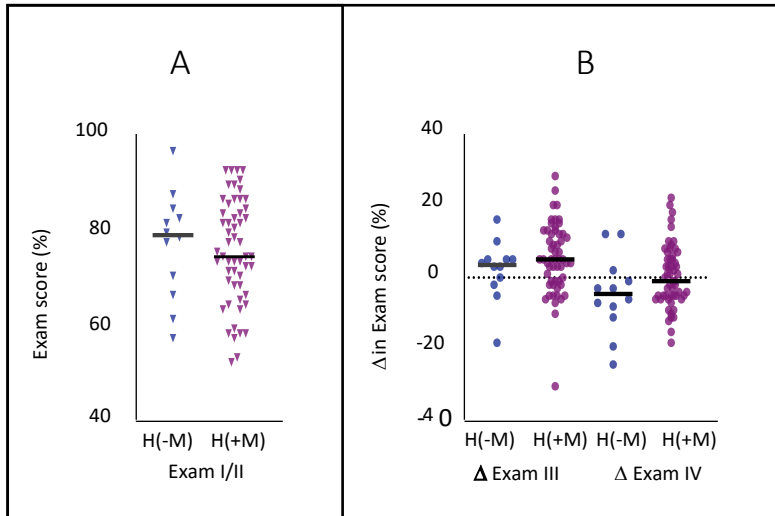


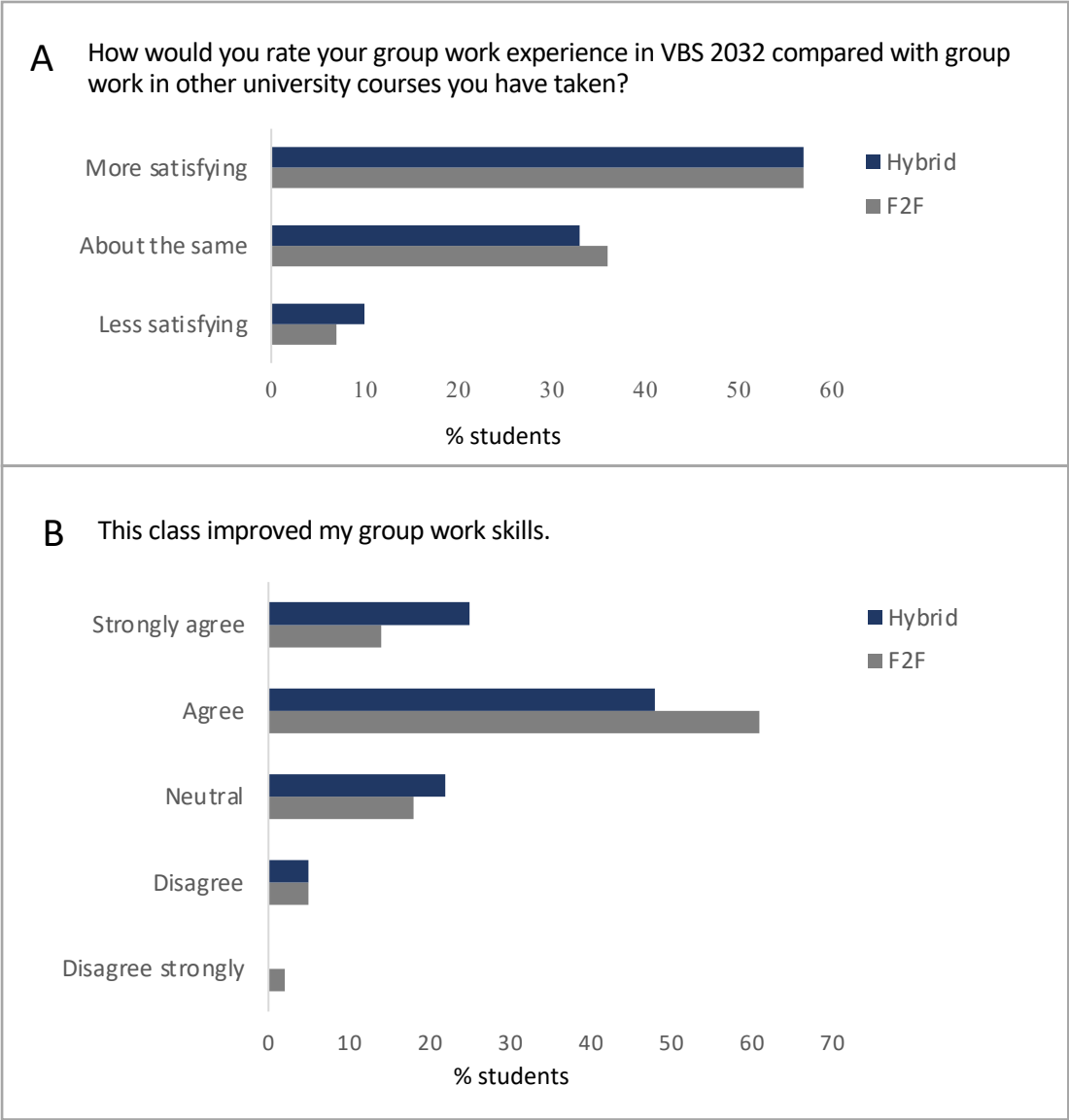
Supplemental Material

CBE—Life Sciences Education

Foster-Hartnett *et al.*



Supplemental Figure 1. Student exam scores (hybrid section) before and after a metacognition exercise. A: Average Exam I/II scores for students who did not complete the exercise (blue triangle) and those who did (purple triangle). B: Increase or decrease in Exam III or IV over average Exam I/II score for students who did not complete the exercise (blue circle) and those who did (purple circle).



Supplemental Figure 2. Student responses to a 2020 end-of-semester voluntary anonymous survey. Questions were administered on the course management system (Canvas); students who completed the survey were allowed to drop an additional quiz score.

Supplemental Table 1. Course components of face-to-face and hybrid sections

	2019 F2F	2019 H	2020 F2F	2020 H
Lecture:				
In-person lecture (M, W)	X		X	
In-person student participation questions	X		X	
Online lecture (F)	X	X	X	X
Online lecture (M, W)		X		X
Online quizzes (formative)	X	X	X	X
Learning guides	X	X	X	X
Laboratory:				
In-person (2X/week)	X	X	X	X
Assessments:				
In-lab quizzes	X	X	X	X
In-person exams	X	X	X	X
Group laboratory reports	X	X	X	X
Group presentation	X	X	X	X
Case studies	X	X	X	X
Online discussions				X

Supplemental Table 2. End-of-semester survey questions used in 2020.

Before you enrolled in VBS 2032, which format for this class did you prefer?

All in-person lectures, in-person lab (not offered)

A mixture of in-person and online lectures, in-person lab (section 001)

Online lectures, in-person lab (section 004)

Were you able to enroll in the section format you preferred?

Yes

No

If you were not able to enroll in the section format you preferred, what was the reason?

Section not offered

Section was full

Section did not fit into my schedule

Other

How many credits are you taking this semester?

≤12

13-14

15-16

17-18

>18

How many hours/week did you spend working, volunteering or caring for family members before COVID-19 changes?

≤5

6-10

11-15

16-20

>20

How many hours/week do you spend working, volunteering or caring for family members after the COVID-19 changes?

5

6-10

11-15

16-20

>20

Before this semester began, how many university-level science courses had you taken?

2

3

4

5

≥6

Supplemental Table 2 (Cont.)

Before this semester, how many online courses had you taken?

- 1-2
- 3-4
- 5-6
- ≥7

On average, when did you complete the Learning Guides?

- Within a day of each lecture
- Within a week of each lecture
- Within two weeks of each lecture
- Only before exams

How many of the optional materials did you read or watch?

- Almost all
- Almost all
- A few
- None

This class improved my time management skills.

- Strongly agree
- Agree
- Neutral
- Neutral
- Strongly disagree

This class improved my group work skills.

- Strongly agree
- Agree
- Neutral
- Disagree
- Disagree strongly

How would you rate your group work experience in VBS 2032 compared with group work in other university courses you have taken?

- More satisfying
 - About the same
 - Less satisfying
-

Supplemental Table 3. 2020 CATME Pre-shutdown peer evaluations

CATME Peer Evaluations	F2F mean	H mean
<u>Task Conflict</u>		
1. How much conflict of ideas is there in your work group?	1.3	1.3
2. How frequently do you have disagreements within your work group about the task of the project you are working on?	1.2	1.2
3. How often do people in your work group have conflicting opinions about the project you are working on?	1.4	1.4
<u>Relationship Conflict</u>		
4. How much relationship tension is there in your work group?	1.1	1.1
5. How often do people get angry while working in your group?	1.0	1.0
6. How much emotional conflict is there in your work group?	1.0	1.2
<u>Process Conflict</u>		
7. How often are there disagreements about who should do what in your work group?	1.2	1.1
8. How much conflict is there in your group about task responsibilities?	1.0	1.1
9. How often do you disagree about resource allocation in your work group?	1.1	1.1
<u>Psychological Safety</u>		
10. Members of this team are able to bring up problems and tough issues.	5.9	5.7
11. It is safe to take a risk on this team.	5.5	5.4
12. No one on this team would deliberately act in a way that undermines my efforts.	6.4	6.4
13. Working with members of this team, my unique skills and talents are valued and utilized	6.0	6.1
14. If you make a mistake on this team, it is often held against you. <i>[scale reversed]</i>	1.3	1.5
15. People on this team sometimes reject others for being different. <i>[scale reversed]</i>	1.2	1.2
16. It is difficult to ask other members of this team for help. <i>[scale reversed]</i>	1.4	1.6