An Examination of Mandatory Class Attendance and Academic Performance in a Doctor of Pharmacy Program

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INTRODUCTION

- Prior to 2020-2021, at Mercer University College of Pharmacy, class attendance was defined as a student's professional responsibility
  - Attendance was not formally monitored
- During 2020-2021, faculty noted a decrease in class attendance and course performance
- A mandatory attendance policy (MAP) for required courses in the PharmD program was implemented in 2021-2022.
  - Students were required to attend ≥80% of all course learning activities
  - ≥20% absenteeism considered a Student Code of Conduct violation
  - Archived audio/video recordings provided if overall class cohort attendance was ≥80%. If class cohort attendance was <80%, then the video recording for that course activity was withheld but the audio remained accessible.

OBJECTIVE

To determine (1) grade distribution pre- and post-MAP, (2) the relationship between the MAP and grade point average (GPA), and (3) student adherence to the MAP.

METHODS

- Course grade comparisons limited to first and third professional years due to teaching-out a legacy curriculum and teaching-in a renewed curriculum
- Analyses of third professional year course grades included one year of pre-MAP grades (2020-2021) from 134 students and one year of post-MAP grades from 122 students (2021-2022)
- Analyses of first professional year course grades included one year of pre-MAP data from 117 students and two years of post-MAP data from 152 students
- Quality point values for interpretation of letter grades were assigned (A=4; B+=3.5; B=3; C+=2.5; C=2; and, F=0)
- Aggregate, weighted and unweighted grade point averages (GPA) were computed pre- and post-MAP
  - Analysis of Covariance (ANCOVA) was used to test for an interaction between curriculum year and MAP using aggregate GPA
  - Within each curriculum year, independent samples t tests were used to compare the mean GPAs pre- and post-MAP, and effect sizes were reported in terms of differences in GPAs and Cohen's d

- Data from the first, second, and third professional year students were used to examine student adherence to the MAP
  - Chi-square tests examined significant changes across semesters and academic years in the number of MAP violations

RESULTS

Figure 1 . Grade Distributions Pre- and Post-MAP

Third Professional Year Course Grades
- Pre-Mandatory Attendance Policy
- Post-Mandatory Attendance Policy

First Professional Year Course Grades
- Pre-Mandatory Attendance Policy
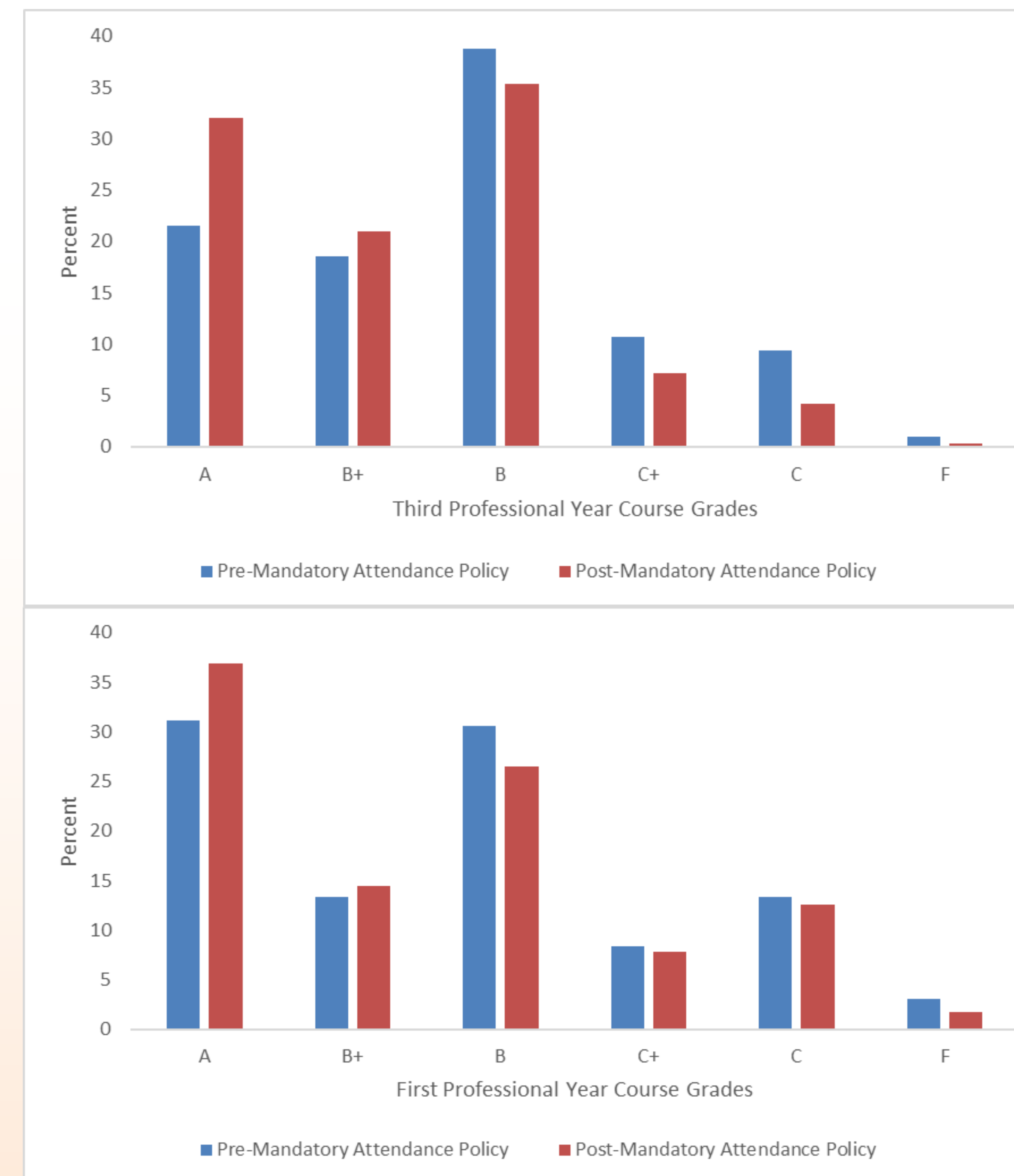- Post-Mandatory Attendance Policy

Table 1. Analysis of Covariance to Measure the Effect of Mandatory Attendance Policy, Curriculum Year, and their Interaction on GPA

Source	df	Unweighted GPA[a]			Weighted GPA[b]		
		MS	F	p	MS	F	p
MAP[c]	1	30.97	54.19*	p < .001	328.64	17.17*	p < .001
Curriculum Year[d]	1	5.29	9.25*	p = .002	1.19	0.06	p = .80
MAP[c] x Curriculum Year[d]	1	2.47	4.31*	p = .04	65.93	3.44	p = .06
Within	4748	0.57			19.15		
Total	4751						

[a]Unweighted grade point averages are based on grades only.
[b]Weighted grade point averages are based on course grades and course credit hours.
[c]MAP=Mandatory Attendance Policy
[d]Two curriculum years were include in the analysis, third professional year and first professional year of the Doctor of Pharmacy program.
*significant at the p value indicated

Table 2. Comparison of Mean GPA Before and After MAP Implementation

Year[a]	GPA Calculation[b]	Pre-MAP[c]			Post-MAP[c]					
		N[grades][d]	Mean GPA[e]	SD	N[grades][d]	Mean GPA[e]	SD	df	t-value	p	Cohen's d
Third	Unweighted	1154	3.13	0.68	977	3.34	0.59	2127.7	7.64*	p < .001	0.33
First	Unweighted	1114	3.11	0.88	1507	3.22	0.81	2248.4	3.50*	p < .001	0.13
Third and First	Unweighted	2268	3.12	0.78	2484	3.27	0.73	4636.6	6.86*	p < .001	0.20
Third	Weighted	1154	3.09	1.15	977	3.33	1.21	2129	4.59*	p < .001	0.21
First	Weighted	1114	3.12	1.24	1507	3.20	1.34	2486	1.46	p = .14	0.06
Third and First	Weighted	2268	3.11	1.31	2484	3.25	1.29	4750	4.04*	p < .001	0.11

[a]The third year curriculum included nine courses totaling 30 credit hours. The first year curriculum included ten courses totaling 34 credit hours.
[b]Unweighted GPAs are based on course grades only. Weighted GPAs are based on course grades and course credit hours.
[c]MAP=Mandatory Attendance Policy
[d]N refers to the number of grades used to compute a mean grade point average for the entire cohort enrolled in the curriculum year indicated
[e]GPA=Grade Point Average
*significant at the p value indicated

Table 3. Number of Students[a] Who Violated[b] MAP

Semester	First Academic Year Post-MAP[c] 2021-2022		Second Academic Year Post-MAP[c] 2022 – 2023		Comparison of First and Second Academic Years
	Students Violating MAP[c]	Students Adhering to MAP[c]	Students Violating MAP[c]	Students Adhering to MAP[c]	
	N n (%)	n (%)	N n (%)	n (%)	
Fall	338 23 (6.8)	315 (93.2)	275 22 (8.0)	253 (92.0)	x^2 = 0.32, df = 1, p = .57
Spring	292 42 (12.6)	292 (87.4)	289 59 (20.4)	230 (79.6)	x^2 = 7.01*, df = 1, p = .008
Comparison of Fall and Spring Semesters	x^2 = 6.40*, df = 1, p = .01		x^2 = 17.66*, df = 1, p < .001		

[a]Students included all Doctor of Pharmacy students enrolled in the first three professional years of the four year program.
[b]Students whose attendance dropped to 80% or below in a course were in violation of the mandatory attendance policy.
[c]MAP = Mandatory Attendance Policy
*significant at the p value indicated

CONCLUSION

Among Doctor of Pharmacy students, a mandatory attendance policy with an 80% attendance threshold for both individuals and class cohorts was associated with improved academic performance as reflected in the overall distribution of grades and improvement in grade point averages. Adherence to the MAP was high for individual students. Implementation of a MAP warrants consideration by schools and colleges of pharmacy seeking to improve students' academic performance.