Grading Practices and Achievement Gaps in Political Science

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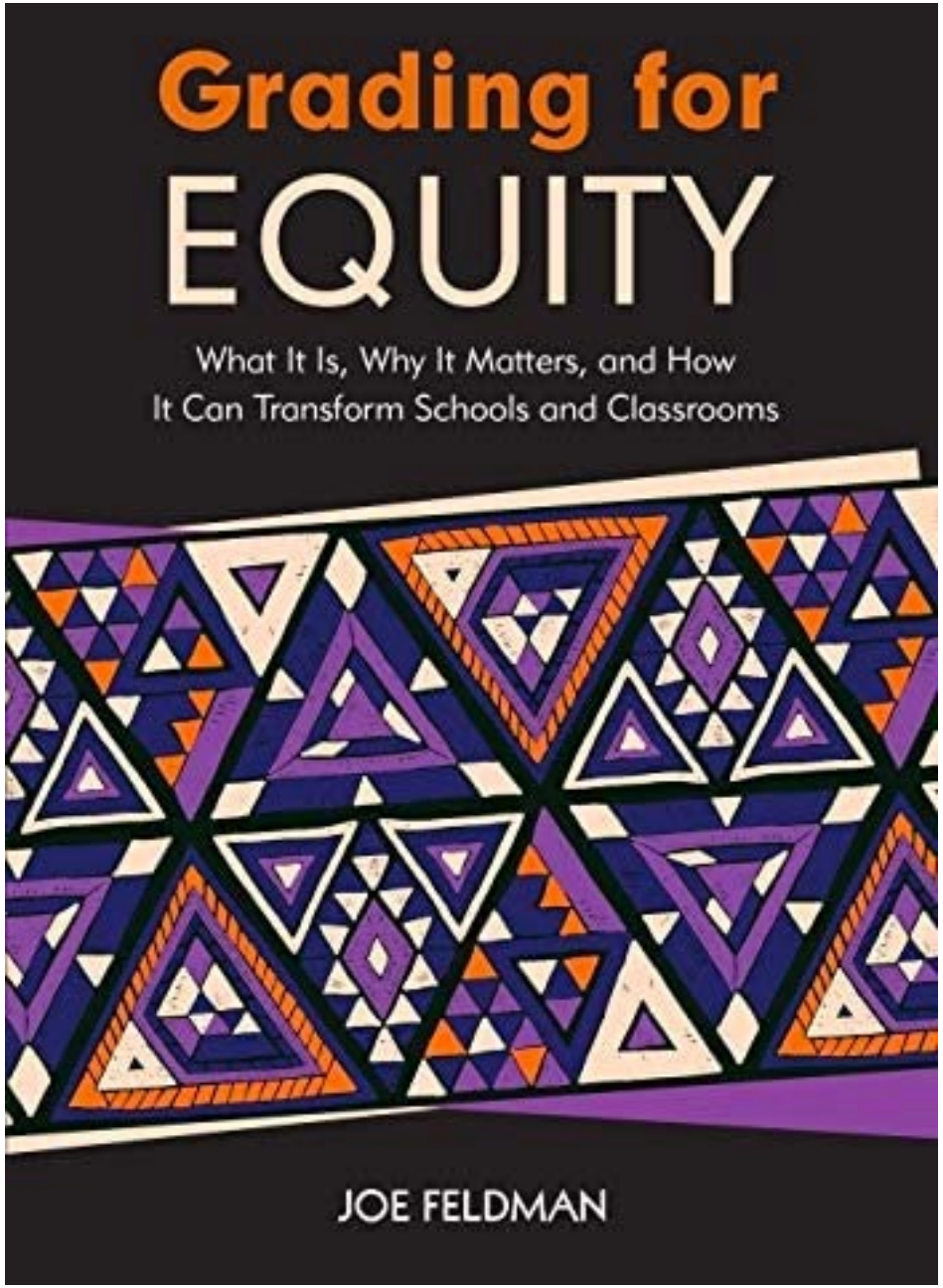
Institutional Context: California State University-Sacramento (Sacramento State)

- About 29,000 undergraduate and 3000 graduate students (as of October 2021)
  - Hispanic-Serving Institution (HSI)
  - 75%+ students are ethnic/racial minorities
  - 31% students are first-gen students
  - 43% Pell grant eligible students
  - 34% work full time
- DFW rates and the equity gaps rose during the pandemic

Why focus on grading practices?

- Grading has a direct impact on students' grades
- Instructors' biases and course design on equity gaps/achievement gaps

→ Department faculty reading group (Fall 2022)



Bias-resistant, accurate, and motivational grading practices

- Evaluate mastery of content over efforts and behaviors (e.g., late work, efforts).
- Limit extra credit, attendance, participation, homework (formative assessments)
- Utilize grading rubrics (limit bias, consistent grading)
- Heavier weight to recent performance
- Use minimum grading, rather than zeros for no submission
- 0-4 grading scale rather than 0-100 scale
- Mandatory retakes and redos for everyone

→ Applicable to college courses?

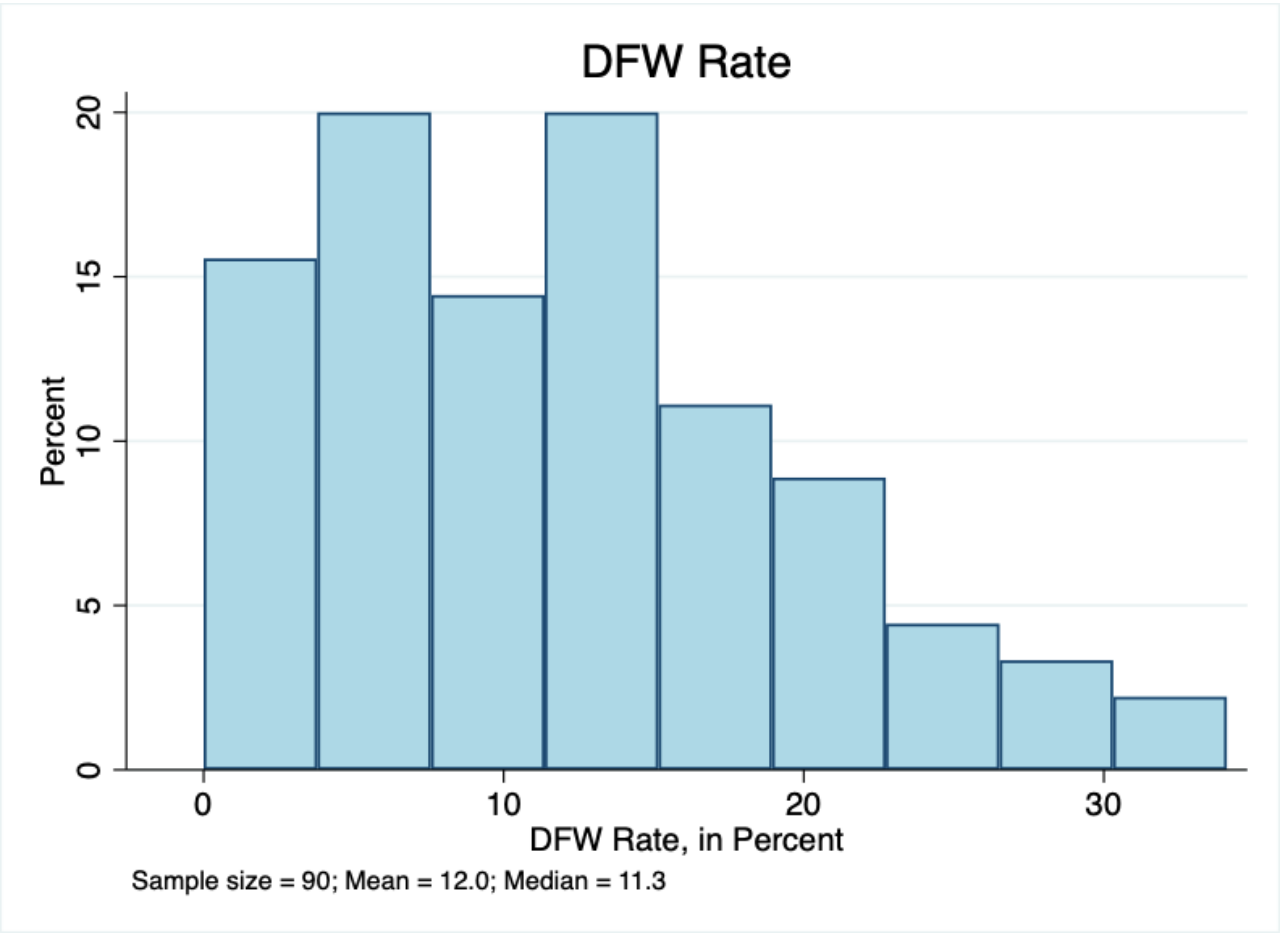
Main Question

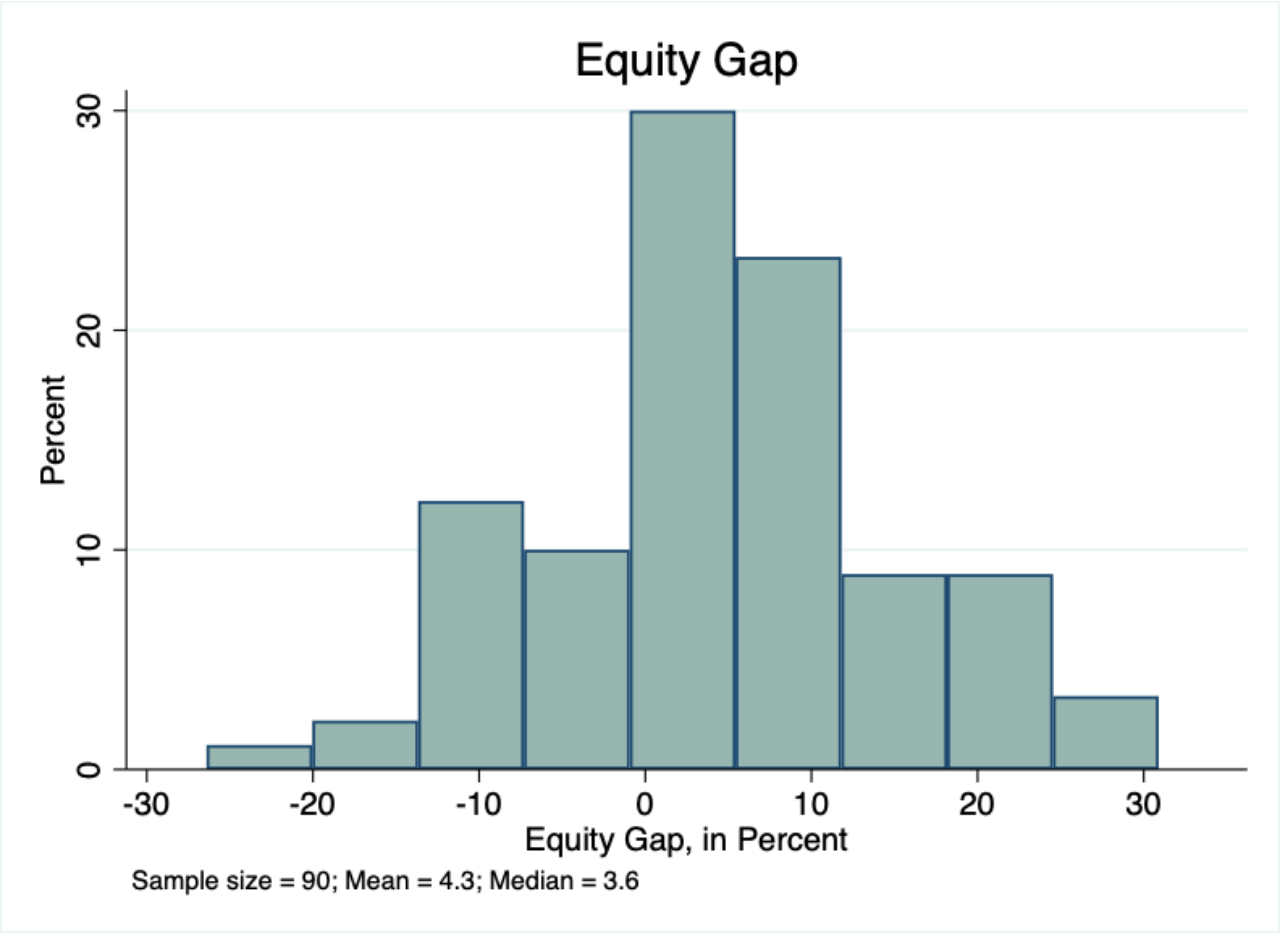
How are course policies, grading practices, individual instructors' characteristics (e.g., gender, contract type, seniority), the pandemic effect, and course modality (online, in-person) correlated with grade distribution?

Research Design

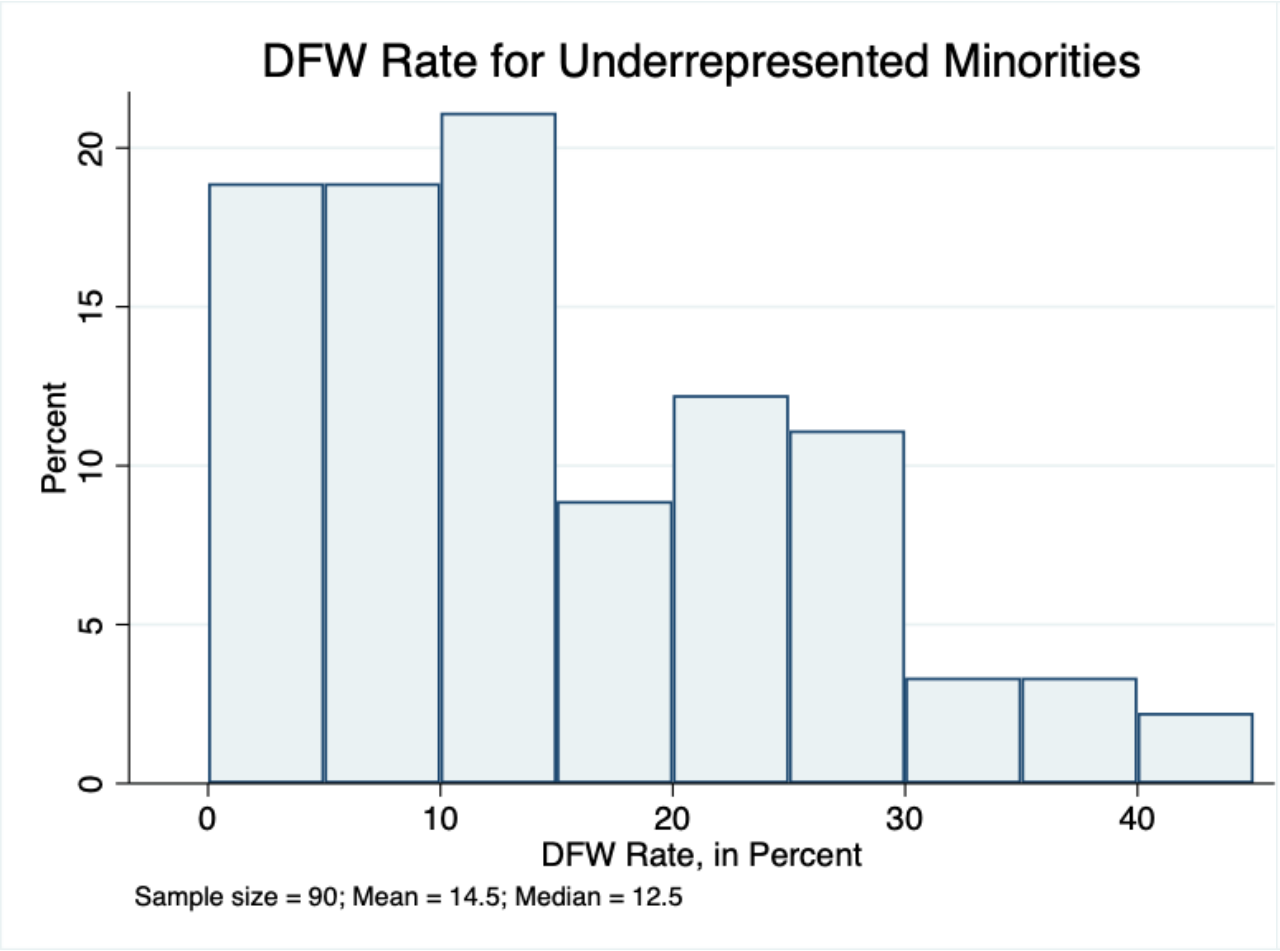
- DV: 1) DFW rates and 2) the equity gap (URM vs. non-URM)
- IV:
  - Grading: attendance, late work, retakes, grade calculation method, recent assignment weight, extra credit
  - Section: course modality, class size, % URM,
  - Instructor: gender, tenure-line/lecturer
- Sample: Upper division POLS courses with 15% or higher DFW rates between 2019 and 2022
  - Fall 2019 (pre-pandemic, 33 sections), Fall 2020 (pandemic, 33 sections), Fall 2022 ("post"-pandemic, 25 sections)
- Syllabus coding + institutional data

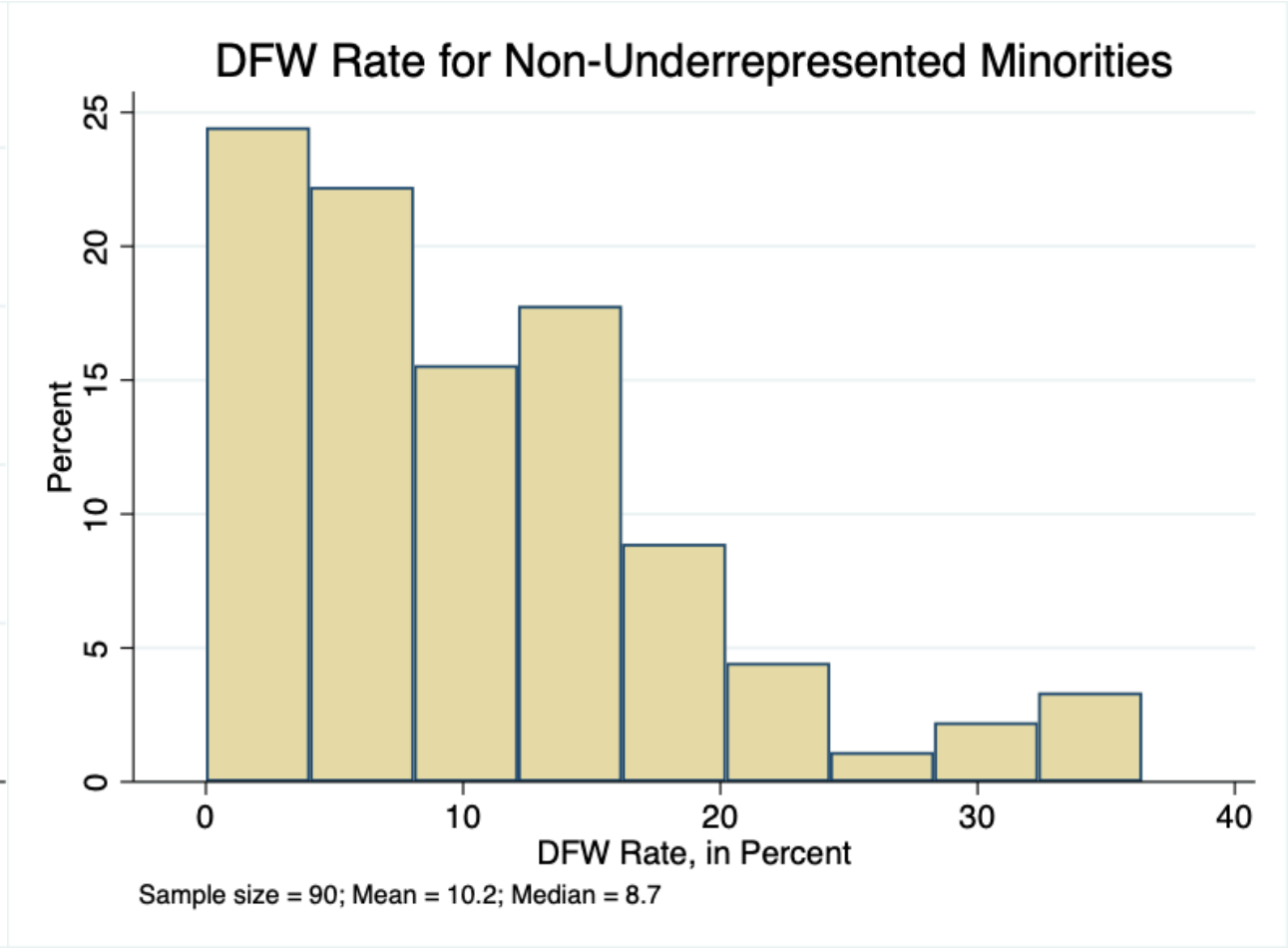
Dependent Variables

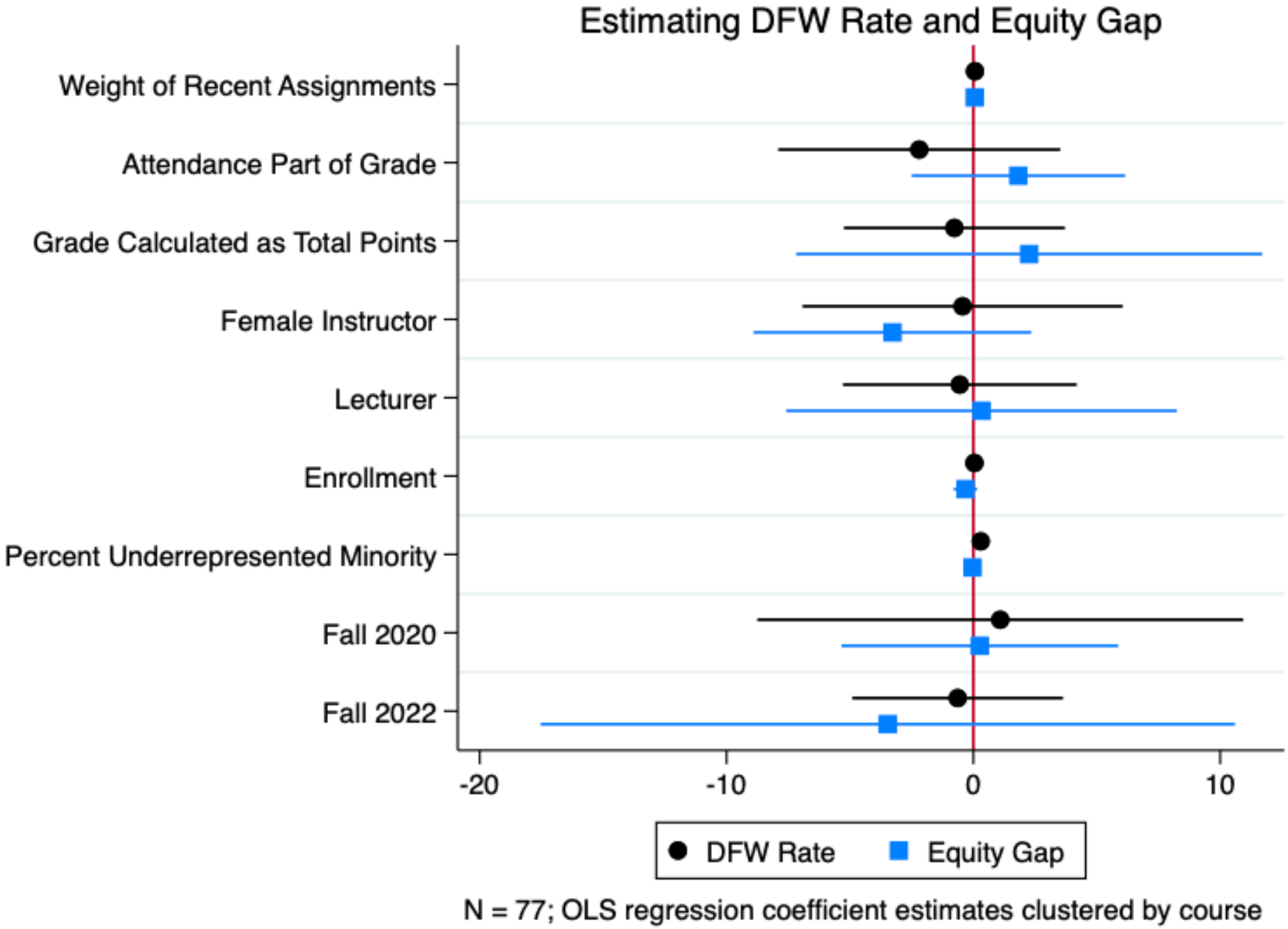


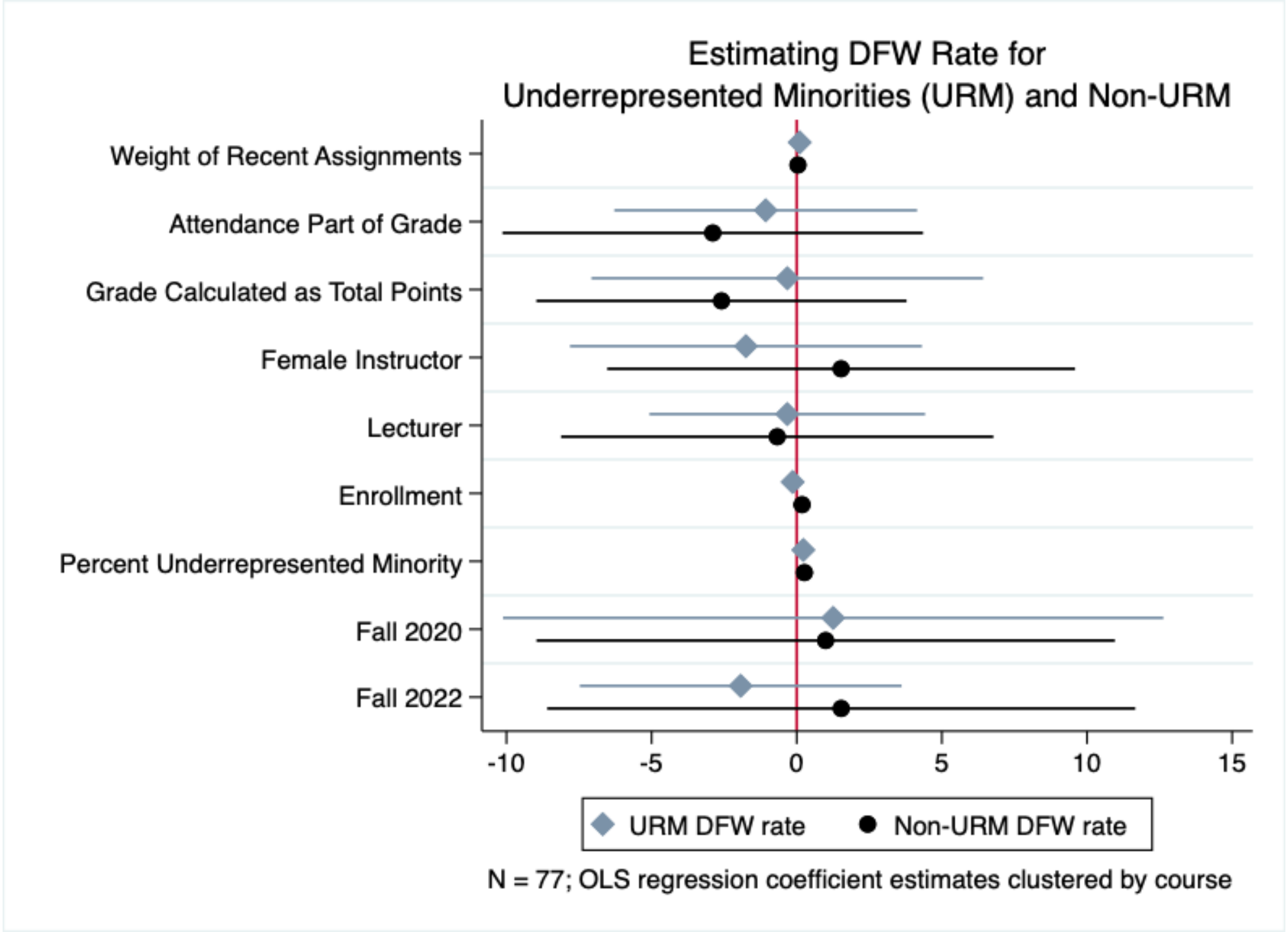


Dependent Variables

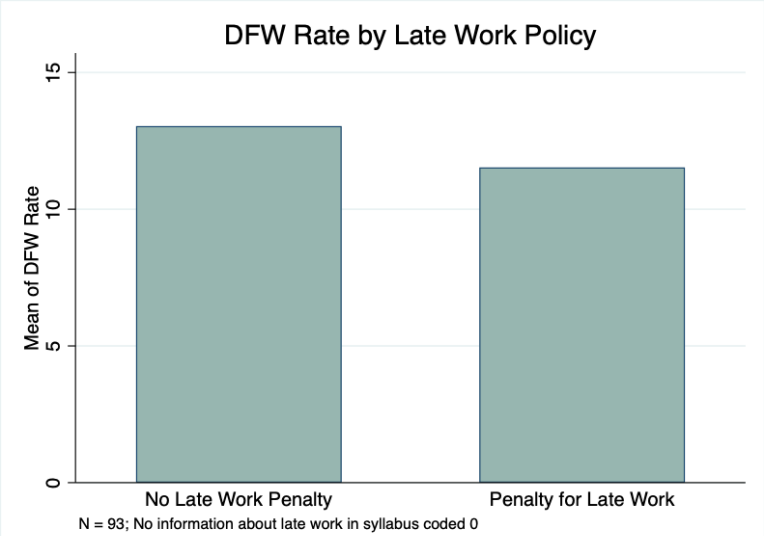


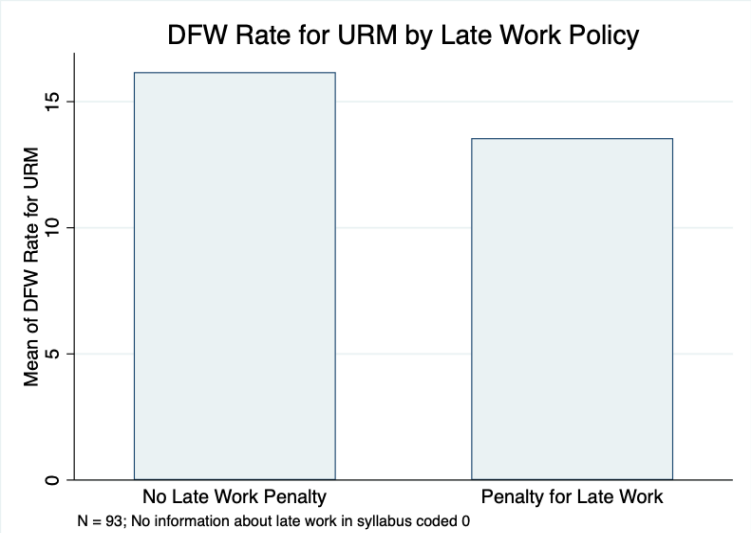


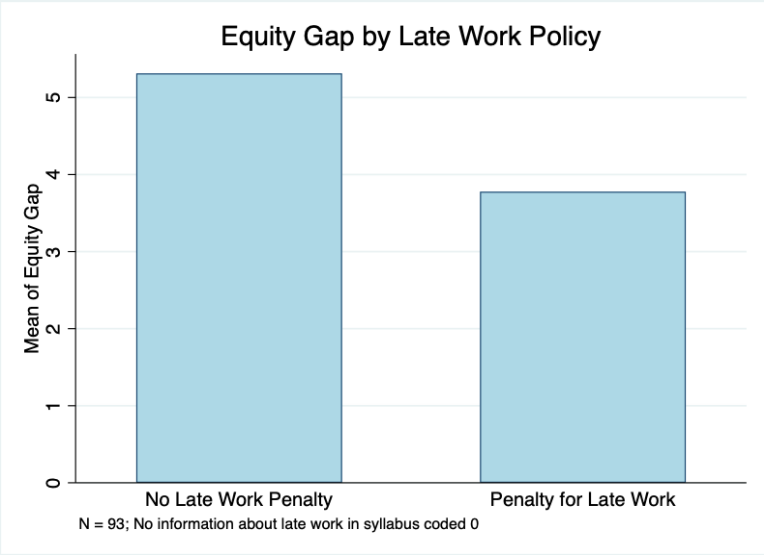

Estimating DFW Rate and Equity Gap
Weight of Recent Assignments
Attendance Part of Grade
Grade Calculated as Total Points
Female Instructor
Lecturer
Enrollment
Percent Underrepresented Minority
Fall 2020
Fall 2022
-20
-10
0
10
DFW Rate
Equity Gap
N = 77; OLS regression coefficient estimates clustered by course

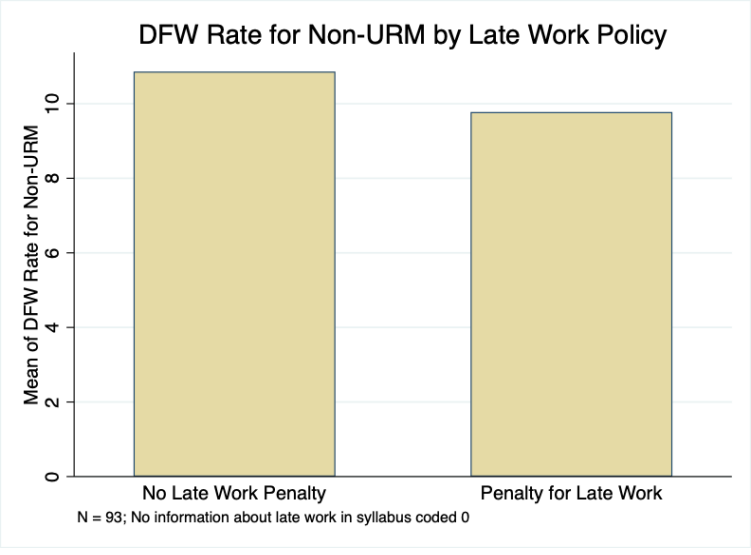

Estimating DFW Rate for
Underrepresented Minorities (URM) and Non-URM
Weight of Recent Assignments
Attendance Part of Grade
Grade Calculated as Total Points
Female Instructor
Lecturer
Enrollment
Percent Underrepresented Minority
Fall 2020
Fall 2022
-10
-5
0
5
10
15
URM DFW rate
Non-URM DFW rate
N = 77; OLS regression coefficient estimates clustered by course

Bivariate Analysis for Late Work Policy

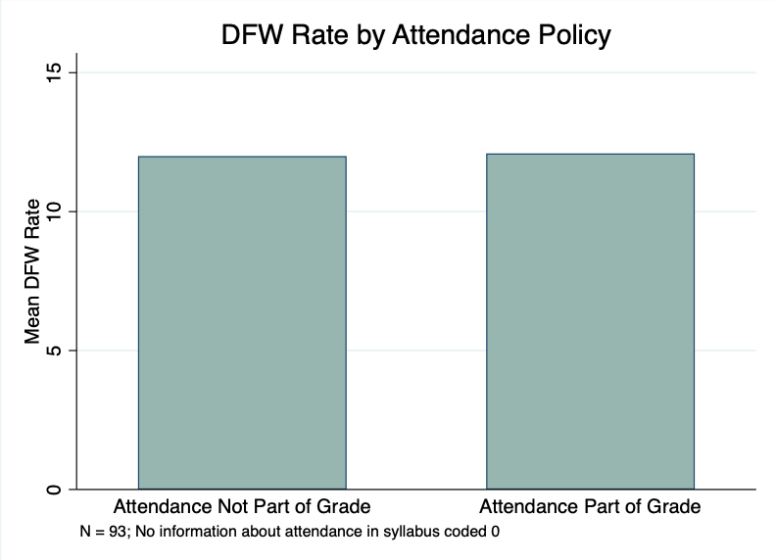


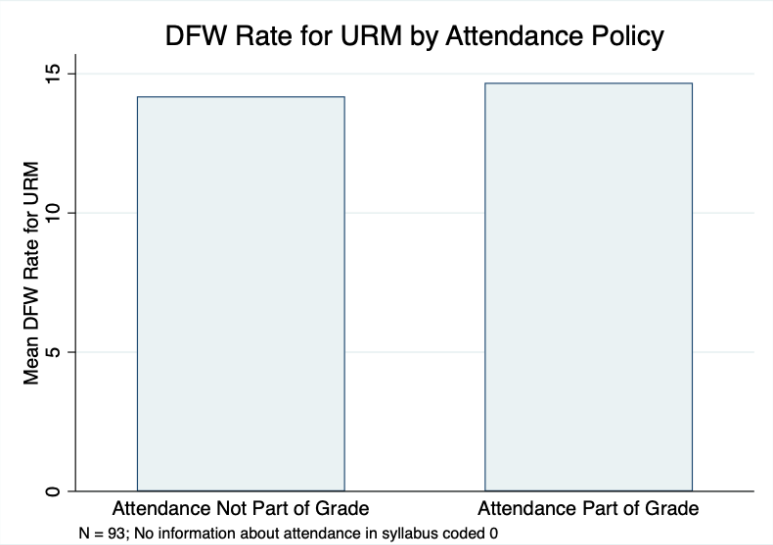


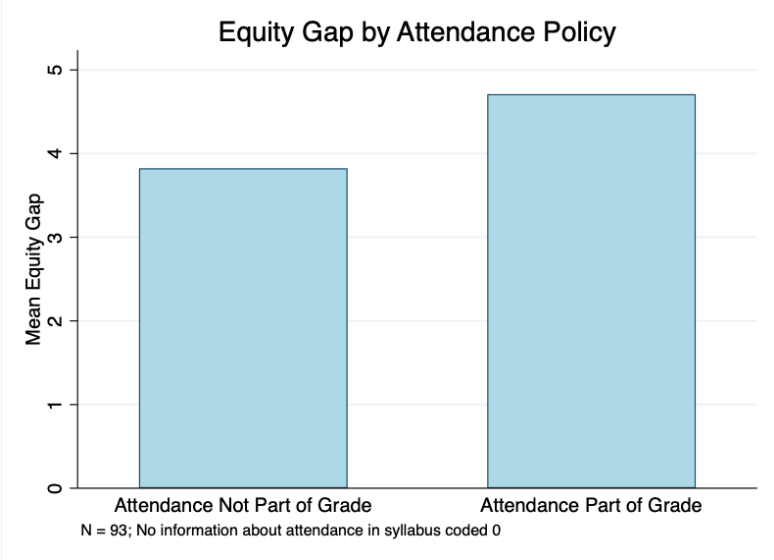


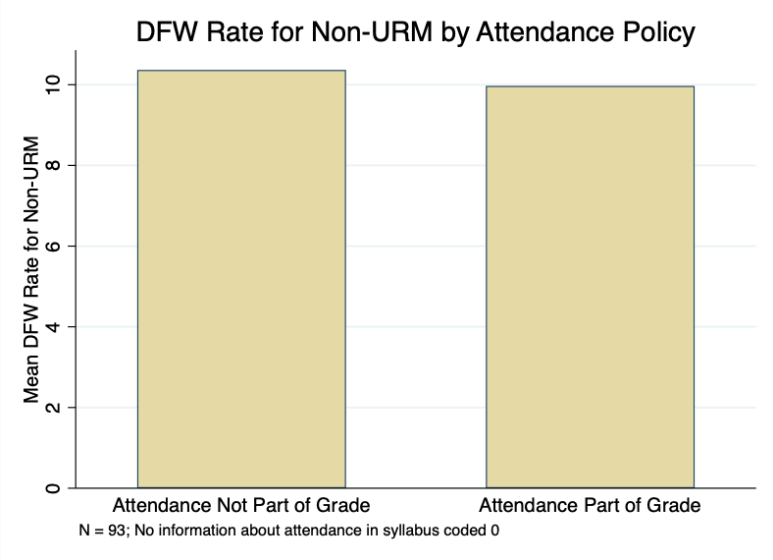


Bivariate Analysis for Attendance









Potential next steps

- Include all other upper division POLS courses during the same time period
- Analyze all sections of POLS 1 (Introduction to Political Science) for the same three semesters
  - POLS 1 only OR combine POLS 1 with the data we already have
  - Not high DFW rates but high enrollments + student-level variations + instructor level variations
- Maybe change the unit of analysis from course to students (IRB, long time to obtain the data)

Extra slides

Grading Variables from Syllabi

Variable Name	Variable Coding	Sample Size (n)	Descriptive Statistics
Attendance	1 = Attendance part of grade 0 = Attendance not part of grade (or not in syllabus)	93	Mode: Attendance part of grade. 53.8% of sections have attendance as part of grade
Grade Calculation	1 = Total points used to calculate final grade 0 = Percent, weights, or another way used to calculate final grade	84	Mode: Percent, weights, or another way used to calculate final grade. 65.5% of sections use percent, weights, or another way.
Recent Assignment Weight	Percent of assignments due within last month of semester (May)	79	Mean: 30.3% Median: 25.0%
Late Work	1 = Penalty for late work 0 = No penalty for late work, or not mentioned in syllabus	61	Mode: Penalty for late work mentioned in syllabus. 65.6% of sections have a penalty for late work mentioned in syllabus.

Section Variables

Variable Name	Variable Coding	Sample Size (n)	Descriptive Statistics
Enrollment	Number of students enrolled in section	90	Mean: 40.6 students Median: 40 students
Percent URM	Percent of students enrolled who are African Americans, American Indians/Alaska Natives, Latinx, and any non-US citizen visa holders	90	Mean: 44.4% Median: 45.0%

Instructor Variables

Variable Name	Variable Coding	Sample Size (n)	Descriptive Statistics
Instructor Female	1 = Female 0 = Male	92	Mode: Male 65.2% of sections had male instructor.
Lecturer	1 = Lecturer 0 = Tenure line faculty	92	Mode: Lecturer. 60.9% of sections taught by lecturer.

Section Modality by Year Semester

	Year Semester			
Modality	**Fall 2019**	**Fall 2020**	**Fall 2022**	Total
Online	0	32	3	35
In Person	34	1	22	57
Total	34	33	25	92

Highest DFW for Large Enrollment Courses (F20-S22)

Course	DFW	Pell Equity Gap	URM Equity Gap	Total #	Avg # per Term
130 International Politics	25.50%	7.6	5.4	513	128
140 Comparative Politics	20.90%	1.7	-6.4	302	76
180 California Politics	19.30%	5.9	15.3	663	166
35 World Politics	18.80%	7.4	7.8	399	100
111 Political Thought (II)	18.70%	6.2	4.4	268	67
100 Research Methods	18.40%	8.1	6.5	407	102
112 Current Political Thought	17.30%	0.5	-0.5	301	75
1 Essentials of Government	10.80%	0.8	3.8	5,374	1,344
150 American Government	8.70%	-0.8	3.3	1,983	496

Course Number	Average DFW F17-F19	Average DFW S20-S22	Difference
1 Essentials of Govt	12.5%	10.6%	-1.9%p
35 World Politics	20.3%	18.0%	-2.3%p
100 Research Methods	8.3%	15.9%	7.6%p
111 Political Thought (II)	10.9%	19.7%	8.8%p
112 Current Political Thought	7.2%	15.6%	8.4%p
130 International Politics	16.4%	25.3%	8.9%p
140 Comparative Politics	9.0%	17.9%	8%p
180 California Politics	11.2%	19.9%	8.7%p

Abstract

- This study empirically tests whether existing recommendations to revisit traditional grading practices to promote equity apply to college-level Political Science education. Analyzing 90 upper-division Political Science courses in Fall 2019, Fall 2020, and Fall 2022, this preliminary study found no statistically significant impact of course policies, grading practices, individual instructors' characteristics (e.g., gender, contract type, seniority), the pandemic effect, course modality (online vs. in-person) on the DFW rates and equity gaps. Penalty for late work decreases DFW rates and equity gaps, which is the only statistically significant finding and contradicts existing recommendations for equitable grading practices.