Investigating the Retention Rates in Georgia Tech's Online Master of Computer Science Program

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Link to Video: https://drive.google.com/drive/folders/1ME8x7GqQPbGvQR7-7_SXnQaDv18sH0vE?usp=sharing

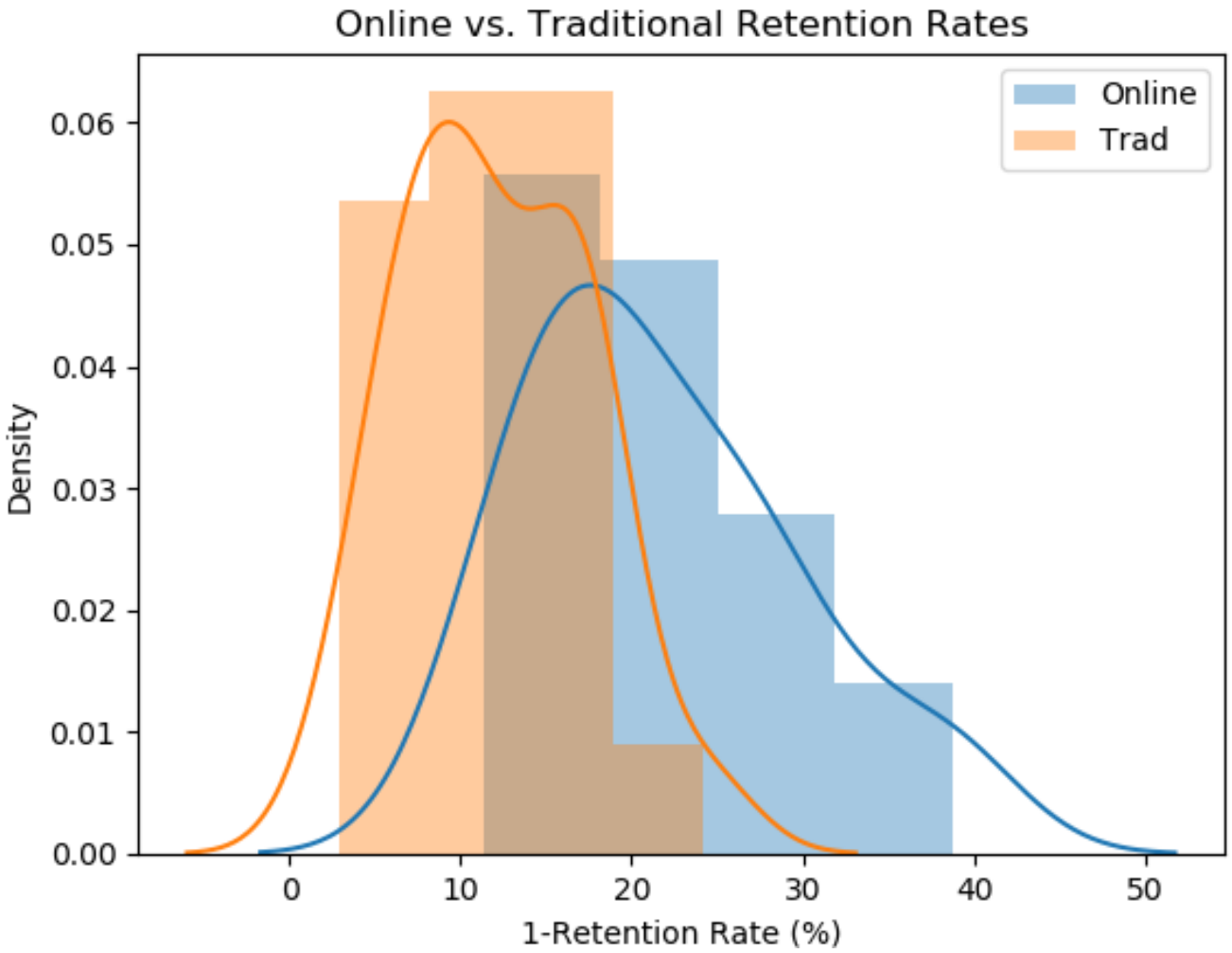
Problem

- Online Courses have increased in popularity
  - Percentage of students taking a fully online degree increased from 6.1% in 2008 to 27.3% in 2016 (Synder, 2018).
- Very flexible so could provide an education to people with a full-time job or a family at a fraction of the cost of traditional learning.
- Retention Rate – The percentage of students a university retains over a period of time.
  - The average retention rate for online colleges is 55% compared to 77% for traditional universities (Burnsed, 2010)
  - The average retention rate is 10-20% lower for online courses than their traditional classroom counterpart (Herbert, 2006).

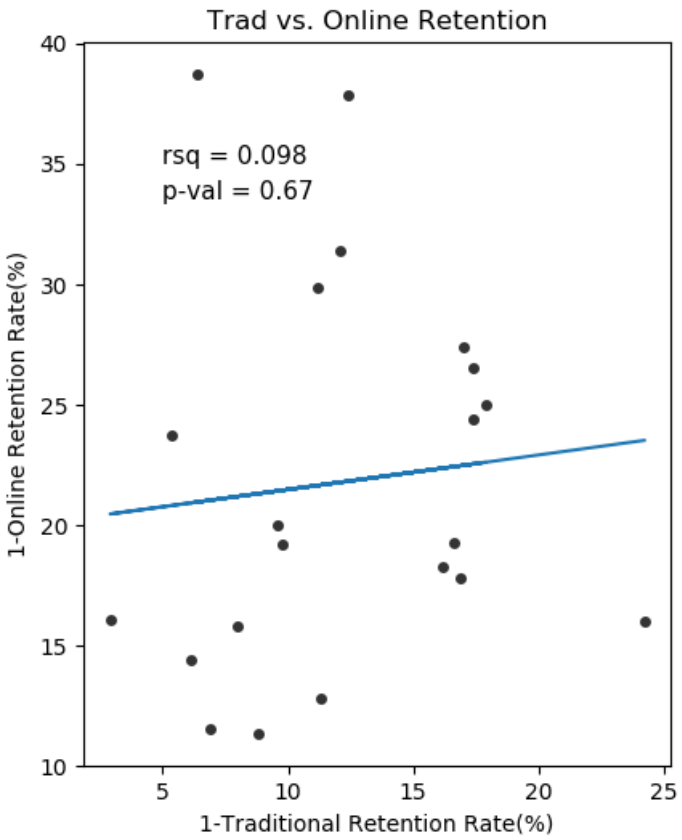
Solution

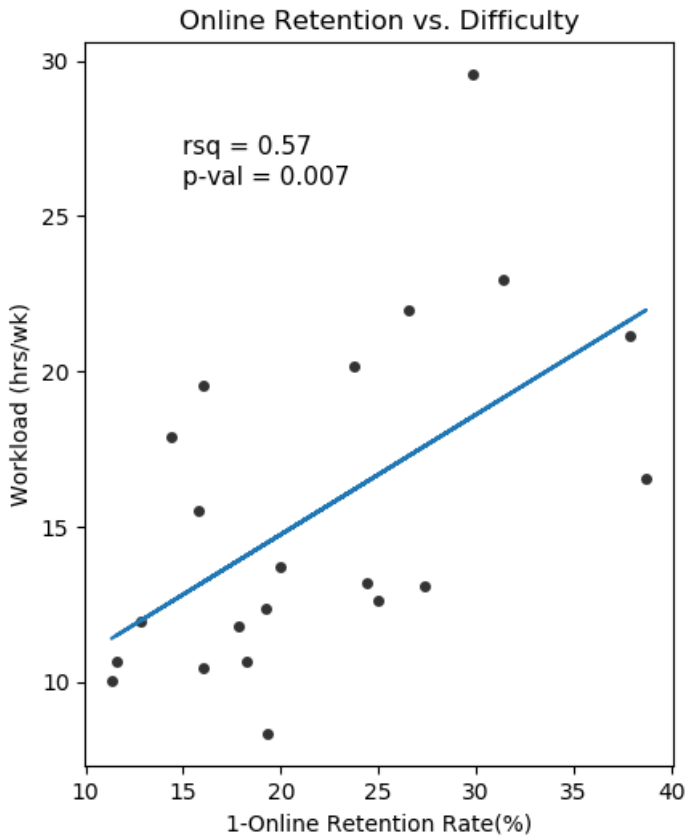
- Determine if Georgia Tech's Online Master of Computer Science (OMSCS) has lower retention rates compared to traditional courses.
- Collect data on student experiences in OMSCS
  - Surveys
  - Interviews
  - Online Course Reviews
- Are lower retention rates innate within online learning programs? How can universities address the problems with online learning courses?
  - Motivation
  - Engagement
  - Satisfaction

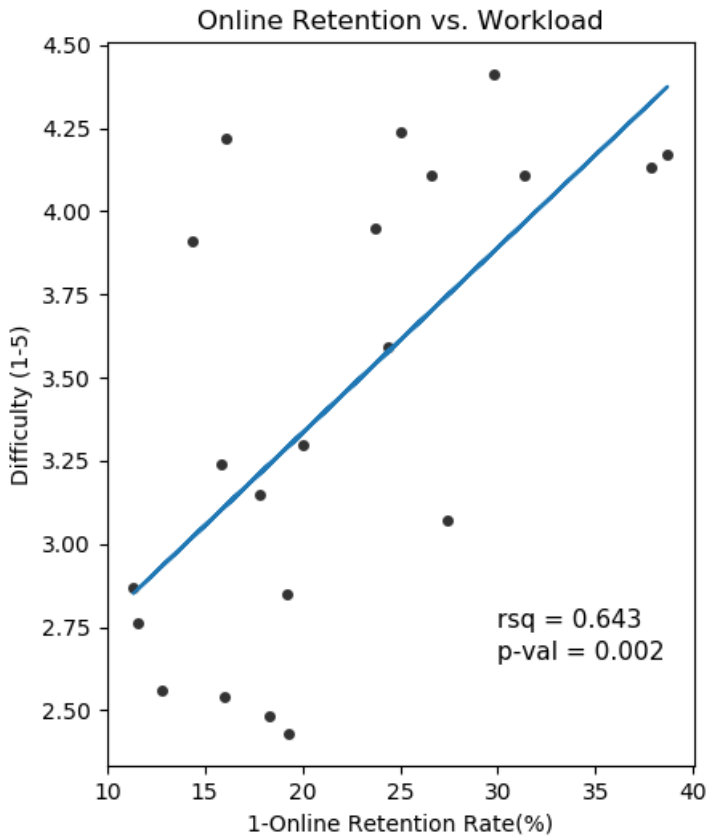
Online vs. Traditional Retention Rates



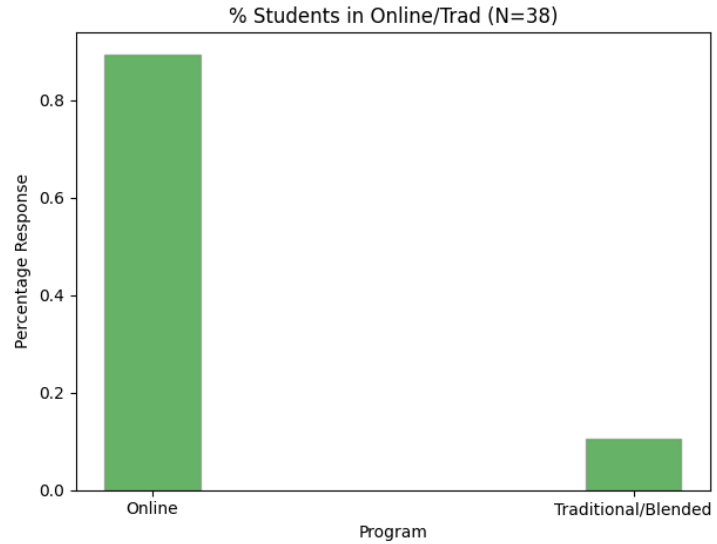
Online vs. Traditional Retention Rates

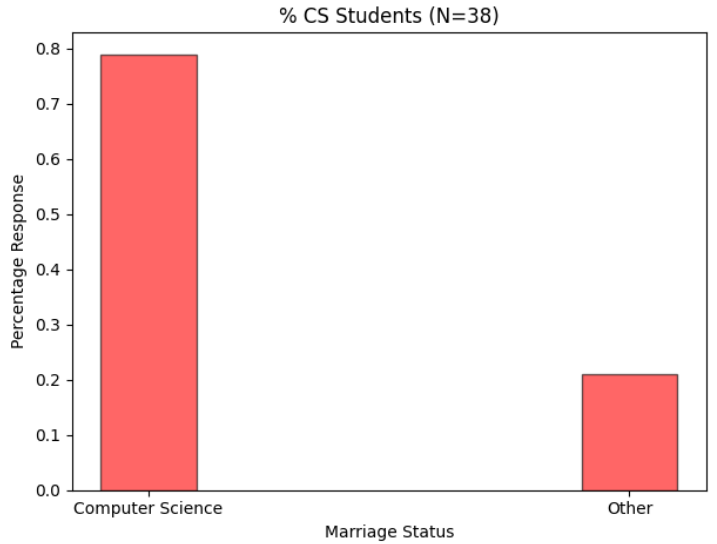


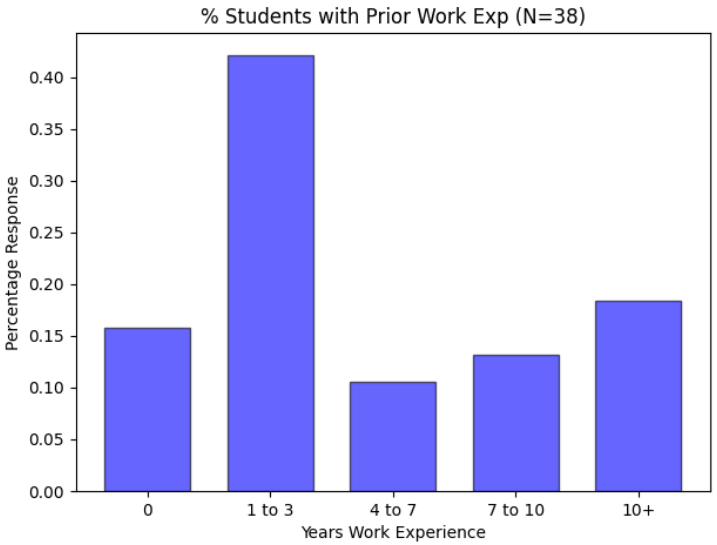


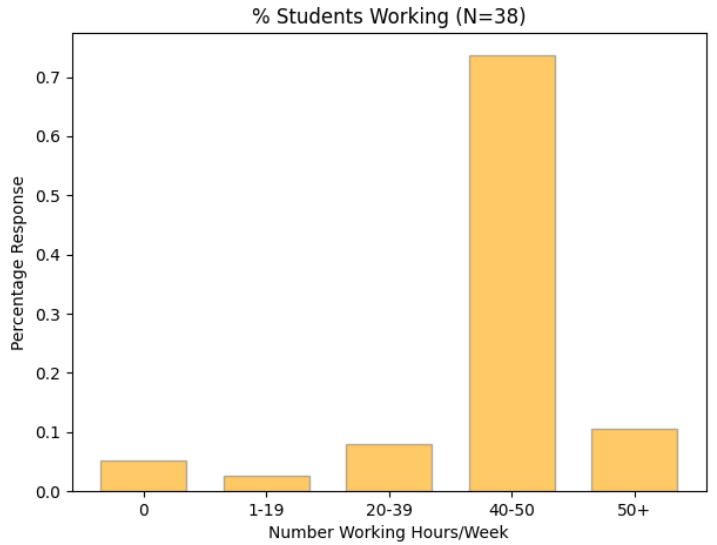


OMSCS Survey: Respondent's Background

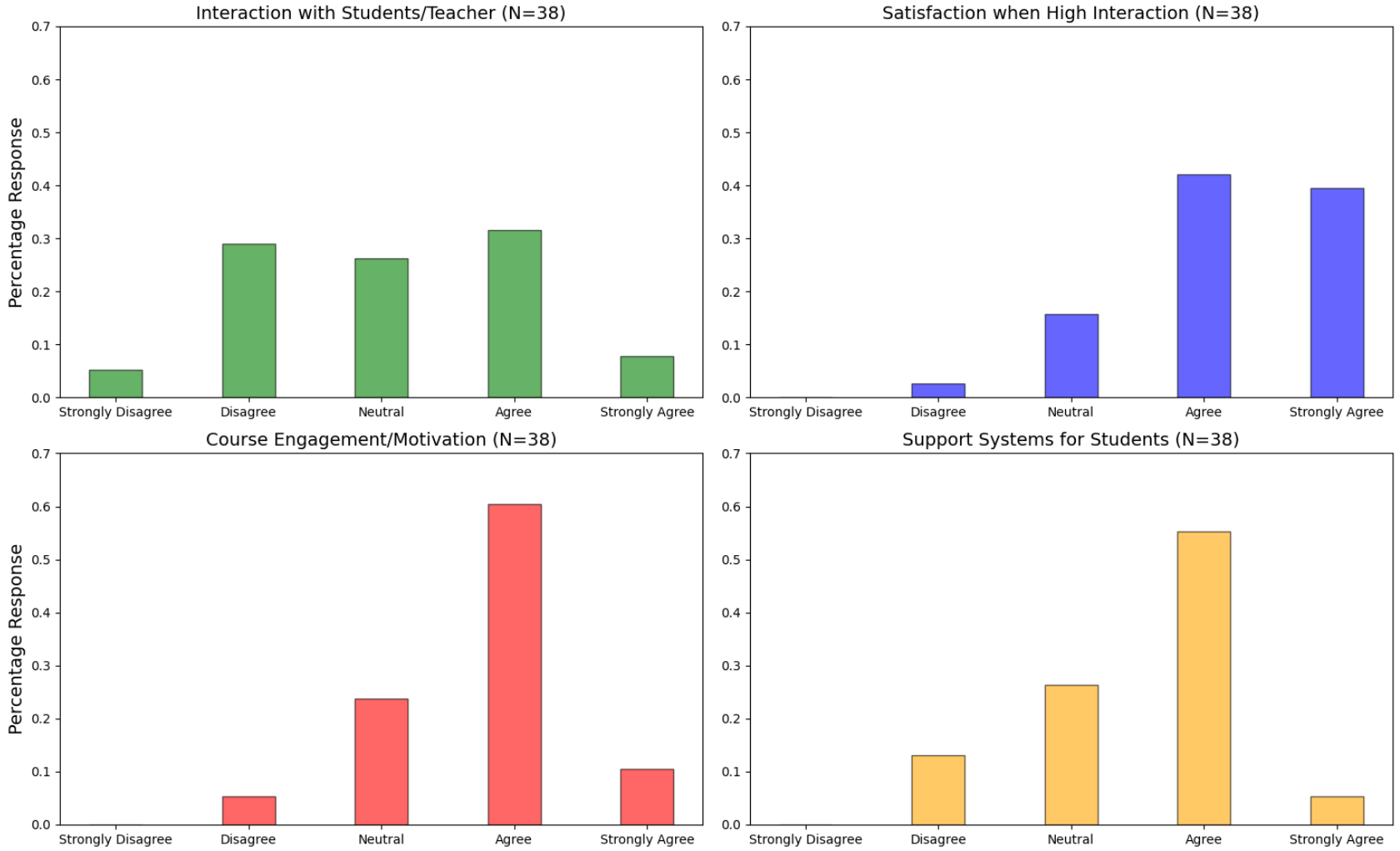




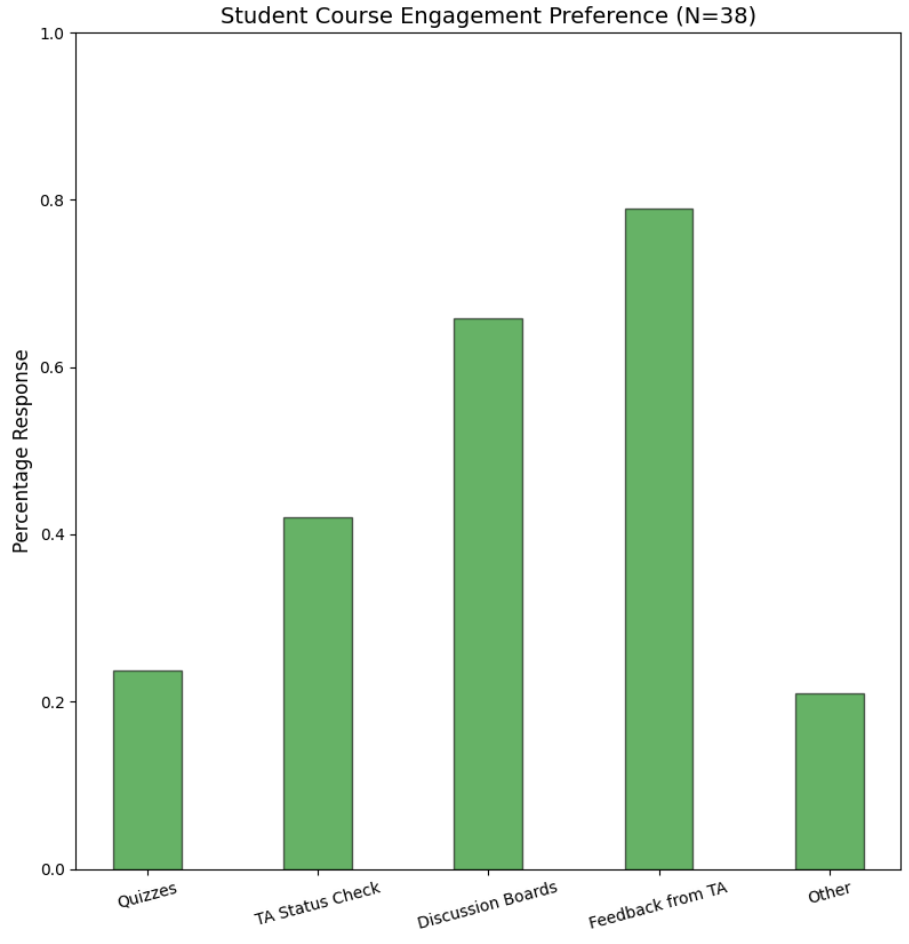


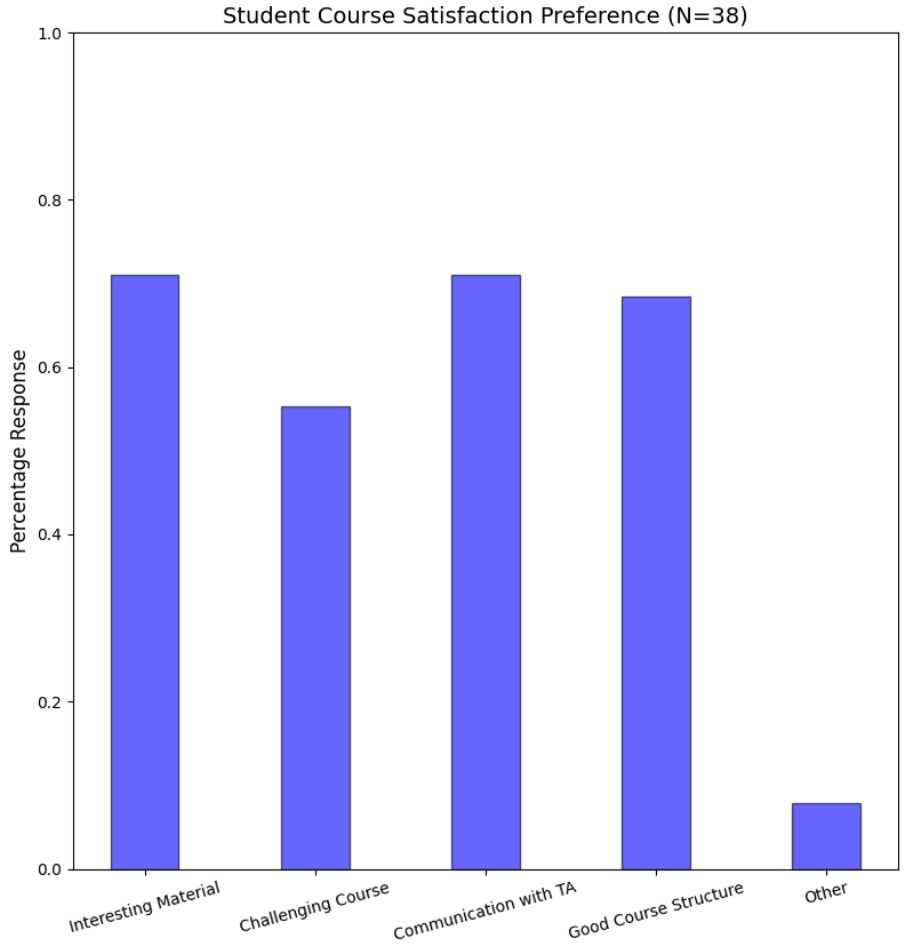


OMSCS Survey: Interaction, Engagement, Satisfaction and Support



OMSCS Survey Responses: Engagement, Satisfaction





OMSCS Survey: Retention Rates

Reason for Dropping Course	Yes	No
Students who Dropped a Course (N=38)	23 (60.5%)	15 (39.5%)
Students who Liked Course they Dropped (N=23)	13 (56.5%)	10 (43.5%)

Reason for Dropping Course	% of Students who Selected Response
Did Not Have Enough Time	65.2%
Personal Issue	47.8%
Did not Enjoy Structure of Course	39.1%
Did not Enjoy Material	34.8%
Was not Prepared or Performing Well	30.4%
Little Engagement from TAs/Instructor	17.4%
Other	21.7%

OMS Central Course Reviews

Reason for Dropping Course (N = 79)	# of Reviews	% of Reviews
Outdated Material/Technology (outdated, depreciated, inefficient)	7	8.86%
Ambiguity in Coursework (ambiguity, clarity, poorly written, confusing, unclear, too open ended)	26	32.9%
Lack of Support from Professor/TA (unmotivating, lack of support, absent, no feedback, not responsive)	38	48.1%

Guidelines from Data Sources

- OMSCS makes up a diverse group of students with different expectations and goals coming into the program.
- There are inherent sampling biases based on the data source.
- Several guidelines for universities for online courses.
  - 1. Increase student interaction through other means besides Piazza/slack. This could be optional video discussions and networking events, peer reviews.
  - 2. Give clear directions on assignments and expectations coming into the course. Doing this will prevent more students from needing help and can mitigate the issue of too many students and not enough TAs.
  - 3. Instructors and TAs should be responsive and present on different platforms. If students feel the TAs and professors do not care then they will not.

Conclusion

- Online retention rates were significantly lower for online computer science courses compared to their traditional counterpart.
- The course difficulty and workload were highly correlated with retention rate.
- Only 40% of survey respondents believed they had sufficient interactions with students and instructors in their online courses while 80% felt more salinification in courses with higher levels of engagement.
- 60.5% of respondents dropped a course. The most common reasons were lack of time, and a personal issue came up while lack of engagement from TAs and instructors was the least common.
- Poor response times and lack of support from TAs and the professor was the largest reason for dissatisfaction in low retention OMSCS courses at 48.1%.
- Ambiguity in coursework and assignments were the second largest reason at 32.9%
- In a small sample of survey respondents, retention rates are mostly a function of students not have the time to fit OMSCS into their lives (innate with online learning).