



# Assessing Student Mindset, Interest, Participation, and Rapport in the Post-Pandemic Public Speaking Classroom: Effects of Modality Change and Communication Growth Mindset

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**Abstract:** The COVID-19 pandemic created an exigency for educators to reevaluate their approaches to the classroom with one major dimension being course modality. This study uses the Instructional Beliefs Model to examine the impacts of course modality (i.e., hybrid versus face-to-face formats) and students' communication growth mindset on student engagement in the foundational public speaking course. Consistent with pre-COVID-19 findings, the results indicated that modality does not significantly impact student engagement, with one exception: higher cognitive interest scores were reported among students in the hybrid modality. Communication growth mindset associated positively with all student engagement variables examined: student interest–emotional, student interest–cognitive, participation, and class rapport. The findings offer tentative optimism about the promise of blended public speaking course modalities, and evidence for the necessity of mindset intervention to maximize student success.

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## Introduction

The adoption of virtual instruction affordances has been in motion for decades in U.S. higher education, but the onset of the COVID-19 pandemic created the need for an expedited mass transition to online learning (Clark & Jones, 2001; Vanhorn et al., 2008). Two years on, online and hybrid offerings of courses that were once taught F2F at U.S. universities persist (Pokhrel & Chhetri, 2021), presenting a need and opportunity for pedagogical renewal. Decades of research explored online versus F2F teaching within the collegiate setting (e.g., Soffer & Nachmias, 2018; Virtue, 2017). However, research prior to the pandemic cannot fully account for pandemic-era teaching challenges, such as shifting student motivation, inattention, and negative attitudes (Helvie-Mason, 2020; McDermott & Ashby-King, 2021; Schwartzman, 2020; Spradley & Spradley, 2021). Research is therefore needed that takes up shifting student views that shape how they enter the classroom, like mindset, while also attending to course modality. Further, there are specific instructional design limitations for courses abruptly forced online (and those that never returned), which are not accounted for in past study of courses intentionally constructed for online or hybrid delivery based on best practices. Resultingly, scholars have called for additional exploration that helps improve hybrid teaching practices—whereby some learning activities take place in the typical F2F setting with a smaller portion of the content delivered in a mediated format (Barker, 2015)—to ensure this mode can benefit students in these settings as well as F2F instruction (Carrillo & Flores, 2020; Mahmood, 2021). As universities nationwide respond to the new normal brought about by the pandemic, changes in our students, and the inherent challenges faced by faculty (Helvie-Mason, 2020), it is imperative to examine the impact of pedagogical changes on students and renew our understanding of F2F versus hybrid instruction.

With the demands of the pandemic, the foundational public speaking communication courses implemented variations of blended, F2F, and online structures. Changes in the public speaking courses need to be attended to as Hingle et al. (2021) noted that “oral communication skills are essential to undergraduate students’ academic success, sense of belonging at their university and employability after graduation” (p. 1, see also Morreale et al., 2016; Weismann et al., 2018). Considering that public speaking classes have implications for university retention (McKenna-Buchanan et al., 2020), fulfill general education requirements, and introduce students to the Communication field (Neff, 2013), it is crucial to examine these courses and the impact of shifting modality. Moreover, as COVID research has illustrated the impact of the changing college student (Meluch et al., 2022), we look to mindset to attend to student characteristics shaping the class.

We theoretically frame our study using the Instructional Beliefs Model (Weber et al., 2011). By examining several variables that have been linked to student engagement, including student interest (Mazer, 2013), participation (Frymier & Houser, 2016), and rapport (Frisby & Martin, 2010), in relation to different modalities (hybrid versus F2F) and mindset, we can determine what aspects of the post-COVID classroom are making the most impact. In the next sections, we review the major tenets of the Instructional Beliefs Model; the literature on learning modalities; (communication) mindset; and student engagement variables of interest, participation, and rapport.

## Review of Literature

### Instructional Beliefs Model

The Instructional Beliefs Model (IBM) is founded on traditional instructional communication concepts and offers a clear, linear framework for explaining what leads to student learning outcomes within the classroom (Weber et al., 2011). The IBM posits that teacher behaviors (e.g., relevance, clarity, nonverbal immediacy), classroom contextual issues (e.g., classroom justice, modality), and student characteristics (e.g., communication apprehension) together predict student instructional beliefs, such as how one should engage in the classroom. Instructional beliefs serve as the mediating variable between the first-order variables listed previously and ultimate student learning outcomes within the classroom (Weber et al., 2011).

Previous research has demonstrated that the IBM provides a holistic view of student learning (Frisby & Housley Gaffney, 2015; Goldman & Martin, 2014). Scholars have supported the use of IBM research in online learning and have provided suggestions to revise the IBM for future theoretical development (Kaufmann et al., 2016; Wombacher et al., 2017). Kaufmann et al. go as far as to argue for the collapsing of instructor behaviors and classroom contextual issues when examining the online classroom, suggesting a further need to examine how the IBM functions within different learning modalities.

To do so, the present study examines the components derived from Weber et al.'s (2011) initial theoretical framework but focuses on classroom contextual issues, modality, as well as student characteristics as we work to renew our understanding of student outcomes. As instructors nationwide continue to navigate the changing classroom environment resulting from the COVID-19 pandemic, it is imperative to determine whether the existing framework of IBM is still upheld in adapted approaches to teaching and learning, such as hybrid classrooms.

### Examining Learning Modalities

The online classroom and its presumed effectiveness have become a focus of research in instructional communication (Broeckelman-Post et al., 2019; Kaufmann et al., 2016; Vanhorn et al., 2008). Yet, scholars still “presume face-to-face as the yardstick” for evaluations of effectiveness (Schwartzman, 2020, p. 513), thus, creating a standard in which the “other” of online classes is used only as a factor of comparison (Broeckelman-Post & Pyle, 2017; Tichavsky et al., 2015). This assumption is complicated, however, by the increasingly complex configuration of learning modalities incorporated into collegiate classrooms, such as F2F, HyFlex, BlendFlex, blended, and hybrid (Miller et al., 2020). The present study compares the fully F2F modality to the *hybrid* classroom—an instructional approach where most of the time is spent in a traditional classroom, lab, or other physical setting, and the rest of the time is spent participating in computer-mediated learning (Barker, 2015). The hybrid public speaking classroom has been examined previously (Broeckelman-Post & Pyle, 2017; Broeckelman-Post et al., 2020), yet little work has been produced since the onset of the pandemic.

Broeckelman-Post et al. (2020) identified differences depending on modality among second-order variables from IBM (student engagement, attendance), yet no differences among instructional beliefs (self-reported competency) or student outcomes (exam grades and course performance). Their findings depart slightly from other scholarship that noted no differences in learning between the online public speaking course and the F2F public speaking classroom (Broeckelman-Post & Pyle, 2017; Nortvig et

al., 2018). Beyond the public speaking course, research has parsed the nuanced differences between modalities with Goke et al. (2021) finding that student opinions about course modality impact their motivation, mindset, and learning outcomes.

These findings provide a basis for further investigation into modality differences. This line of research escalates in importance given that students recently reported a preference for asynchronous and synchronous classes (Brophy et al., 2021). In addition, Kirschner (2021) called for further research that can guide teachers toward a new, post-pandemic pedagogy for the increasingly high-tech affordances of the higher education classroom. As modality can impact learning in complex ways, it is imperative to understand how this may appear in the context of the public speaking course post pandemic.

## Mindset

As scholars have observed the shifting attitudes and engagement of our students post-COVID (McDermott & Ashby-King, 2021; Schwartzman, 2020; Spradley & Spradley, 2021), additional scrutiny is needed of first order student characteristics that may account for some of these shifts, such as *mindset*. Emerging from the field of psychology (Dweck et al., 1995), mindset is conceived as a personal attribute influencing how individuals evaluate and make sense of the events occurring in the world around them (Yeager & Dweck, 2012). Specifically, mindset refers to whether traits are viewed as either innate (i.e., fixed mindset) or adaptable (i.e., growth mindset) (Dweck et al., 1995). Individuals endorsing fixed mindsets perceive skills, such as mathematic proficiency or communication competence, as intrinsic traits or abilities, whereas those holding growth mindsets believe that these capacities can be cultivated (Dweck, 2006). Mindset has been found to robustly impact students' learning, as it influences how they set their educational goals and enact behaviors to achieve them (Burnette et al., 2013). Bowman and Levtov (2020) argued that students with a growth mindset are more resilient, seeking out greater challenges and approaching them as learning opportunities. In contrast, those students endorsing a fixed mindset interpret academic challenges as (demotivating) evidence of their own lack of ability. Mindset research has extended beyond academic performance to speak to issues of social skill and personality (Yeager & Dweck, 2012), suggesting the relevance of mindset in a multitude of areas and setting the foundation for modifying assessment of mindset to specific contexts. Yeager and Dweck further argue that mindset is most salient in academic stressful situations, which Nordin (2021) suggests includes the introductory communication course with its public performances.

Given the established connection between mindset and instructional and student outcomes, Nordin and Broeckelman-Post (2019) first adapted mindset for study of communication-specific learning, developing the Communication Mindset scale. *Communication mindset* refers to one's view of the malleability of their own communication and public speaking skills. Nordin and Broeckelman-Post (2019) differentiated between mindset and efficacy: efficacy refers to a student's perceived extant capacity, whereas mindset deals with the perceived possibility of change. This difference is important, because although students entering a communication classroom exhibit variability in existing communication skills, according to mindset theory, those who believe they have the possibility for change at the start of the term likely approach the course differently. Though mindset at large has been established as an important construct, attending to communication mindset in the foundational course allows researchers to focus on key course outcomes. However, Nordin and Broeckelman-Post (2020) noted that the public speaking course does not serve as an intervention for mindset, finding no changes in mindset over the semester, thus reinforcing the view of mindset as a trait variable. Understanding mindset as more trait-like, we can then envision it as part of the IBM as a student characteristic.

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Some communication scholars have examined mindset in instructional communication research (Elkins, 2016; Stewart et al., 2017), yet this construct has not been fully utilized. Researchers found that mindset is associated with higher speech grades, higher interpersonal communication competence, lower public speaking anxiety, increased student engagement (Nordin & Broeckelman-Post, 2019), and higher self-perceived competence in the foundational communication course (Stewart et al., 2017).

To better understand the impact of mindset, we further examine its relationship with student engagement. Nordin and Broeckelman-Post (2019) utilized Reeve's (2013) framework of engagement to establish mindset's clear impact on the variable. Through this lens, engagement includes four subdimensions: emotional engagement (e.g., student interest–emotional), cognitive engagement (e.g., student interest–cognitive), behavioral engagement (e.g., participation), and agentic engagement, where students contribute “transactionally and dialectically” (Reeves, 2013, p. 580, likely shown in increased relational outcomes like rapport). To explicate nuanced effects of mindset on sub components of student engagement, we examine four dimensions corresponding to those suggested by Reeves (2013): student interest–emotional, student interest–cognitive, participation, and rapport.

## Student Interest

Student interest has been examined in educational scholarship for over a century (Dewey, 1916; Mazer, 2012). In contrast, communication research has only turned its attention toward this variable within the last few decades. Mazer (2012) argued that student interest is situational, “triggered in the moment by certain conditions (e.g., textual material or teacher behavior) in the environment” and, therefore, tends to be common across all individuals experiencing that same condition (p. 101). Additionally, there are two types of student interest: emotional—which “builds when the addition of interesting but irrelevant material to a lesson energizes students so that they learn more”—and cognitive—which “builds when clarity indicators such as explanative summaries influence students’ cognition” (p. 102). The impact of student interest on their learning has been linked to increased motivation in the classroom (Bolkan & Griffin, 2018) and positive student outcomes (Frisby, Weber, & Beckner, 2014). Both findings uphold the relationships between student characteristics, instructional beliefs, and student learning identified in the IBM within the F2F classroom, making it a strong variable to examine when testing the IBM.

Instructional communication scholarship has examined the impact of key variables on student interest (Mazer, 2017; Weber, 2003). Mazer (2013) found that both teacher immediacy and clarity impact student interest, with immediacy having more impact on emotional interest and clarity holding more on cognitive interest. In this same study, Mazer determined a positive relationship between student interest and engagement which is replicated and expanded upon by Frisby, Weber, & Beckner (2014) who noted student participation increases with student interest. However, in the same way that positive teacher behaviors aid in student interest, teacher misbehaviors can decrease student interest in the classroom (Broeckelman-Post et al., 2016). Though a depth of research exists on teacher traits and interest, scholars have not offered the same depth in exploring classroom contextual issues. Notably, across all these studies, no instructional communication work has attempted to determine whether these relationships between other variables and student interest hold true in teaching environments besides F2F learning. While some research in the field of education has found student interest to remain high in classes that have remained online since the start of the COVID-19 pandemic (Jia et al., 2021), recent research does not look at the nuanced relationship between interest and other variables that are seen in previous research.

## Participation

With students less engaged after the pandemic, a return to research necessitates further exploration of participation. Participation is central to the interaction between students and teachers. Fassinger (1995) defined student participation as any utterance from a student during class. However, Dancer and Kamvounias (2005) expanded upon Fassinger's definition of participation by including five additional components: preparation, group skills, discussion contribution, communication skills, and attendance. As the definition of student participation has evolved, instructional communication research has increasingly noted the clear link between student participation and increased learning outcomes (Frisby, Weber, & Beckner, 2014; Frymier & Houser, 2016; Rocca, 2010). As Blankenstein et al. (2011) highlighted, the mere act of verbally discussing course content leads to greater recall of the material.

However, a variety of factors have been found to impact the amount of student participation in the classroom. Rocca (2010) outlined various mitigating factors, several of which function as components of the IBM including logistics, instructor behaviors (teacher behaviors), classroom climate (classroom contextual issues), personality traits, and communication apprehension (student characteristics). Apprehension alone has been found to negatively influence the links between participation, engagement, and motivation (Frymier & Houser, 2016). Despite this, instructor behaviors, such as rapport and immediacy, can lessen the impact of apprehension on student participation (Frisby, Berger, et al., 2014; Goodboy & Myers, 2008). In this way, student participation functions as a variable affected by both student and instructor qualities and behaviors. Significant to the present study, however, is Sherblom et al.'s (2013) determination that in addition to these influences, instructional modality can impact student behavior whereby a student's knowledge of the medium of instruction determines their likelihood of participation. Additionally, others have noted that modality impacts participation as students are afforded more control (Ahlin, 2021). Since F2F classes were often the norm in higher education prior to COVID-19, students may feel more comfortable participating within this context. Yet, as online and blended instruction becomes more normalized (Brophy et al., 2021), it becomes increasingly important that we investigate whether participation is impacted by modality, a classroom contextual issue undergirded by IBM or if other first-order variables account for these differences.

## Rapport

Rapport is frequently defined as a mutual, trusting, and prosocial bond between two or more people (Catt et al., 2007; Faranda & Clarke, 2004; Frisby & Martin, 2010). The concept of rapport has often been examined in conjunction with classroom studies, student-teacher interactions, and student-student interactions. Sidelinger et al. (2015) found that perceived rapport between students and their instructor in the public speaking classroom have significant positive implications for students enrolled in the foundational course. This is because teachers and students often form a distinctively interpersonal bond, with students delivering speeches on topics that are personally relevant. Due to this bond, a positive sense of rapport can positively impact the interpersonal relationships within the classroom. In previous studies, students have self-reported that rapport is a vital characteristic for an effective instructor (Catt et al., 2007; Faranda & Clarke, 2004). Further, building rapport in the classroom has been linked to greater participation and less participation anxiety (Frisby, Berger, et al., 2014), important in performance-based classrooms.

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Student–student rapport simultaneously influences the classroom learning environment. In their study on online classes, Kaufmann and Vallade (2020) found that student–student rapport and connectedness are more likely to reduce feelings of loneliness than interactions with the instructor. Additionally, Frisby and Martin (2010) found that both instructor–student and student–student rapport were positively associated with student participation and perception of a connected classroom.

While extant literature confirms the importance of promoting rapport in the classroom, some gaps in the current research still exist. For example, Frisby and Martin (2010) noted that some students are more prone to perceive rapport with their instructors than others: “students who are motivated to communicate with instructors for relational reasons are likely to build, and subsequently perceive more positive rapport with their instructors” (p. 159). This research indicates a potential relationship between student variables, such as motivation, communication apprehension, interest, or mindset, that serve to mitigate the impact of rapport. Further, much previous research has focused on rapport established directly within the traditional F2F classroom. While scholars have begun to explore rapport through online modalities (Frisby et al., 2013; Kaufmann & Vallade, 2020), additional research should focus on the impacts of rapport in more online, blended, and hybrid classes. This becomes even more complicated considering the ever-changing norms for teacher–student interactions as well as classroom format created by the ongoing pandemic. Online classes, physical distancing, face coverings/limited nonverbals, and so forth, may all impact the ways students perceive rapport.

## Summary

The onset of COVID-19 has produced major implications for higher ed teaching and learning (Schwartzman, 2020). As is evidenced through our discussions of each variable, from interest to rapport, their corresponding relationships may be complicated by dimensions of modality as well as the lasting impacts of COVID-19 on both students and collegiate instruction, challenging our previous assumptions. While pre-pandemic research found few differences among instructional modalities (Broeckelman-Post & Pyle, 2017; Broeckelman-Post et al., 2019; Broeckelman-Post et al., 2020; Nortvig et al., 2018), we argue that the changing landscape of higher education, additional strains on college students, and new complexities in instructional delivery requires renewed study. As instructors redefine education based on what we learned during the pandemic, research must continue to examine these decisions to ensure our students receive the best chance for positive outcomes. These outcomes start first with understanding how our students enter educational settings and student engagement variables. Our focus on modality already positions our study in alignment with one of the first-order variables within the IBM, classroom contextual issues. Recognizing that recent research has established the changing circumstances of college students and the impact of communication mindset, we also examine the first-order variable: student characteristics, specifically communication mindset as it can shape student instructional beliefs. Considering previous work has tested the fit of the IBM using two of the three variables (Frisby, Weber, & Beckner, 2014), our attention toward modality, mindset, and student engagement variables may allow us to expand our understanding of the applicability of the IBM in the shifting context of higher education. To investigate these concepts, we ask the following research questions:

**RQ1:** Does student engagement in the foundational communication course—as measured by reported student interest (cognitive and emotional dimensions), participation, and rapport—differ according to course modality (i.e., F2F versus hybrid)?

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**RQ2:** Is student engagement in the foundational communication course—as measured by reported student interest (cognitive and emotional dimensions), participation, and rapport—predicted by students’ communication growth mindset at the start of the course term?

## Methods

### Participants and Procedure

Participants were undergraduate students enrolled in the Introduction to Public Speaking course (F2F or hybrid delivery) at a mid-sized public university in the Midwestern United States. To recruit subjects, the first author visited and announced the study purpose during in-person large lecture sections of the F2F class. For the hybrid section of the course, recruitment scripts and the study purpose were shared via Canvas, the institution’s learning management system, and instructors played a video of the recruitment announcement in their lab breakout sections. After reading or providing the recruitment scripts, IRB-approved FERPA consent forms were distributed for voluntary participation to students. Students were awarded nominal extra credit for their participation, one of the many opportunities for extra credit available in the course.

Participants completed data for this study at three time points during the academic term. Communication mindset was measured as part of a standard slate of pre-term assessments, conducted during the first 2 weeks of the academic semester. Only students who completed and submitted the study consent form had their data included in this study.

To study the students’ engagement in the public speaking course, participants completed surveys during approximately Week 5 and approximately Week 10 of the 16-week academic semester. These measures included Student Interest, Class Participation, and the Modified Rapport measure, along with other measures as part of a larger project. There were no significant differences between participants’ scores in these latter two waves of data collection, therefore scores were averaged to create composite dependent variables.

An initial panel of  $N = 425$  students consented to share their pre-term data for the study and completed the Week 5 wave of data collection. Two-hundred eighty-six participants were retained between Week 5 and Week 10 data collection waves (32.7% attrition rate). An additional 35 responses were omitted from main analyses due to incomplete data, resulting in a final sample of  $N = 251$ .

Participants ranged in age from 18 to 29 years old ( $M = 18.78$ ,  $SD = 1.30$ ). Of those who indicated their sex, 173 reported female (68.9%), 72 reported male (28.7%), 2 reported nonbinary, and 1 reported transgender. For ethnicity, participants could enter multiple options, and 80.1% ( $N = 201$ ) reported being White, 4.0% ( $N = 10$ ) Black or African American, 4.0% ( $N = 10$ ) Hispanic or Latino/a, 4.4% ( $N = 11$ ) Asian or Asian American, 4.4% ( $N = 11$ ) biracial or mixed race, less than 1% ( $N = 1$ ) Native American or Indigenous, and 2.0% ( $N = 5$ ) reported as other. Sixty-one participants identified as first-generation college students (24.3%). Students reported class standings as First-year students ( $N = 176$ ), Sophomores ( $N = 46$ ), Juniors ( $N = 22$ ), and Seniors ( $N = 4$ ). Additionally, 77 participants held jobs while in school (30.7%), and 21 students were involved in care labor (e.g., childcare, parental care work, etc.; 8.4%).

## Measures

### **Communication Mindset**

Communication mindset was measured using Nordin and Broeckelman-Post's (2019) Communication Mindset scale, a modified version of Dweck's (2000) Implicit Theories of Intelligence scale. The instrument contains eight items (e.g., "No matter how strong your communication skills are, you can always change them quite a bit") measured on a 5-point Likert scale (1 = *Strongly Disagree*; 5 = *Strongly Agree*). Higher scores indicate greater endorsement of a growth mindset. This scale previously demonstrated strong reliability, with alpha coefficients equaling .91 (Nordin & Broeckelman-Post, 2019). In this study, the communication mindset measure ( $M = 3.82$ ,  $SD = 0.68$ ) exhibited a Cronbach's alpha reliability coefficient of 0.92.

### **Student Interest (Cognitive and Emotional)**

Student interest was measured using Mazer's (2012) Student Interest scale, which contains 16 items measured on a 5-point Likert scale (1 = *Strongly Disagree*; 5 = *Strongly Agree*). Seven items assess participants' cognitive interest, or whether participants could understand and recall course material (e.g., "the information covered in the course is making me more knowledgeable"). Nine items pertained to participants' emotional interest, or whether students were engaged by course content (e.g., "The topics covered in this course fascinate me"). Prior reliability estimates indicated alpha coefficients of .97 for emotional interest and .91 for cognitive interest (Mazer, 2012). In this study, we found Cronbach's alpha of .85 for the cognitive interest dimension ( $M = 3.97$ ,  $SD = 0.46$ ) and .92 for the emotional interest dimension ( $M = 3.12$ ,  $SD = 0.65$ ).

### **Classroom Participation**

A modified version of Fassinger's (1995) Classroom Participation scale was used to measure students' self-reported class participation. Five items (e.g., "I contribute to the class discussion"; "I ask questions in class") were measured on a 5-point Likert scale (1 = *Never*; 5 = *Often/Always*). The original measurement has previously displayed strong reliability, with a Cronbach's alpha of 0.84 (Fassinger, 1995). In this study, class participation ( $M = 2.59$ ,  $SD = 0.92$ ) obtained Cronbach's alpha of .90.

### **Modified Rapport**

Frisby and Martin's (2010) Modified Rapport measure contains 11 items (e.g., "I strongly care about my instructor(s)/classmates"; "I have a close relationship with my instructor(s)/classmates") measured on a 5-point Likert scale (1 = *Strongly Disagree*; 5 = *Strongly Agree*). Frisby and Martin established reliability for the modified measure with a Cronbach's alpha of .94. Modified Rapport ( $M = 3.50$ ,  $SD = 0.64$ ) demonstrated a Cronbach's alpha coefficient of .92 in this study.

## Results

Research Question 1 asked whether student engagement in the communication foundational course would differ by course modality, and Research Question 2 asked whether student engagement could be predicted by students' communication growth mindset at the start of the course term. Research Questions 1 and 2 were examined via a series of Analyses of Covariance (ANCOVA), models, each with course modality (i.e., F2F, Hybrid) as a fixed factor, communication growth mindset as a continuous predictor, and four student engagement variables (i.e., student interest–cognitive, student interest–emotional,

participation, and rapport) as dependent variables in the respective models. Table 1 includes the summary of significant and nonsignificant effects for all models.

**TABLE 1**  
**Effects of Course Modality and Communication Mindset on Student Engagement (N = 244)**

Measure	Course Modality						Communication Growth Mindset			
	F2F		Hybrid		F(1, 241)	Partial $\eta^2$	B	SE B	t	Partial $\eta^2$
	M	SD	M	SD						
Student Interest										
Cognitive	3.94	0.45	4.11	0.48	5.05*	.02	.16	.04	3.70*	.06
Emotional	3.08	0.64	3.27	0.70	2.96	.01	.18	.06	3.00*	.04
Participation	2.55	0.91	2.70	0.99	0.71	.003	.33	.09	3.90**	.06
Class Rapport	3.49	0.64	3.57	0.66	0.44	.002	.23	.06	3.93**	.06

\* $p < .05$ ; \*\* $p < .01$

In response to RQ1, course modality exerted a statistically significant effect on only one student engagement dimension: the cognitive dimension of student engagement. No statistically significant differences across course modality conditions for student interest–emotional, participation, or rapport.

In response to RQ2, communication growth mindset associated positively with each of the four students' engagement variables. Greater endorsement of communication growth mindset early in the academic term predicted higher scores on both emotional and cognitive dimensions of student interest, reported student participation, and perceptions of class rapport.

## Discussion

In the aftermath of the COVID-19 lockdown, as educators and students return to our classrooms, communication instructors have the opportunity and obligation to assess instructional design adaptations implemented during the rapid shift online, so that we might mindfully and intentionally renew our teaching approach to the foundational communication course. Among these changes was experimenting with diverse modalities for our classroom. Grounded in the Instructional Beliefs Model (IBM; Weber et al., 2011), which asserts that teacher behaviors, classroom context, and student characteristics operate in concert to produce student outcomes via students' instructional beliefs; this study had dual objectives. The first was to examine the impact of a classroom context variable (i.e., course delivery modality) on students' interest, participation, and evaluations of classroom rapport. The second objective was to examine how communication mindset, as a student characteristic, shapes these same student engagement outcomes.

In response to our first research question, we found only one statistically significant effect of course modality on student engagement, within the domain of student cognitive interest. We found no significant differences in student scores on their self-reports of student interest–emotional, participation, or class rapport. In the largest part, this analysis supports Broeckelman-Post and Pyle's (2017) findings that public speaking courses delivered across a variety of modalities confer relatively equal benefits in terms of classroom climate, a measure of students' comfort in the classroom linked with engagement (Wei et al., 2019). It also echoes Nortvig et al.'s (2018) finding of little difference in classroom outcomes between

F2F instruction and hybrid/blended learning environments, bearing similarities in self-report measures in more recent work (Broeckelman-Post et al., 2020).

The one effect exerted by modality in our study was a difference in cognitive student interest, which was higher in the hybrid sections of the course than in the F2F section. One explanation for this finding derives from the fact that the cognitive dimension of student interest pertains to students' ability to remember and assimilate course material. It may be that the students in the hybrid sections felt more secure in their retention because they had access to the course videos and could return to the lecture portion as needed. These findings echo the work of Ahlin (2021) who noted that hybrid delivery allows for more student-led learning with self-paced participation accommodating individual needs.

Overall, the findings for RQ1 provide some reassurance for those instructors unexpectedly utilizing a more technologically mediated modality that student emotional interest, participation, and perceptions of rapport were likely not impacted by these changes as students can still retain some interaction with faculty members. However, this finding should be acknowledged with the caveat that larger withdrawal rate from online sections may selectively remove those students who performed poorly in this format (Broeckelman-Post et al., 2019). Additionally, these results should also be considered in light of Goke et al. (2021) who noted that students' opinions about modality might shape their responses, as students in this study had the option to select into their format of the course when they registered.

Turning to the second research question, we observed that adopting a communication growth mindset positively predicted student interest (emotional and cognitive), participation, and rapport in the public speaking classroom. It makes logical sense that a student who expects they can improve their communication competence would exhibit more participation and interest in the content in order to realize gains. Students may also be more receptive to rapport- or relationship-building among instructors and students to the extent they feel agentic in improving their skills. This finding both further supports Mahoney's (2009) research which noted that mindset has a bearing on student perceptions of and performance within an online course and extends his findings by specifically testing communication mindset and by looking at modalities beyond the fully online classroom. Our data also align with Nordin and Broeckelman-Post's (2019) research finding that mindset is associated with increased student engagement—with the added benefit that our measure of mindset was collected in a pre-term assessment (first 2 weeks of class), instead of a post-term assessment as was done in prior work, providing initial evidence of causation among these variable relationships.

## Theoretical and Practical Implications

This study is helpful in moving instructional communication theory and research forward. As we explored the classroom contextual issue of modality in concert with the student characteristic of mindset, it appears that at times some of these predictor variables have more impact than others, as mindset accounted for differences in students' interactions in and perceptions of the classroom. Though this study by necessity explores just a few of the components of the model (like Frisby, Weber, & Beckner, 2014), we argue that this provides continued warrant for utilizing the IBM in the future. In particular, we see value in theorizing interconnections *among* the course, teacher, and student elements of the IBM. To start, we believe that certain student characteristics (communication mindset among them) may be productively modeled as both exogenous and endogenous variables. Communication mindset is a stable trait, but potentially mutable by strategic classroom intervention (Nordin & Broeckelman-Post, 2020). Students may be convinced, for example, by particular teaching practices, to adopt a growth mindset

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with regard to their communication skill. In such case, the IBM could be re-articulated as recursive, allowing for fluidity in student characteristics in response to teacher behaviors (such as communication mindset priming), and course contextual variables (such as the availability of stable course assets like recorded lectures).

This study also provides support for more nuanced parsing of engagement variables in studying the effects of modality and mindset on student learning. Our findings support Nordin and Broeckelman-Post's (2019) mindset measure as a useful tool in understanding how students enter our classrooms in research and instructional assessment—this project extends their work by also connecting mindset to interest, participation, and rapport, and making room for discussions of causality. Because we observed an effect of modality on just *one* aspect of engagement (i.e., cognitive student interest), we recommend disaggregating the engagement construct into subdimensions or types of engagement.

Additionally, this project confers implications for instructional communication practices for instructors and course directors alike. First, the significant impact of modality on student cognitive interest suggests that student learning might benefit if students have the ability to view course content “on demand” as opposed to during a single, time delimited lecture meeting. We recommend applying this insight in hybrid courses and beyond. Instructors, even in F2F classes, should work to add more course content to their course management systems, be it classroom lecture recordings, student notetakers, or making slides available. Having the opportunity to return to content helps raise student cognitive interest which is linked to positive student outcomes (Frisby, Weber, & Beckner, 2014) and aligns with best practices for universal and accessible design. Course administrators could look further into the possibility of a hybrid modality as a benefit for accessibility as this is not having negative implications on key markers of student engagement and we also see an increase in cognitive student interest, which could be linked to the accessibility of material or the ability to return quickly to specific lecture content. Second, this research supports the need for course administrators and instructors alike to address issues of communication mindset in the course early on by including assessment measures of communication mindset into course preterm assessment. Knowing this information would allow faculty to add more strategic language to their syllabus, speech evaluations, and course content that cultivates a growth-based mindset, and the adaptations to be evaluated for effectiveness. Third, Williams (2020) noted a growth in faculty motivation after learning about mindset; therefore, course directors and department chairs should include more professional development opportunities on mindset at the start of the academic term. Finally, though Nordin and Broeckelman-Post (2020) noted the public speaking course did not inherently function as an intervention for mindset, with strategic planning, intervention techniques could be implemented. Instructors might explore such techniques such as strategically developing micro messages in communication (Kyte et al., 2020), instilling relational goals, increased classroom interactions, mentoring by senior students, and properly tailored praise messages (Williams, 2020).

## Limitations and Directions for Future Research

Certain methodological choices contextualize the interpretation of these findings. First, data for this project were collected during the first academic term in which classes returned to “normal” at the institution under study. Having the opportunity to be fully back on campus might have increased students’ positive perceptions of the classroom. Another limitation was that a portion of participants (32.7%) only completed the first wave of data collection. This could have been a result of burnout, disinterest, or might overlap with those who Broeckelman-Post et al. (2019) found dropping online classes, thus causing us to miss the experiences of students who might be at elevated risk of not completing.

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Study limitations, coupled with our renewed understanding of the ways that student interests are impacted by modality and mindset, offer multiple possibilities for future research. Researchers should continue to evaluate the modality shifts that are happening in our post-COVID-19 classrooms to see how the changes might further impact student perceptions of their learning, actual classroom outcomes, and evaluations of their instructors. Finally, after developing assessments for future mindset interventions, researchers should continue to test the effectiveness of these interventions and the links between mindset and other variables like resilience (Frisby & Vallade, 2021).

## Conclusion

Considering the number of classroom adjustments COVID-19 has created, now is a time for renewed examination of course design in our programs. Previous research has established the functionality of online and hybrid classroom formats, but with the shifting nature of both the college classroom and our campus communities, examining the accompanying changes is a priority. This project confirms that course modality does not have a significant impact on students' participation, interest, or perceptions of rapport in the foundational communication course classroom. However, student communication mindset has significant implications for student engagement outcomes. Instructors and course directors must continue to develop interventions for communication mindset to foster student engagement so that students can succeed in the classroom regardless of the method of course delivery.

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