



Impact of Emergency Remote Instruction on Student Perspectives of a Collaborative Learning Model



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Background

- Team-Based Learning (TBL) is an evidence-based teaching strategy that promotes student learning²
- The course studied used a slightly different collaborative learning model (CLM) inspired by TBL
- 1. Pre-lecture preparation
- 2. Individual readiness assessment
- 3. Announce agenda
- 4. 2+ instructors presenting and asking questions
- 5. Team-based activities
- 6. Summary and student questions
- 7. Team readiness assessment
- COVID-19 pandemic caused classrooms to unexpectedly shift to Emergency Remote Instruction (ERI)¹
- Unknown how ERI would impact student perspectives of the CLM

Research Questions

- How were student perspectives of this CLM impacted by the transition to ERI during the COVID-19 pandemic?

Research Design

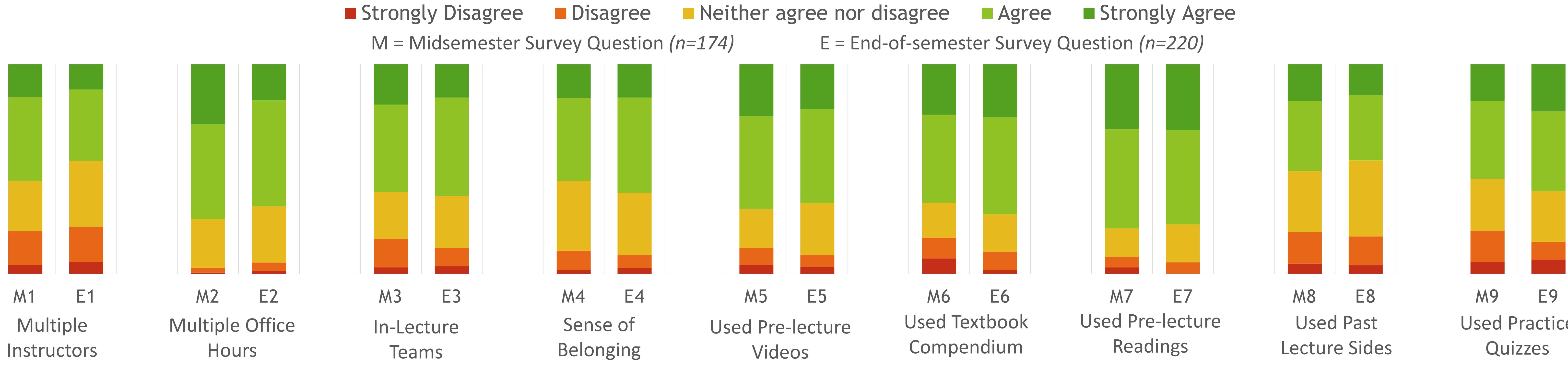
- **Study Context**
 - Researched at a large enrollment, introductory biology course at a midsize, minority-serving institution
- **Data Collection and Analysis**
 - Students surveyed at mid- and end-of-semester (10 questions on 5-point Likert scale from strongly disagree to strongly agree)
 - Students explained ratings (categorized into themes using inductive content analysis)
 - Changes in relative frequencies of answer choices represented with graphs and charts

Recommendations for Instructors

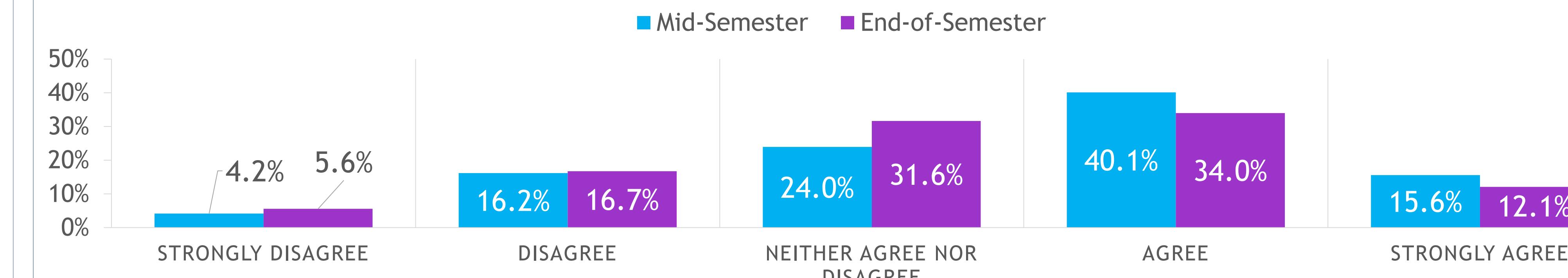
- Scaffold team activities to help students become more comfortable with each other and encourage peer participation
- Multiple instructors have many positives (helping out more students and offering more viewpoints) but also some negatives (students feeling like one dominates), so pre-planning lectures is helpful to account for this
- Incentivize students to go to office hours with extra credit
- STEM instructors can consider implementing this CLM (or TBL and its variations) to promote active learning, both remotely and in-person

Results

OVERALL COMPARISON OF THE FREQUENCY OF STUDENT RESPONSES BETWEEN MID- AND END-OF-SEMESTER SURVEYS



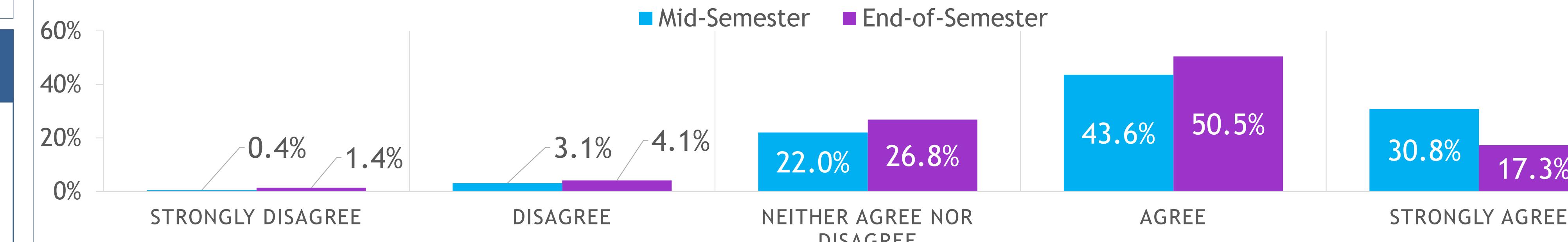
MULTIPLE INSTRUCTORS IN CLASS HELPED LESS DURING ERI



STUDENT PERSPECTIVES

- Multiple Instructors**
 - More teaching styles and explanations (M, E)
 - Different viewpoints (M, E)
 - Different styles can be confusing (M, E)
 - Only one spoke at a time (M)
 - Didn't affect learning (E)

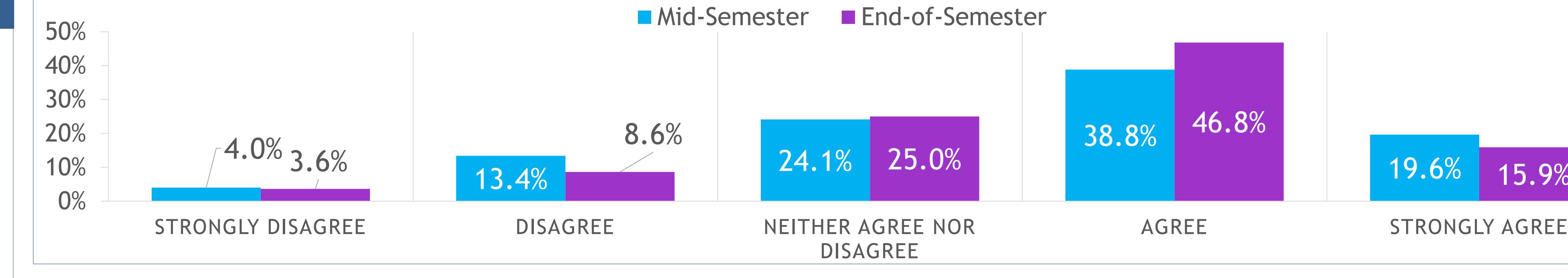
STUDENTS CHANGED FROM STRONGLY AGREE TO AGREE FOR THEIR LIKELIHOOD OF ATTENDING ADDITIONAL OFFICE HOURS DURING ERI



Multiple Office Hours

- Multiple Office Hours**
 - Reduces scheduling problems (M, E)
 - More 1-on-1 help (M, E)
 - Only attend if extra help needed (M)
 - Does not attend, more options make no difference (E)

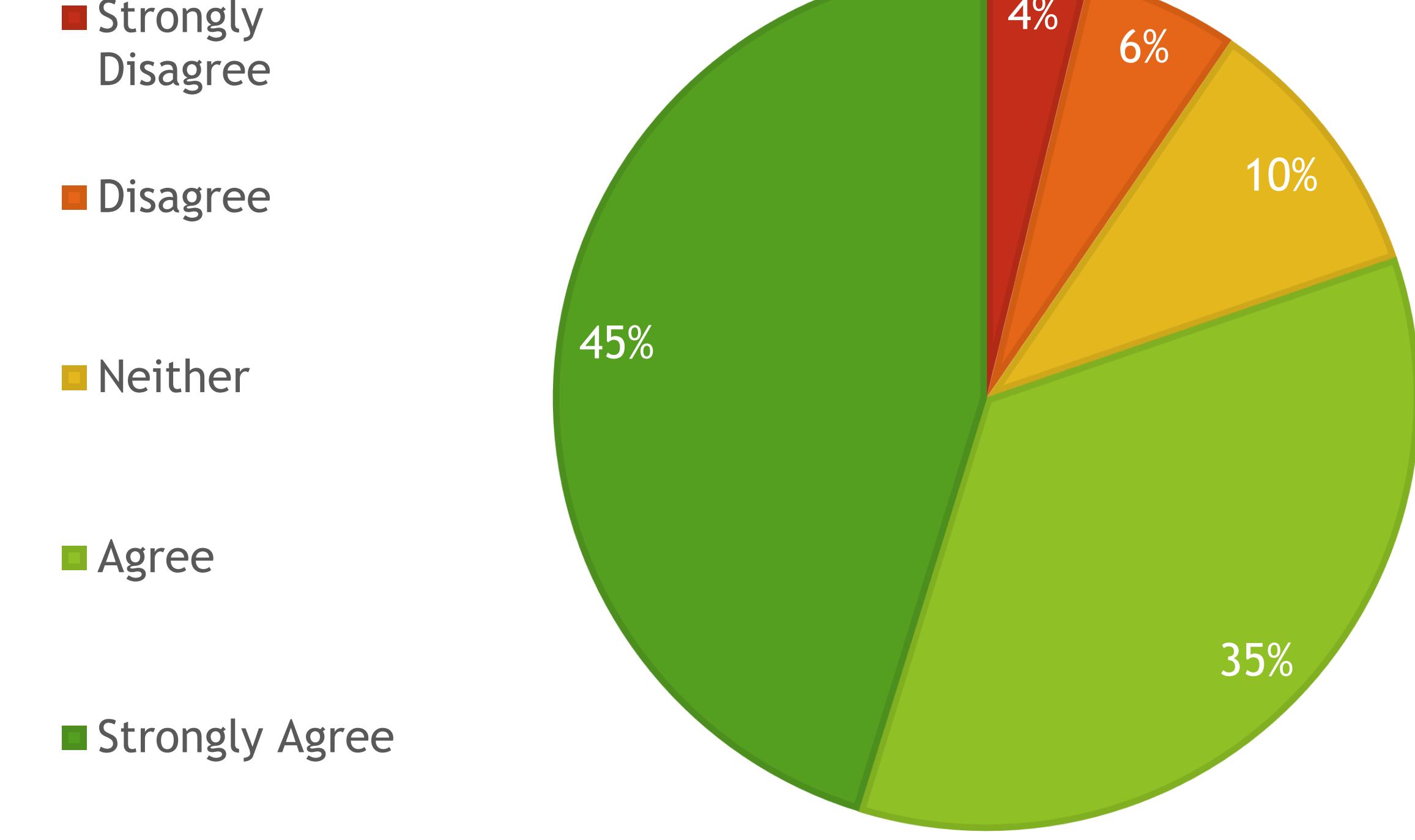
IN-LECTURE STUDENT TEAMS ENCOURAGED PARTICIPATION WHEN ALL MEMBERS ACTIVELY CONTRIBUTED



In-Lecture Teams

- In-Lecture Teams**
 - Sharing ideas makes it easier to learn material (M, E)
 - Helps participation (M)
 - Peer's points of views expands learning (E)
 - Decreases productivity when not everyone participates (M, E)
 - Didn't help individual participation (M, E)

REMOTE INSTRUCTION IMPACTED MY LEARNING EXPERIENCE IN THIS COURSE



Student Perspectives on Remote Instruction

- Hard to focus at home** - can be loud or distracting
- In-class lecture helps me learn better
- I can't achieve the same **level of understanding** doing online learning
- Lack of motivation**
- Technical issues with zoom/internet issues
- Had **other responsibilities** to worry about at home and less time to study
- Hard to collaborate when everyone is muted and unresponsive

Supplemental Material



Original survey questions and data tables:
<https://docs.google.com/document/d/1IDWCdTpmd0ZR95H6x09j1F9kKgxg5ObiKNPbym2W8/edit?usp=sharing>

References

- Hedges, C., Moore, S., Locke, B., Trust, T., & Bond, A. (2020). The Difference Between Emergency Remote Teaching and Online Learning. *Educate Review*, 27.
- Michaelsen, L. K., Davidson, N., & Major, C. H. (2014). Team-based learning practices and principles in comparison with cooperative learning and problem-based learning. *Journal on Excellence in College Teaching*, 25(3&4), 57-27.

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