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| Tips and Tools

"They helped me through the semester": electronic instructor messages can foster the instructor-student relationship

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ABSTRACT Building rapport between instructors and students is a challenge, especially in large classes and in online environments. Previous work has shown that non-content Instructor Talk can foster positive student-teacher relationships, but less is known about non-content talk in electronic instructor messages. Here, we used the established Instructor Talk framework to craft positively phrased electronic messages that were sent through the course's learning management system to students enrolled in an introductory biology course at a large public institution. We examined both close- and open-ended survey responses (n = 226) to assess students' perceptions of the electronic messages, the course, and their instructor. Of the established Instructor Talk categories, the building student/instructor relationship category was most memorable to students. Encouragingly, 61% of students indicated they "liked the course more" and 88% indicated they "liked the instructor more" in response to the electronic messages. This demonstrates that implementing positively phrased Instructor Talk into electronic communication is an effective way to build rapport between instructors and students.

KEYWORDS Instructor Talk, instructor immediacy, electronic messages

The role of instructors extends beyond delivering content. We all use language not directly related to course content, or Instructor Talk, to establish the classroom learning environment (1–3). Instructor Talk refers to the non-content-related spoken language used by educators to engage and interact with students. While the role of in-person Instructor Talk has been studied previously (1–4), its use in electronic communication has not been explored. Here, we describe the use of electronic Instructor Talk in a high-enrollment introductory biology course. We first summarize the known benefits of Instructor Talk, then describe how we incorporated electronic Instructor Talk and highlight how students perceived the messages. We conclude with suggestions for instructors about incorporating electronic Instructor Talk into their courses.

Theoretical frameworks: Instructor Talk and Instructor Immediacy

Instructor Talk is widespread, having been found in every college biology classroom studied to date (2, 4). The Instructor Talk framework has identified categories of both positively and negatively phrased Instructor Talk used in college biology classrooms (1, 2). Positive Instructor Talk is posited to have multiple effects, including minimizing student resistance to active learning, overcoming stereotype threat, and building relationships between instructors and students (3). Instructor Talk may support student success at least partially through perceptions of instructor care, as previous studies suggest that positive perceptions of instructor care are associated with persistence in STEM [for a review, see reference (5)].

Instructor Immediacy, or instructor behaviors that affect students' perceptions of the social and emotional distance between themselves and their instructor, is a framework used to study the instructor/student relationship (6, 7). Instructors can increase their

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immediacy with verbal cues such as using students' names, providing constructive feedback, and disclosing personal details (6). Evidence suggests that building instructor immediacy promotes student success through its effects on affective learning (6). Language that promotes instructor immediacy can be connected to multiple Instructor Talk categories (1), and previous work has suggested that positive Instructor Talk may promote student learning by increasing instructor immediacy (3).

PROCEDURE

Development and implementation of electronic Instructor Talk messages

This study was approved by the participating university's Institutional Review Board (#80432). There are no associated safety concerns.

We crafted electronic messages using the established Positive Instructor Talk framework and deployed them in a large-enrollment (300 students) Introductory Biology I course at a large public university in the southeastern United States. The course was taught by a white woman with over 10 years of experience in the course. In the classroom, the instructor used a variety of positive Instructor Talk and behaviors previously shown to increase perceptions of instructor immediacy (6).

Select examples of messages and their alignment with the Positive Instructor Talk framework (2) can be found in Table 1. The full set of messages can be found in Supplemental Material. Most messages were sent near major course events, such as exams and the release of midterm grades. Messages were either sent as announcements on the course's learning management system or as personal emails based on broad categories of exam performance.

Students report positive reactions to electronic messages

We developed a survey instrument (Supplemental Material) to understand how electronic messages containing positive Instructor Talk affected student perceptions of their course and instructor. Of the survey respondents who shared their demographic

TABLE 1 Examples of electronic Instructor Talk

Instructor Talk framework		Instructor message
Category	Subcategory	
Building student/instructor relationship	Demonstrating respect for students	"Course policies for the semester will allow for maximum flexibility as we learn together. I hope that these policies will give you the freedom to learn in the way that works best for you."
	Boosting self-efficacy	"I know that this course material can be challenging, but there's still a lot of time to demonstrate your learning and growth in the course. Fortunately, there are still opportunities to improve your overall grade before the end of the semester!"
	Revealing secrets to success	"It can be a challenge to know what to expect on exams (we expect you to be able to apply information from class), but the practice questions are great clues—they can show you how you will be asked to apply information on exams."
Establishing classroom culture	Building biology community among students	"It can also be useful to work together with your classmates on practice questions because they may be able to put concepts into words that you understand better!"
	Indicating that it is okay to be wrong or disagree	"Science is about trial and error (and trying again), which is why there are so many practice questions available."
Explaining pedagogical choices	Discussing how people learn	"About 10 years ago, there was a very influential paper published that showed that 'a highly structured course design, based on daily and weekly practice with problem-solving and data analysis… improved the performance of all students in a college-level introductory biology class.'"
	Supporting learning through teaching choices	"We've set this course up in a way that allows you to learn from mistakes and demonstrate your growth. This is why we do what we do in this course—to help you be as successful as possible!"
Sharing personal experiences	Relating to student experiences	"I know that there will be some folks who will not be happy with their score. It's a common experience in college courses (I got a 40% on an organic chemistry exam in college!), but I know it still doesn't feel great."
Unmasking science	Fostering wonder in science	"We get to chat about the evolution of eukaryotes in class—should be fun! We'll also introduce Unit 2, which is all about my favorite molecule—DNA!"

information, 54% were first-year students and 46% were sophomores, juniors, or seniors. Participants self-identified as 74% women, 24% men, and 2% non-binary (0% transgender or other genders). Eighteen percent of participants self-reported belonging to an underrepresented and racially minoritized group [Black or African American, Hispanic/Latino, or Indigenous (8)]; 82% of respondents were white. Of the 226 students who responded to the survey (75% response rate), 73% said that the electronic messages were at least as impactful as the in-person Instructor Talk in the same course (Fig. 1). Importantly, 62% of respondents said that they had a more favorable perception of the course because of the electronic messages. An overwhelming majority (88%) indicated that they "liked the instructor more" as a result of the electronic messages. No significant differences were found between demographic groups (race/ethnicity, and self-identified gender), suggesting that these student identities were not associated with differences in message perception (data not shown).

Student responses to open-ended questions about which messages were the most memorable varied, but many students focused on the uplifting tone and the reminders that their grades did not define them. For example, one student explained that "when she would announce about our exam scores being out, she always told us to not find our worth in our grade." Another stated that "[the instructor] referred to her students as biologists, which I took as something positive. She also says things like 'I know you can do it'." Semi-personalized messages were often memorable, regardless of student performance on exams. One student said that "one of the most memorable positive messages that I received was right after midterms. The message indicated how well I was doing in the class and to keep up the hard work." Another student explained that "whenever I did not do as well on my first exam as I would have liked, I received a message that was very reassuring and allowed me to do way better on my second exam without having to be so stressed about the first." Other students made more general comments about the importance of the messages. In reference to the electronic

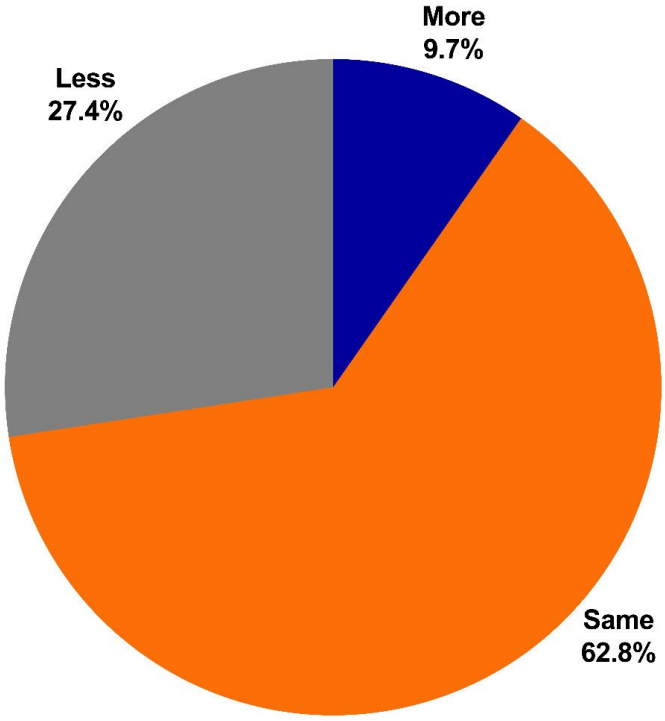

FIG 1 Student perceptions of the impact of theelectronic Instructor Talk compared to in-class Instructor Talk. Percentage of students that viewed the electronic Instructor Talk as having more impact (blue) than, the same impact (orange) as, and less impact (gray) than in-class Instructor Talk in the same course (n = 226).

announcements, one student said, "I really enjoyed them, and they helped me through the semester mentally. I looked forward to them." Another said, "it's nice to see a more human side of your professor." In alignment with previous work on in-person Instructor Talk (3), the most memorable messages were those aligned with the building student/instructor relationship category (over 75% of responses compared with ~60% of coded messages). Coding methodology and frequencies of coded responses are included in Supplemental Material.

CONCLUSION

A positive teacher-student relationship is a powerful catalyst for academic success. When students feel valued and respected, they are more likely to develop confidence in their abilities and take ownership of their learning (6). As educators, we must recognize the power of our words and the impact they have on student engagement, motivation, and development. Instructor Talk plays a pivotal role in creating effective learning environments (1–4). Here, we show that positively phrased electronic messages are memorable to students. While instructors may not often think about their electronic communications, our results suggest that instructors should be intentional about incorporating positive messaging in their electronic communications. Incorporating a few phrases of Instructor Talk in electronic messages can be relatively easy to implement. By establishing approachability and enthusiasm through our electronic communications, we can foster perceptions of instructor care, creating a more inclusive atmosphere.

Here, the instructor's race and gender matched that of the majority of students in the course. It would be interesting to determine if the effects seen here vary based on instructor gender/race or at different types of institutions. Further research on electronic Instructor Talk could focus specifically on perceptions of instructor immediacy based on electronic messaging. Since previous studies have found that student resistance to active learning and stereotype threat can impact the learning environment (9–11), future work could examine the effect of intentional electronic messaging on these factors.

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ADDITIONAL FILES

The following material is available online.

Supplemental Material

Supplemental material (jmbe00004-24-s0001.docx). Supplemental figures, tables, and methods

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