

TABLE 1**Seat choice explanation themes, definitions, and examples from student responses.**

Theme	Explanation	Example student responses
Social connections	Wanting to be among friends	<ul style="list-style-type: none"> • Where my friends wanted to sit
Social avoidance	Wanting to avoid peers or have buffer seats around them	<ul style="list-style-type: none"> • Who was there, I tried to sit alone so I was less distracted • Seats where I would have a gap between others
Pragmatic	Arriving late, needing to leave early, sitting wherever available seats are	<ul style="list-style-type: none"> • Near an aisle so if I needed to come in late/leave early I wasn't bothering anyone • Time I come into class. The front is full when I come in.
Seeing and hearing lecture	Wanting to see the lecture material and hear the professor speak	<ul style="list-style-type: none"> • Being able to hear the professor clearly • Being able to see the PowerPoint/board clearly
Engaging with material	Wanting to be able to interact with professor, ask questions, be less distracted to learn better	<ul style="list-style-type: none"> • I think it's easier to focus when I don't have people's heads in front of me. • The professor could see my hand in the air more clearly if I have a question if I sit in the front.
Routine	Sitting where they always have or because someone has told them to sit there	<ul style="list-style-type: none"> • I have sat here for a while and it is my unassigned assigned seat. • I was told to sit in the front—by both my parents and faculty at orientation.
Professor avoidance	Wanting to avoid the professor or being noticed by the professor	<ul style="list-style-type: none"> • Never wanting to be in the line of fire • If I'm not paying attention, then the professor can't really tell. • Professors scare me.
Classroom size	Mentioning something about the classroom size or attempts to change it	<ul style="list-style-type: none"> • Feels like a smaller classroom • The size of the class (larger classes I sit in the front)

TABLE 2**Average attendance and performance by seat position in an introductory biology class over 2 semesters.**

Position	Attendance (% days attended)	Classwork scores (% correct)	Unit exam scores (% correct)	Final exam (% correct)	Total course points (% correct)
Front	86.4 (s.e. 1.65)	67.9 (s.e. 0.87)	72.2 (s.e. 1.45)	68.5 (s.e. 1.76)	78.4 (s.e. 1.15)
Middle	87.5 (s.e. 1.42)	67.1 (s.e. 0.76)	71.8 (s.e. 1.25)	68.7 (s.e. 1.51)	78.5 (s.e. 0.99)
Back	74.1 (s.e. 1.97)	63.4 (s.e. 0.87)	68.9 (s.e. 1.50)	65.8 (s.e. 1.80)	75.8 (s.e. 1.21)

Note. s.e. = standard error of estimate.

TABLE 3

Mediation effects of attendance on performance scores.

		Classwork	Unit exam	Final exam	Total course points
Front/Middle	Total effect	-0.22 [-7.4, 7.0]	-1.49 [-6.2, 3.0]	-0.75 [-5.4, 4.0]	-0.56 [-5.2, 4.0]
	Mediation effect	0.17 [-6.6, 7.0] (94.1%)	0.08 [-2.9, 3.0] (25.3%)	-0.06 [-2.4, 2.0] (15.0%)	0.02 [-3.5, 4.0] (60.3%)
	Direct effect	-0.39 [-2.1, 1.0]	-1.57 [-5.0, 2.0]	-0.69 [-4.6, 3.0]	-0.59 [-3.1, 2.0]
Front/Back	Total effect	-14.59* [-22.6, -7.0]	-8.49* [-13.3, -3.0]	-8.42* [-14.7, -3.0]	-8.04* [-12.8, -3.0]
	Mediation effect	-9.89* [-17.6, -2.0] (68.0%)	-4.32* [-8.1, -1.0] (51.4%)	-4.58* [-9.3, -1.0] (54.2%)	-5.23* [-9.6, -1.0] (64.4%)
	Direct effect	-4.70* [-6.8, -2.0]	-4.17* [-8.1, 0.0]	-3.84 [-8.2, 0.0]	-2.81* [-5.6, 0.0]
Middle/Back	Total effect	-14.29* [-21.8, -7.0]	-6.97* [-12.2, -2.0]	-7.67* [-14.0, -2.0]	-7.49* [-12.4, -3.0]
	Mediation effect	-10.27* [-17.6, -2.0] (71.8%)	-4.45* [-8.3, -1.0] (62.4%)	-4.64* [-9.7, -1.0] (60.3%)	-5.13* [-9.4, -1.0] (67.7%)
	Direct effect	-4.03* [-5.9, -2.0]	-2.52 [-6.3, 1.0]	-3.02 [-7.5, 1.0]	-2.36 [-5.5, 1.0]

Note. Estimated change due to moving seat location (Front/Middle = student moves from front to middle) measured by the percentage correct on each assessment (with 95% confidence intervals). *Total effect* is the observed effect of seating position on performance, *mediation effect* is the unobserved effect of attendance (percentage in parentheses), and *direct effect* is the actual effect of moving seating position once the mediating effect of attendance has been accounted for. *Denotes that the effect is significantly different from zero ($p < 0.05$)

TABLE 4

Distribution of student reasons for seat choice by themes.

Student response categories	Distribution of Student Responses Raw count (proportion within seat position, %)			
	Front (N = 240)	Middle (N = 183)	Back (N = 135)	Moved around (N = 22)
Social connections	30 (12.5)	40 (21.9)	10 (7.4)	3 (13.6)
Social avoidance	16 (6.7)	14 (7.7)	37 (27.4)	3 (13.6)
Pragmatic	15 (6.3)	31 (16.9)	28 (20.7)	5 (22.7)
Seeing and hearing lecture	76 (31.7)	39 (21.3)	24 (17.8)	5 (22.7)
Engaging with material	73 (30.4)	22 (12.0)	11 (8.1)	2 (9.1)
Routine	8 (3.3)	15 (8.2)	3 (2.2)	0 (0.0)
Professor avoidance	0 (0.0)	14 (7.7)	13 (9.6)	0 (0.0)
Classroom size	12 (5.0)	2 (1.1)	0 (0.0)	0 (0.0)
Vague/No answer	10 (4.2)	6 (3.3)	9 (6.7)	4 (18.2)