Impact of Increased Class Sized and Delivery Mode on Grades

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BACKGROUND

California has a predicted deficit of 2 million degrees by 2025.
In California, there is a predicted deficit by 2025 of more than 2 million workers with degrees or credentials. Millions of Californian lack the required credential or degree to benefit from California's projected economic growth (California Competes, 2015).

CSU prioritizes student success with Graduation Initiative 2025.
The California State University (CSU) publically committed to improved graduation rates and zero achievement gaps by 2025 for its undergraduate student population.

Low grades impede progress, damage confidence and add to student debt.
Low grades are known to negatively impact student retention and graduation rates by impeding student progression (Bahr, 2009; Yue & Fu, 2017), to damage academic confidence (Fowler & Boylan, 2010; Lotkowski, Robbins & Noeth, 2004), increase the cost of college, and add to student debt (Britt, Ammerman, Barrett & Jones, 2017).

Child and Family Development faculty recommended exploring relationships between course grades and class size and course delivery model.
Faculty noticed that students seemed to struggle more when classes sizes were larger and when they were offered on-line compared to the same course offered face-to-face.

RESEARCH QUESTIONS

- Is there evidence that grades are related to class size?
- Is there evidence that grades differ when courses are offered on-line compared to the same course offered face-to-face?
- What do students in on-line classes report about difficulties they have
- What do faculty notice about students in large and/or on-line classes?

METHODS

Data Exploration:
We used Tableau to explore the relationship between grades, class size, and delivery model. Courses were chosen from Fall 2009 through Spring 2019. Courses were selected if :
1) they had both online and face-to-face sections in the same academic year, and
2) there was some overlap in class size.

Student and Faculty Input:
We had planned to send a survey to faculty and students to get their input about difference in large classes and on-line classes in Spring 2020. Due to COVID-19 and the need to move all courses on-line, we did not have the opportunity to send surveys specifically for this project. We did send surveys out to students to get input on the changes made due to COVID-19 and were able to use some of those results for this project.

FINDINGS

Data Exploration

Class Size
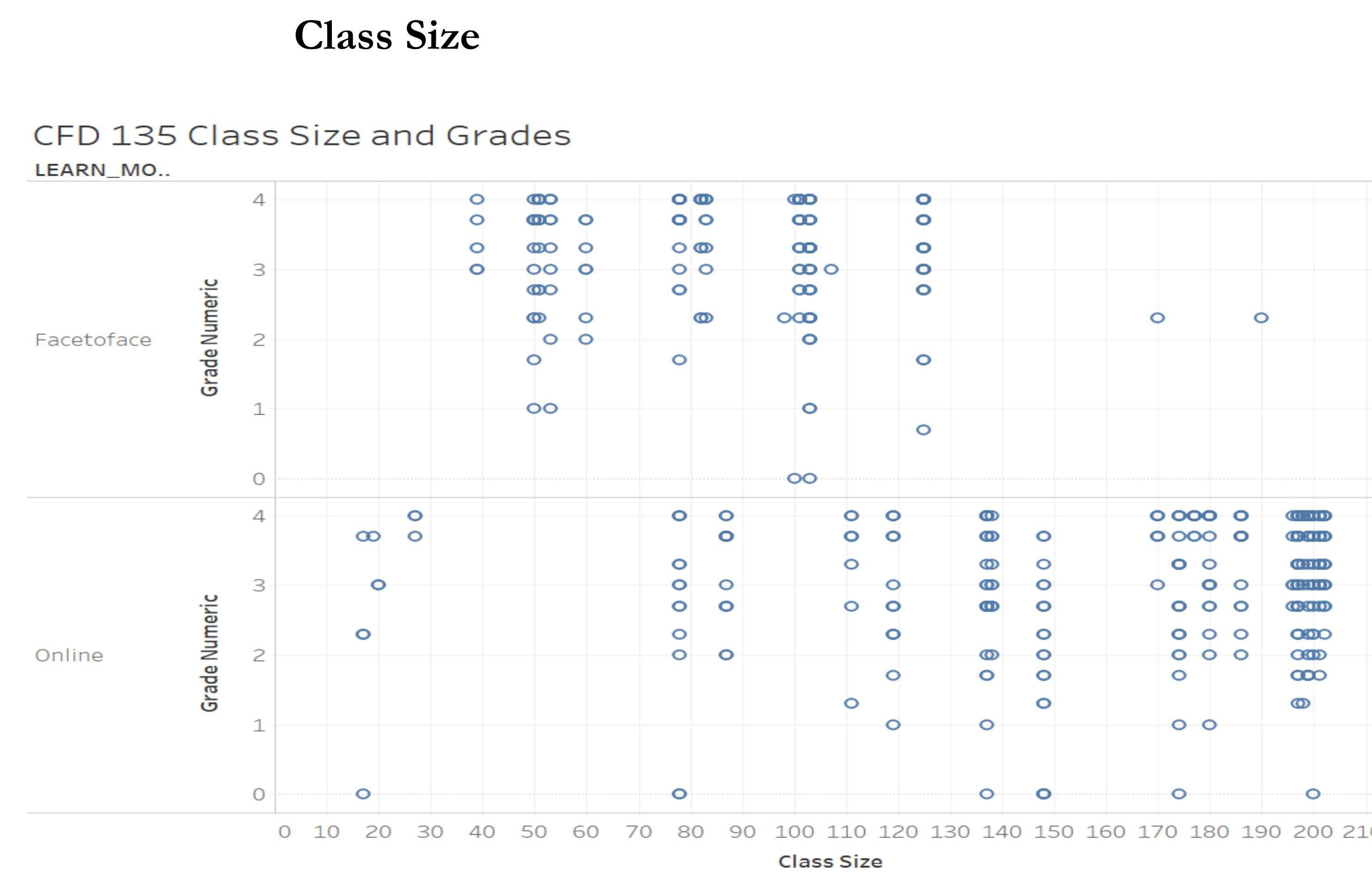
Delivery Mode
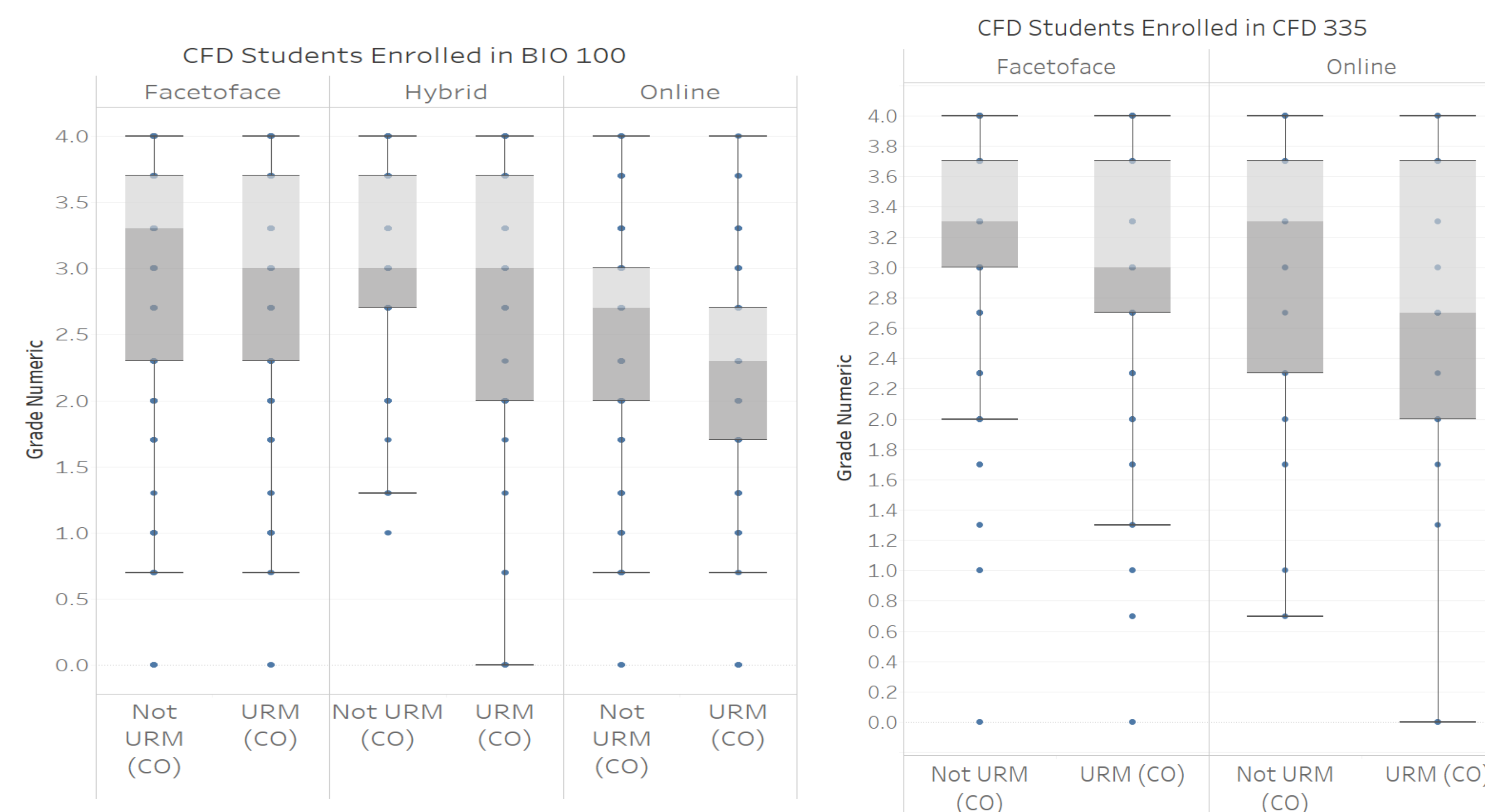
Survey Results Summary

- Interpretations of the results of the survey need to take into account the timing of the survey. However, results are still helpful for planning for future online courses.
  - The survey was sent in response to all courses moving online in response to COVID.
  - Many students were not expecting to take online courses and some faculty were not prepared to teach online.
- Some students reported difficulty with motivation and engagement in online courses.
- Students reported that they felt more engaged when faculty reach out to them individually.

CONCLUSIONS & FUTURE DIRECTIONS

Conclusions
- Class size does not appear to be related to grades
- Delivery model appears to impact grades:
  - While the averages grade in online and face-to-face sections does not always vary, there are more students receiving low grades in online sections compared to face-to-face sections of the same course.
- Underrepresented Minority (URM) students tend to have lower grades in both face-to-face and online sections compared to Non-URM.

Recommended actions:
- Develop guidelines for students to help them determine whether online courses are a good choice for them.
- Encourage faculty to participate in CTL training for online instruction.
- Find ways to make individual connections with students in online courses.
  - This becomes a greater challenge as class-sizes increase.

Recommended future analyses
- Disaggregate data further:
  - by transfer students and first-time freshmen.
  - by involvement in EOP
- It was difficult to disentangle class-size and delivery model. This is something we should consider in future analyses.

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