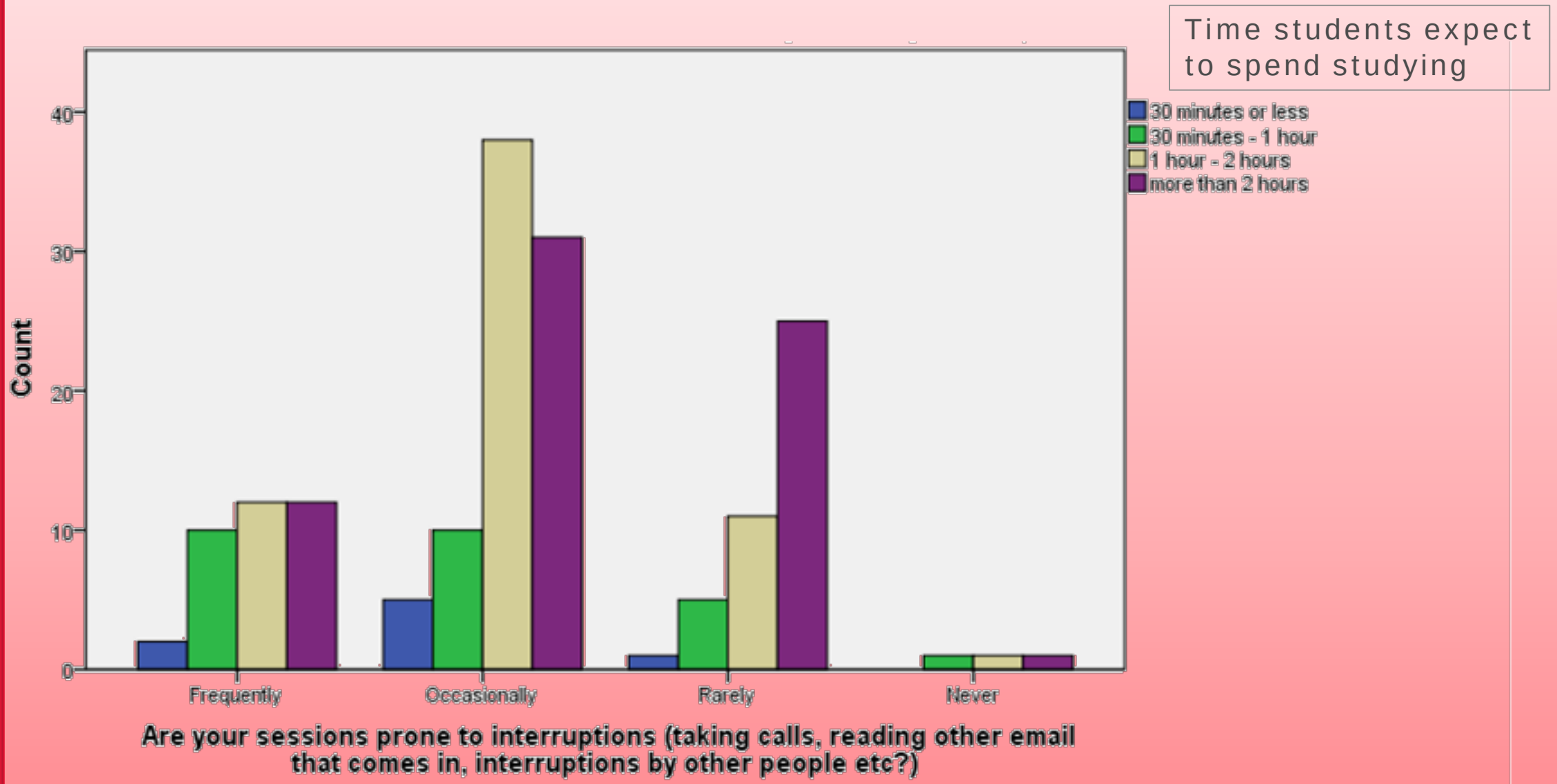
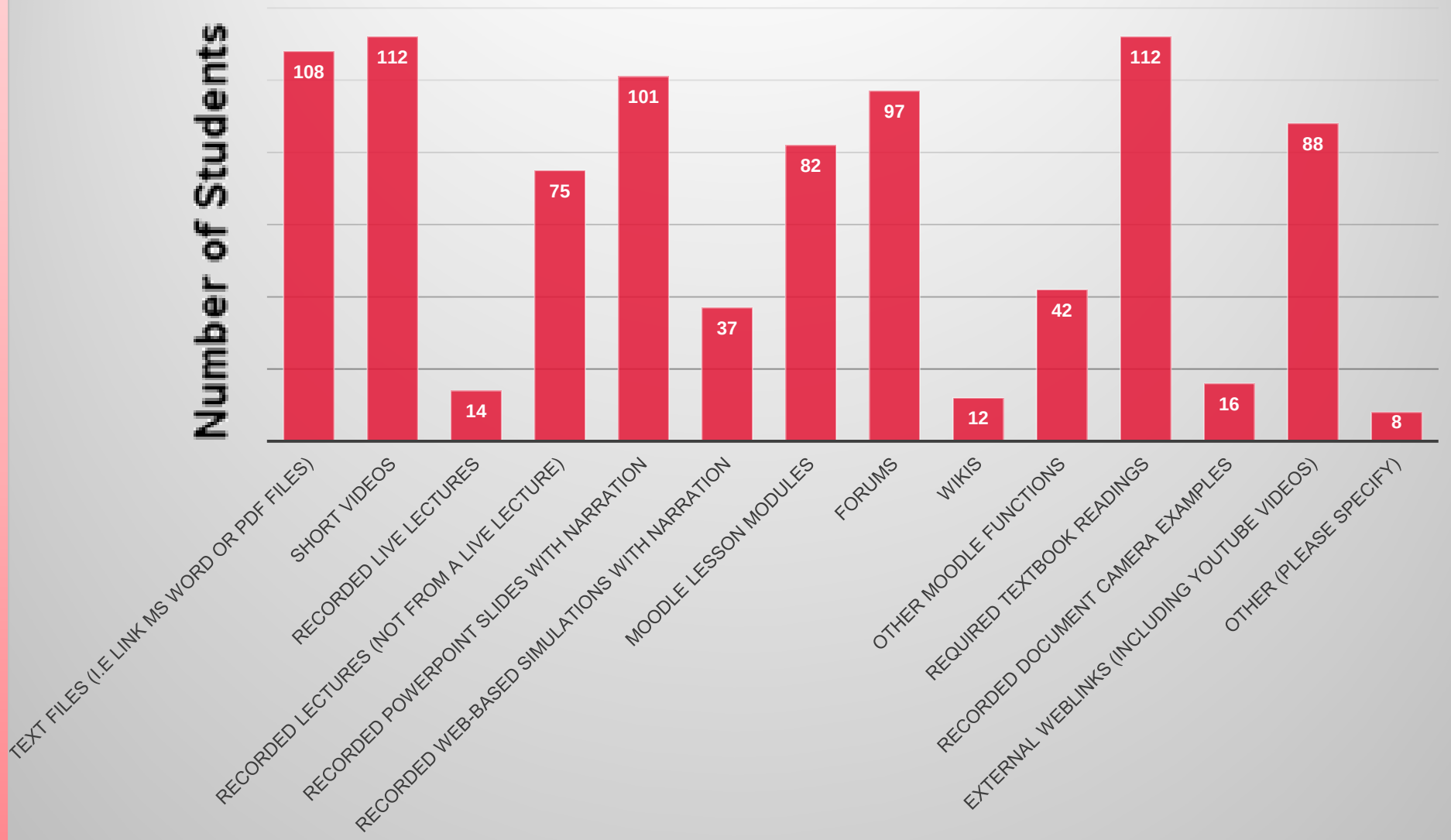
Student Study Habits: Perceptions & Expectations for online courses



How is the content in your course presented? (please check all that apply: 904 replies from 207 cases)



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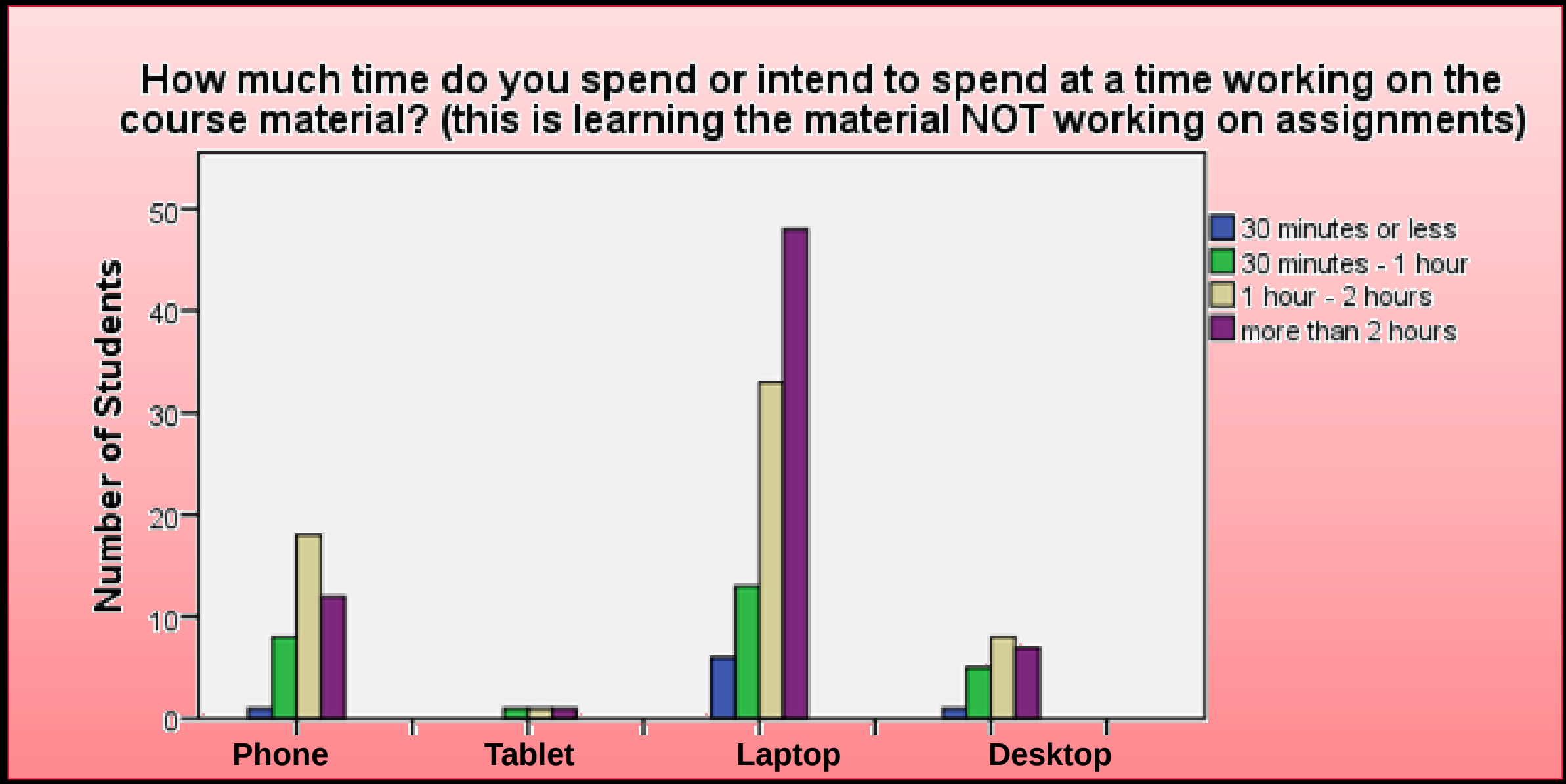

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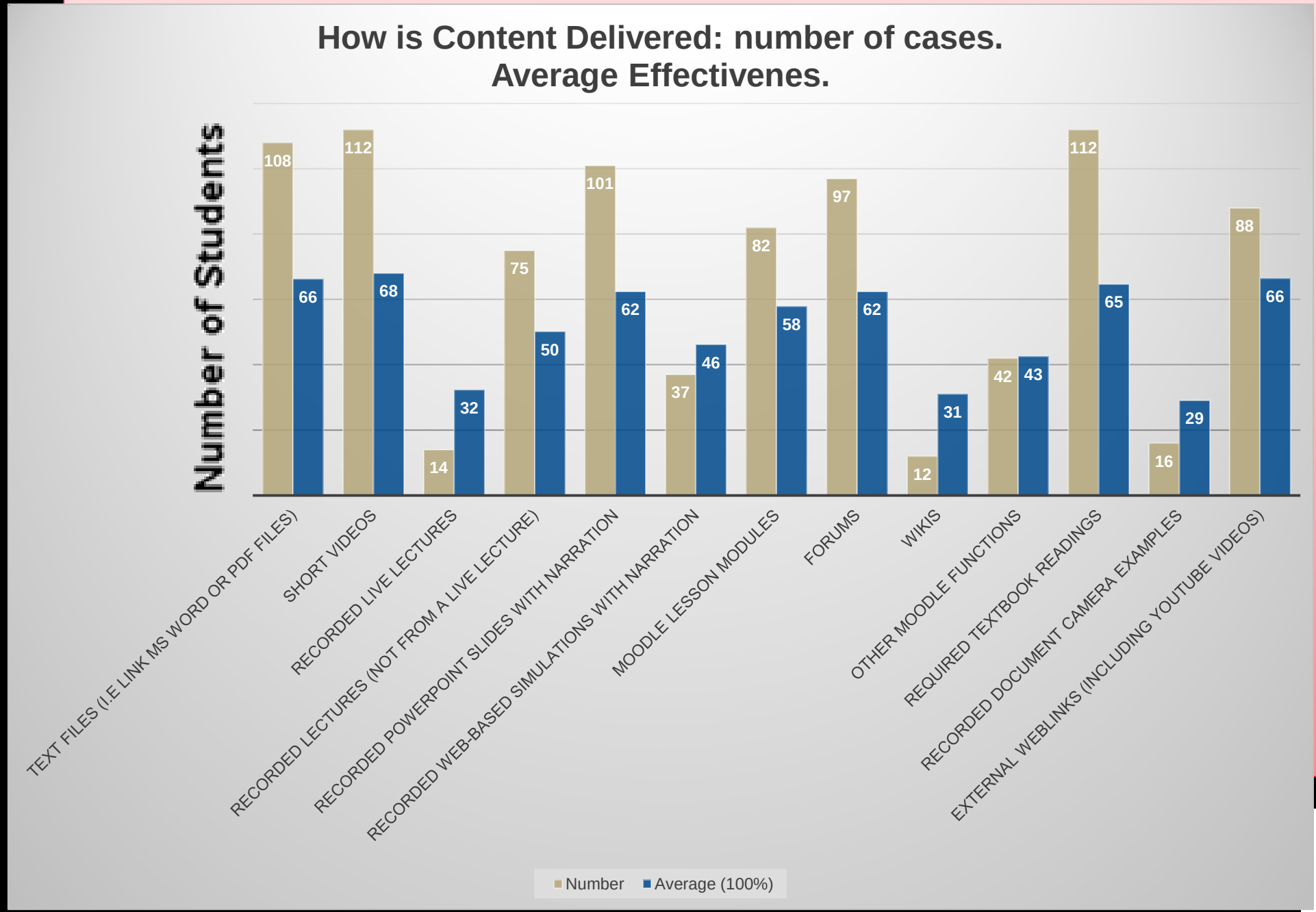
How is Content Delivered: number of cases.
Average Effectivenes.
Number of Students
108
66
112
68
14
32
75
50
101
62
37
46
82
58
97
62
12
31
42
43
112
65
16
29
88
66
TEXT FILES (I.E LINK MS WORD OR PDF FILES)
SHORT VIDEOS
RECORDED LIVE LECTURES
RECORDED LECTURES (NOT FROM A LIVE LECTURE)
RECORDED POWERPOINT SLIDES WITH NARRATION
RECORDED WEB-BASED SIMULATIONS WITH NARRATION
MOODLE LESSON MODULES
FORUMS
WIKIS
OTHER MOODLE FUNCTIONS
REQUIRED TEXTBOOK READINGS
RECORDED DOCUMENT CAMERA EXAMPLES
EXTERNAL WEBLINKS (INCLUDING YOUTUBE VIDEOS)
Number
Average (100%)

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.

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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.

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