

Enhancing Knowledge Retention
and Understanding in
Matriculation Biology :

BBB bio brain bonanza

WITH MR PO

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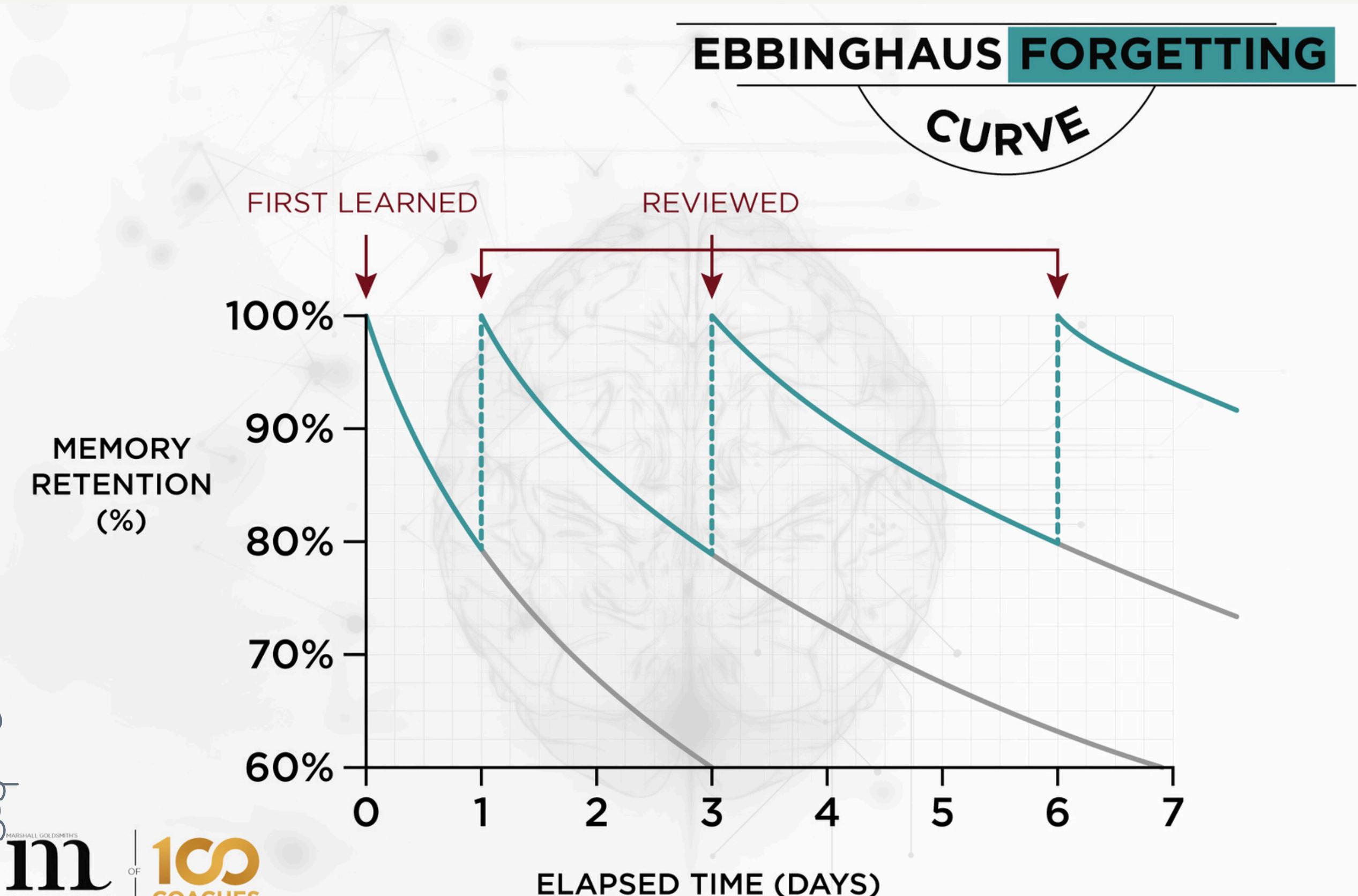
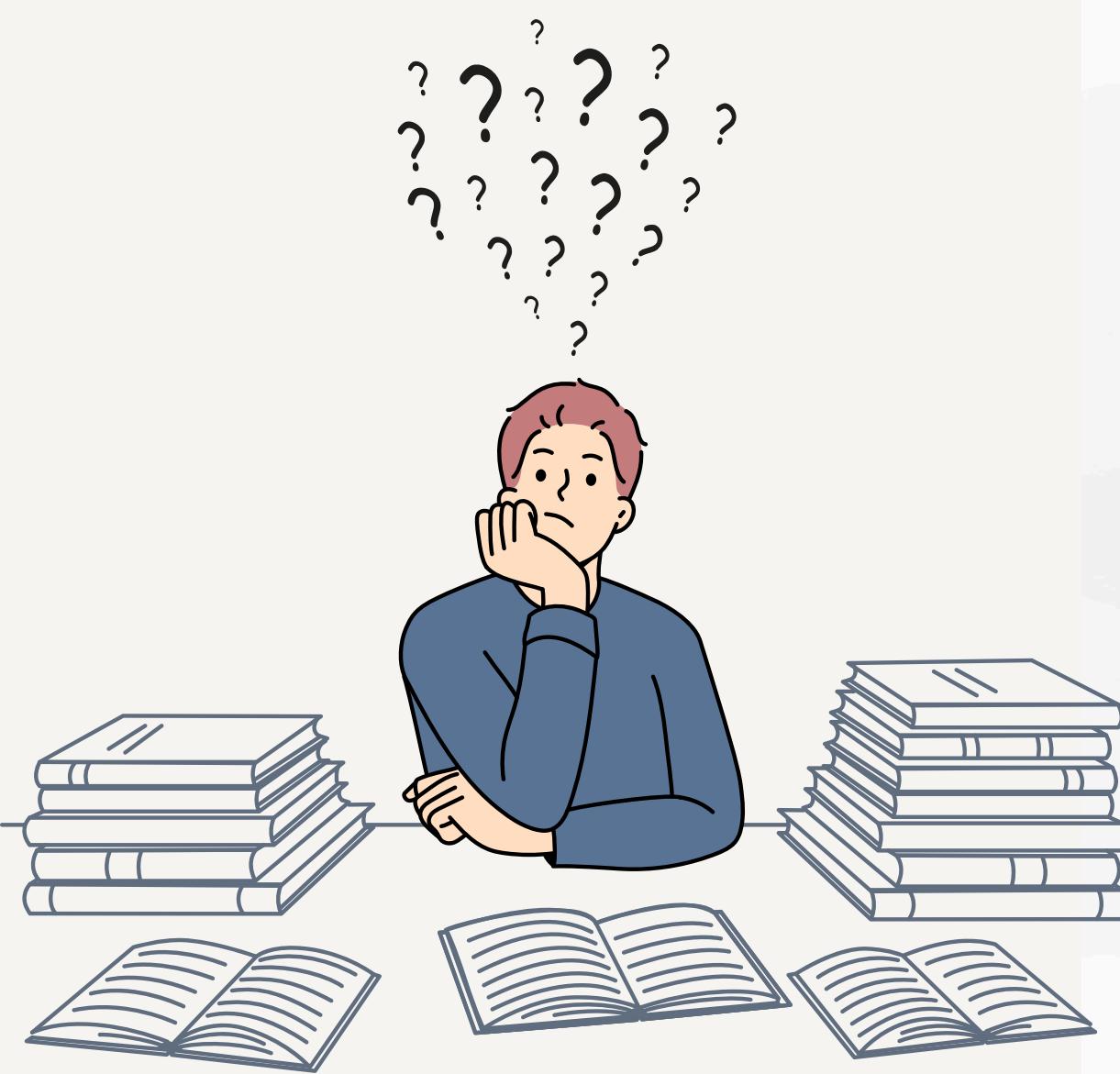
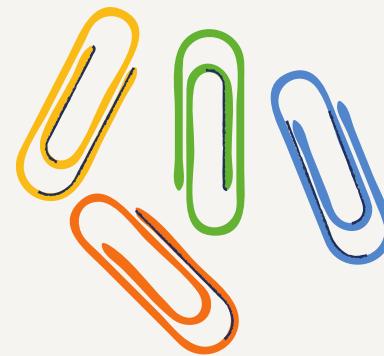


INTRODUCTION



- The Bio Brains Bonanza (BBB) programme tackles knowledge retention challenges in Matriculation Biology.
- Designed based on the forgetting curve, which shows how quickly students forget learned material.
- Key focus: Peer-to-peer learning, interleaved practice, and daily collaborative exercises.
- Goal: Enhance long-term retention and deepen understanding of complex biology concepts.

FORGETTING CURVE



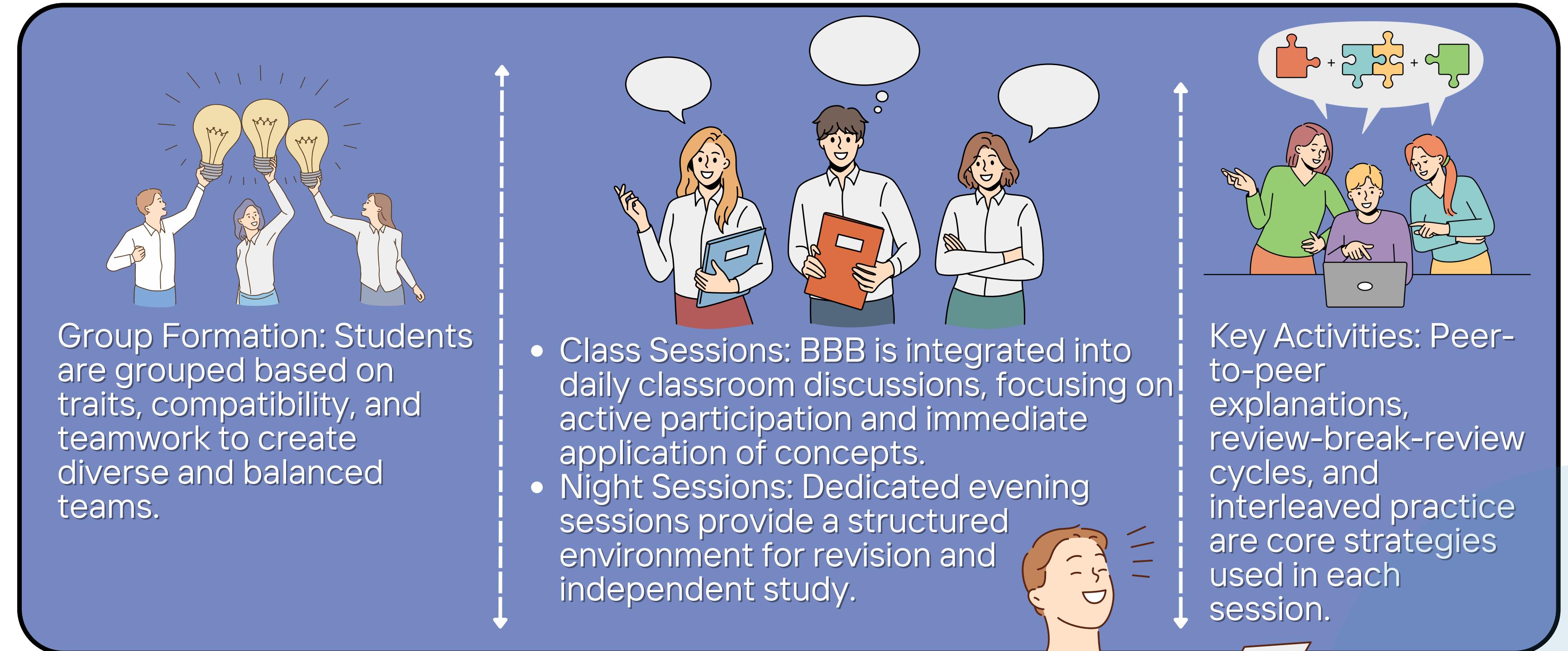
RESEARCH PROBLEM



Students often forget biological concepts due to the forgetting curve.

Students do not have support system to help them to recall and revise.

Need for a structured programme to improve retention, engagement, and understanding.



IMPLEMENTATION



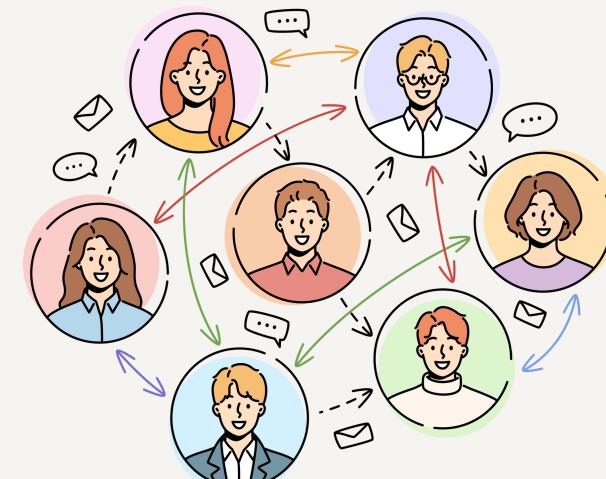
STRATEGIES



Peer-to-Peer Explanation: Students explain concepts to one another, reinforcing their understanding and addressing knowledge gaps.



Review, Break, and Review Again: Regular review sessions help students revisit and consolidate their learning.



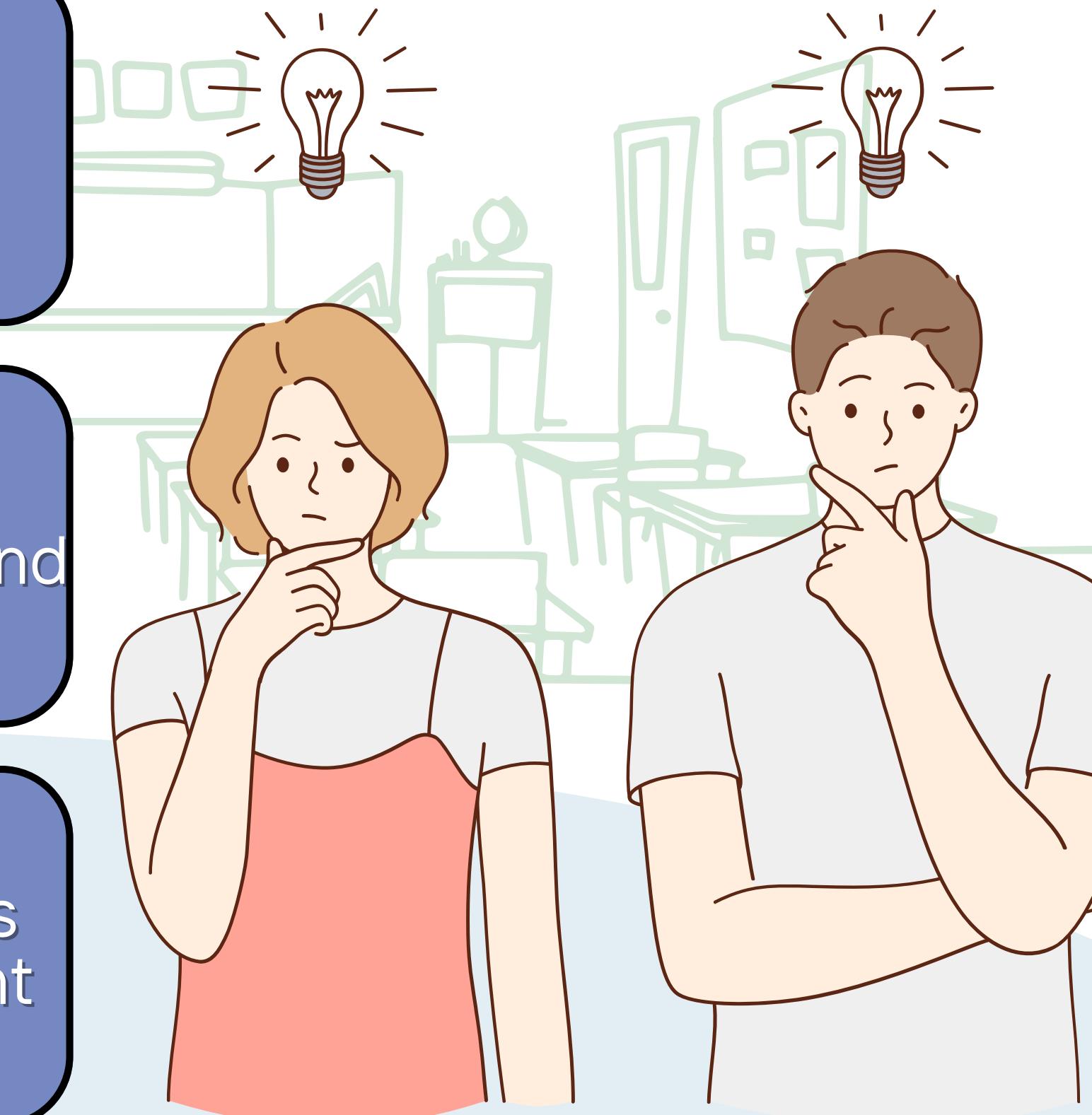
Interleaving: Mixing different topics during discussions promotes deeper understanding and cognitive flexibility.

RESEARCH OBJECTIVES

To evaluate the impact of the Bio Brains Bonanza (BBB) programme on students' knowledge retention and understanding of biological concepts in Matriculation Biology.

To explore students' perceptions of the programme, including its structure, strategies, and effectiveness in enhancing engagement and academic performance.

To identify the benefits and challenges of BBB implementation and provide recommendations for improving the programme based on student feedback.

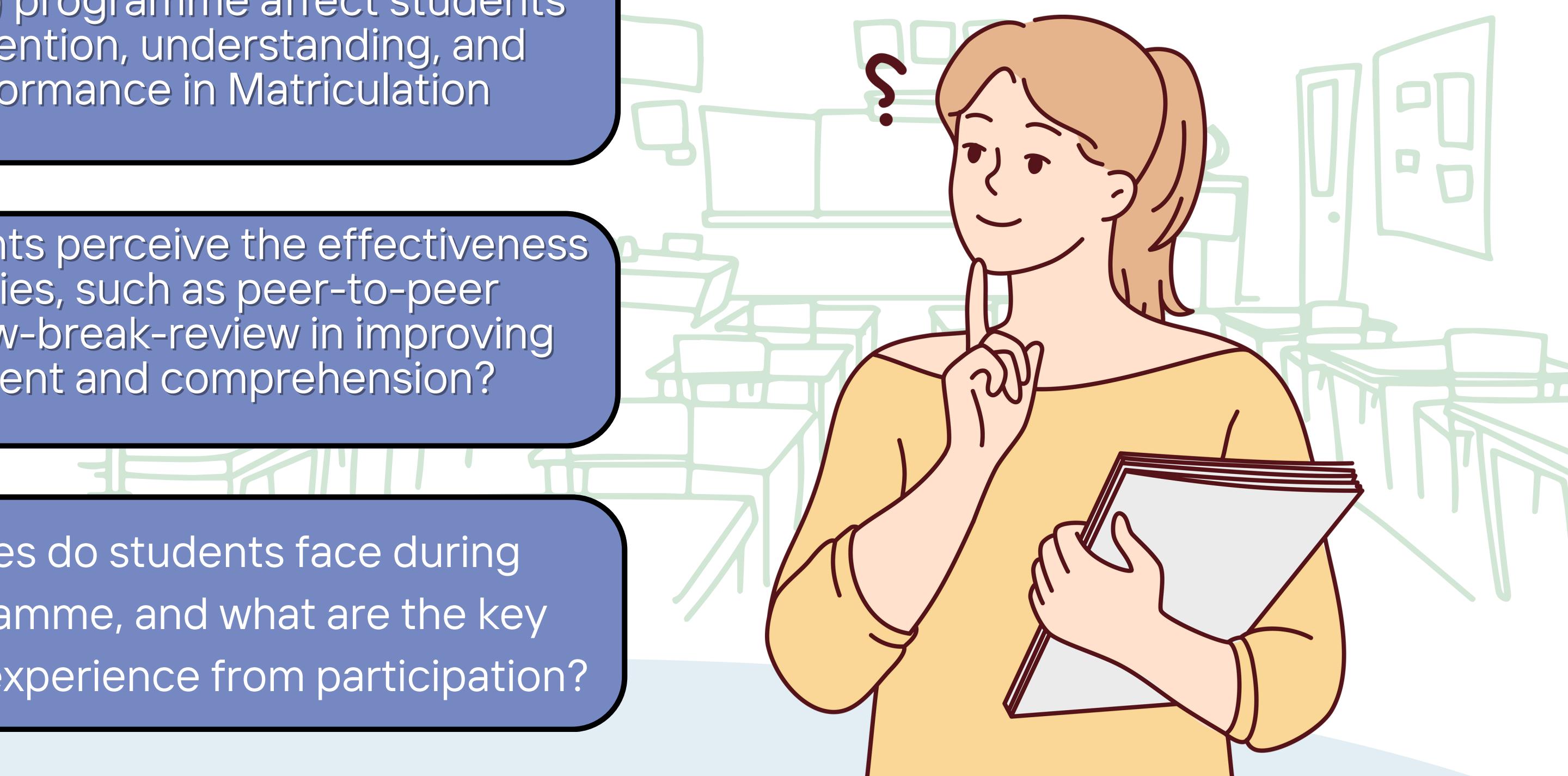


RESEARCH QUESTIONS

How does participation in the Bio Brains Bonanza (BBB) programme affect students' knowledge retention, understanding, and academic performance in Matriculation Biology

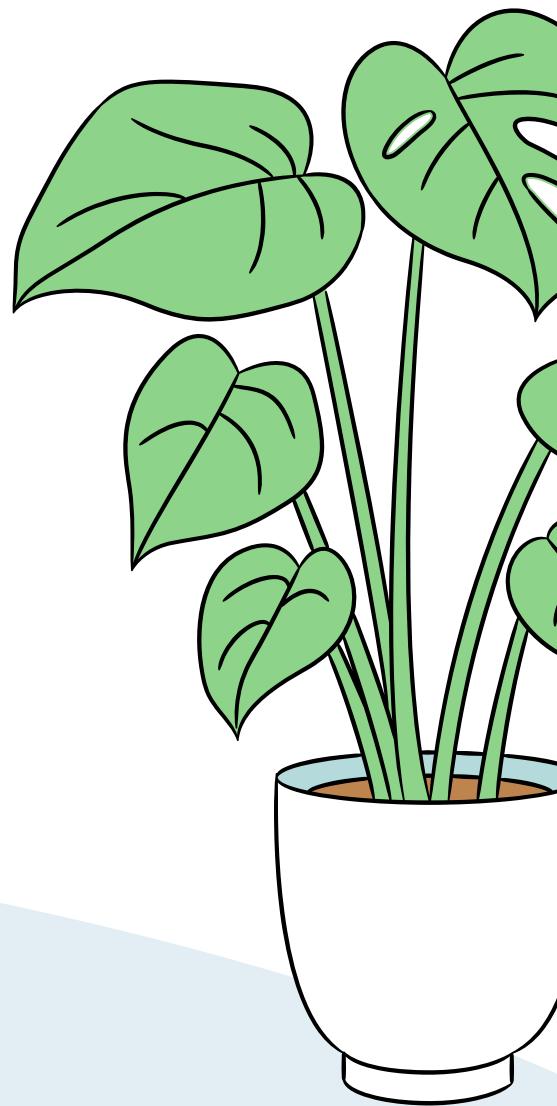
How do students perceive the effectiveness of BBB strategies, such as peer-to-peer learning, review-break-review in improving their engagement and comprehension?

What challenges do students face during the BBB programme, and what are the key benefits they experience from participation?



METHODOLOGY

- Participants: 32 K2 2023/2024 Matriculation Biology students.
- Data Collection:
 - Closed-ended surveys.
 - Academic performance comparisons.
- Analysis: Quantitative evaluation of survey results and test scores



PRELIMINARY FINDINGS



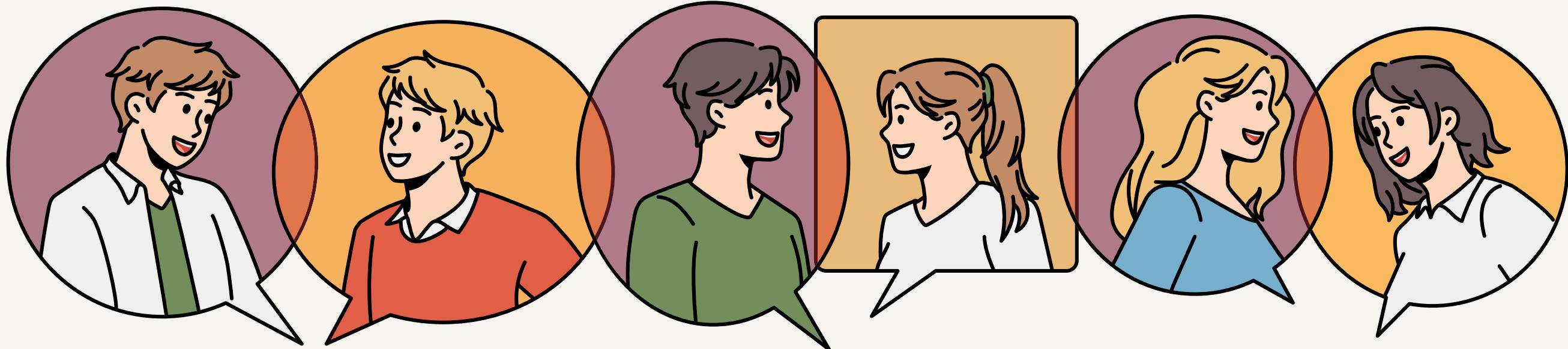
Positive Impacts:

- Improved knowledge retention.
- Enhanced understanding of complex topics.
- Increased student engagement and confidence.

Challenges Identified:

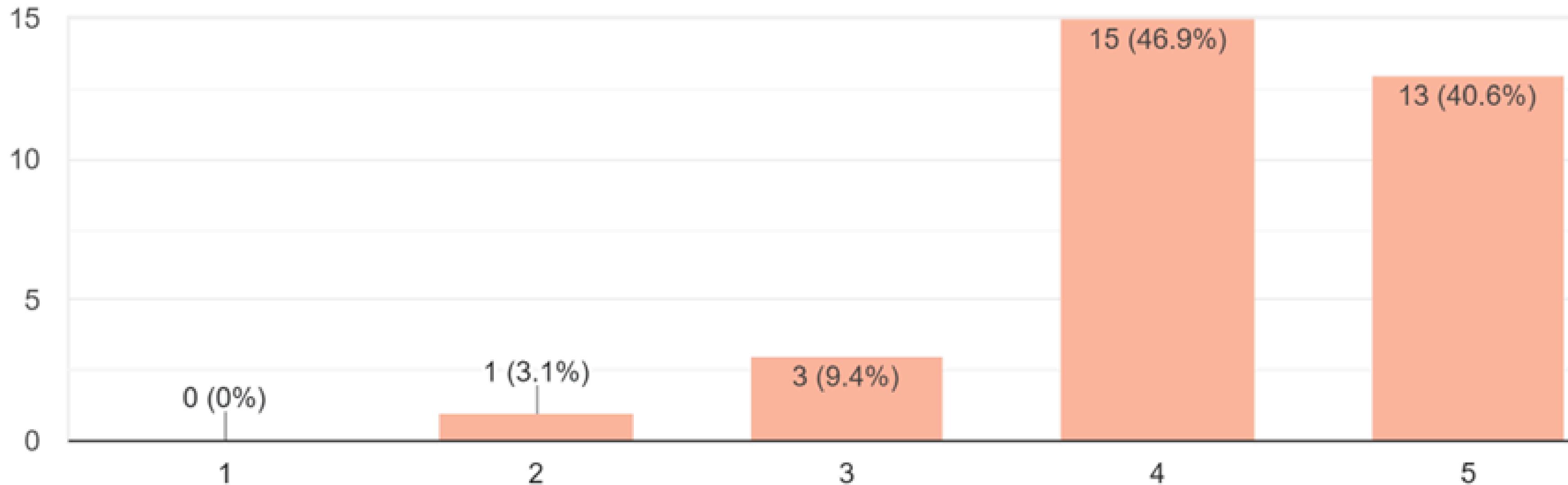
- Scheduling conflicts.
- Varied participation levels.

SECTION 1: ATTITUDES TOWARDS BIO BRAINS BONANZA (BBB)



Participating in BBB has enhanced my understanding of Matriculation Biology

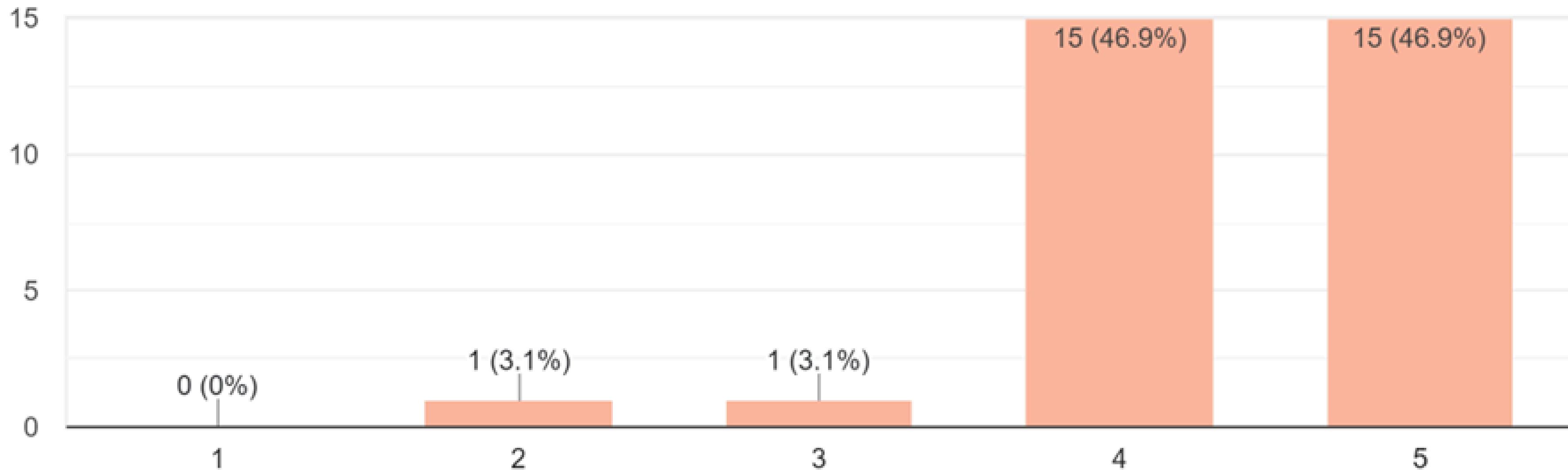
32 responses



1 Strongly Disagree - 5 Strongly Agree

How useful do you find the BBB programme in reinforcing your learning of Matriculation Biology concepts?

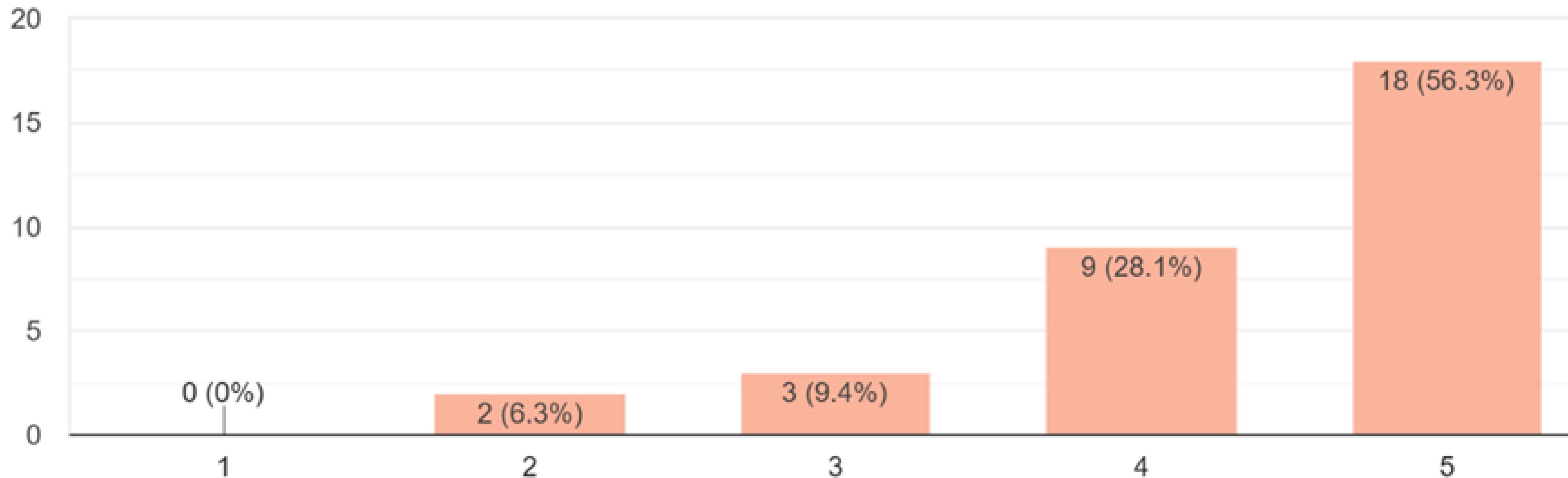
32 responses



1 Strongly Disagree - 5 Strongly Agree

I find the BBB sessions enjoyable.

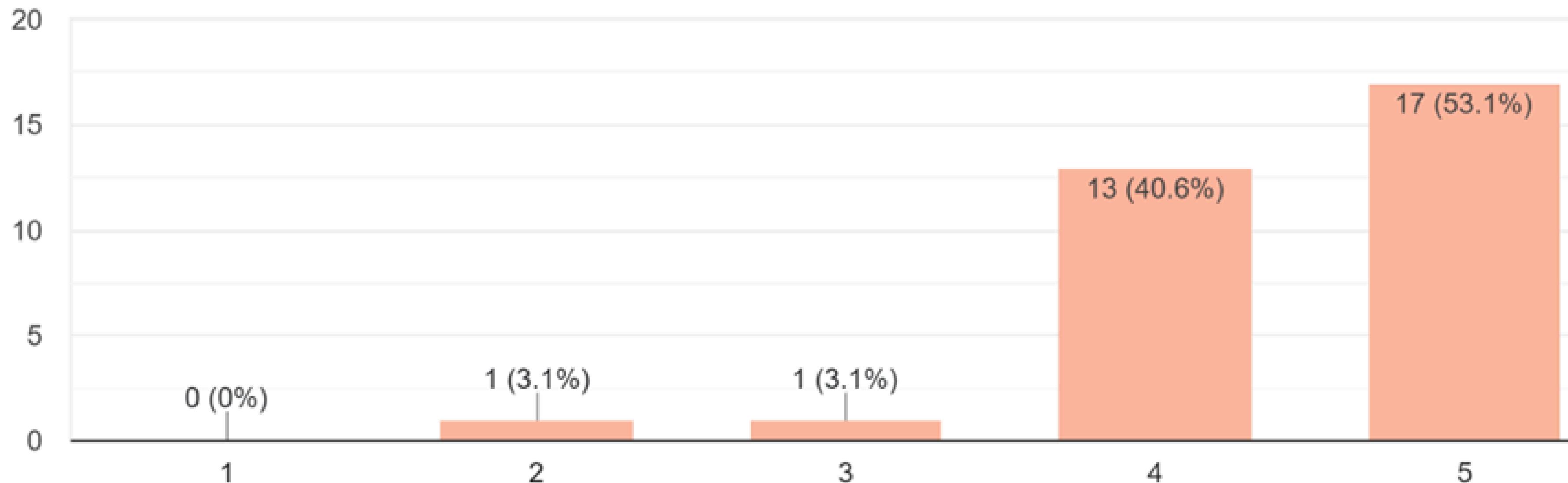
32 responses



1 Strongly Disagree - 5 Strongly Agree

BBB sessions have helped me stay motivated in my studies.

32 responses



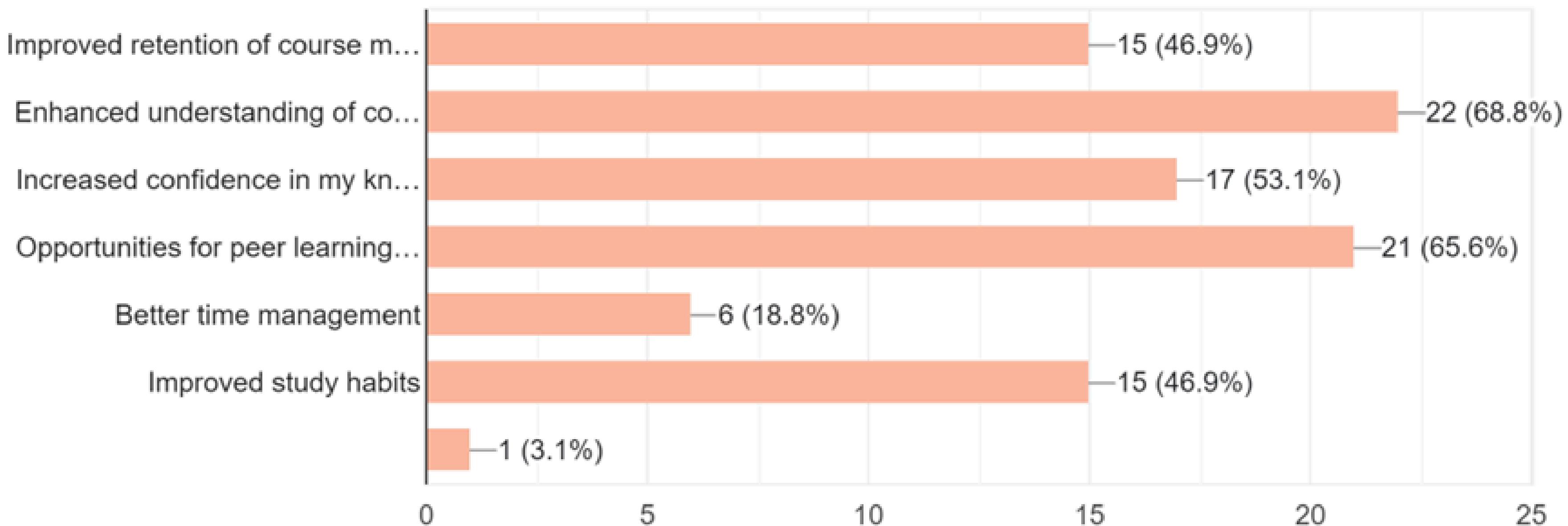
1 Strongly Disagree - 5 Strongly Agree

SECTION 2: PERCEIVED BENEFITS AND CHALLENGES



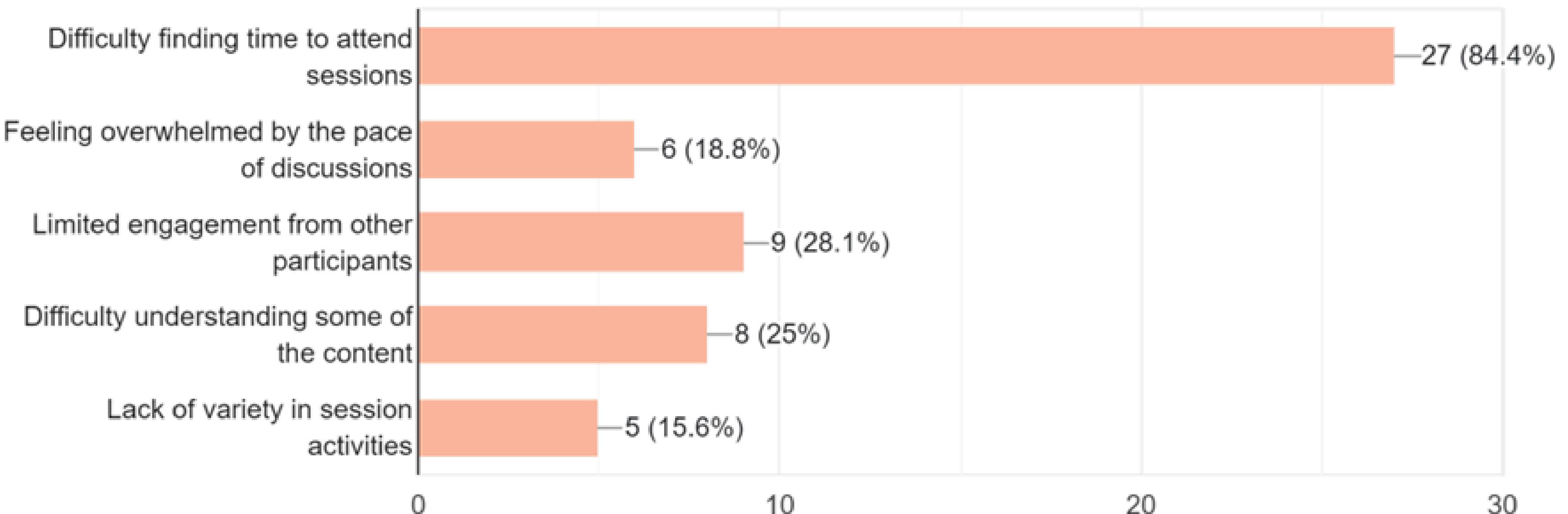
Which of the following benefits have you experienced as a result of participating in BBB? (Select all that apply)

32 responses



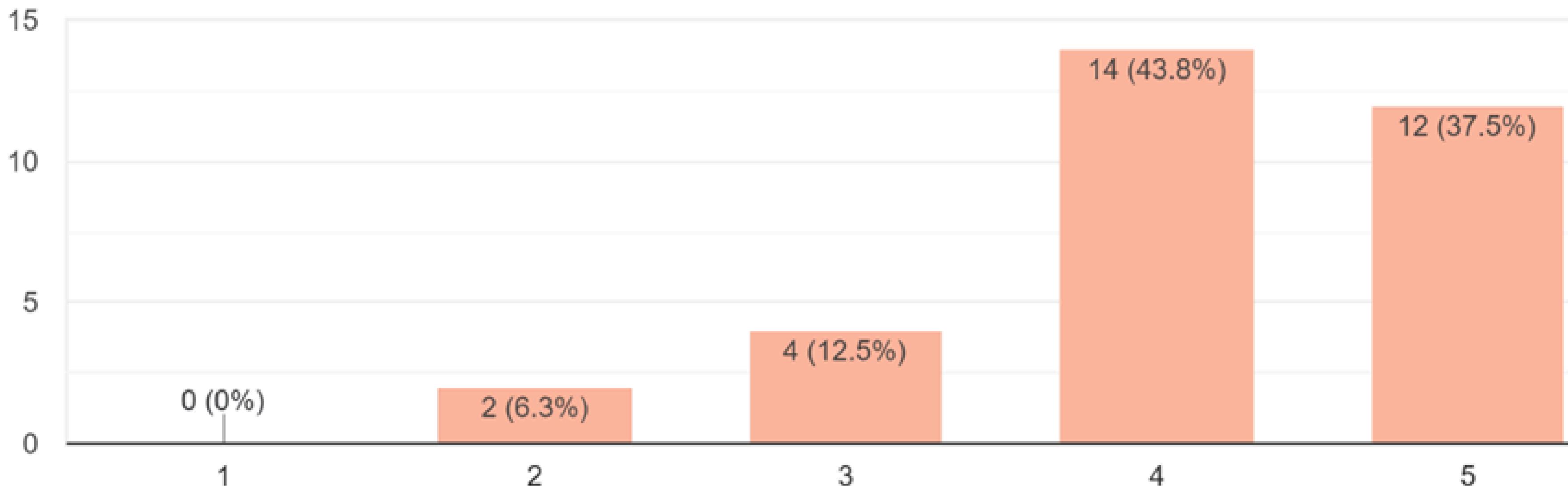
What challenges, if any, have you encountered while participating in BBB? (Select all that apply)

32 responses



Peer-to-peer explanations during BBB sessions are effective.

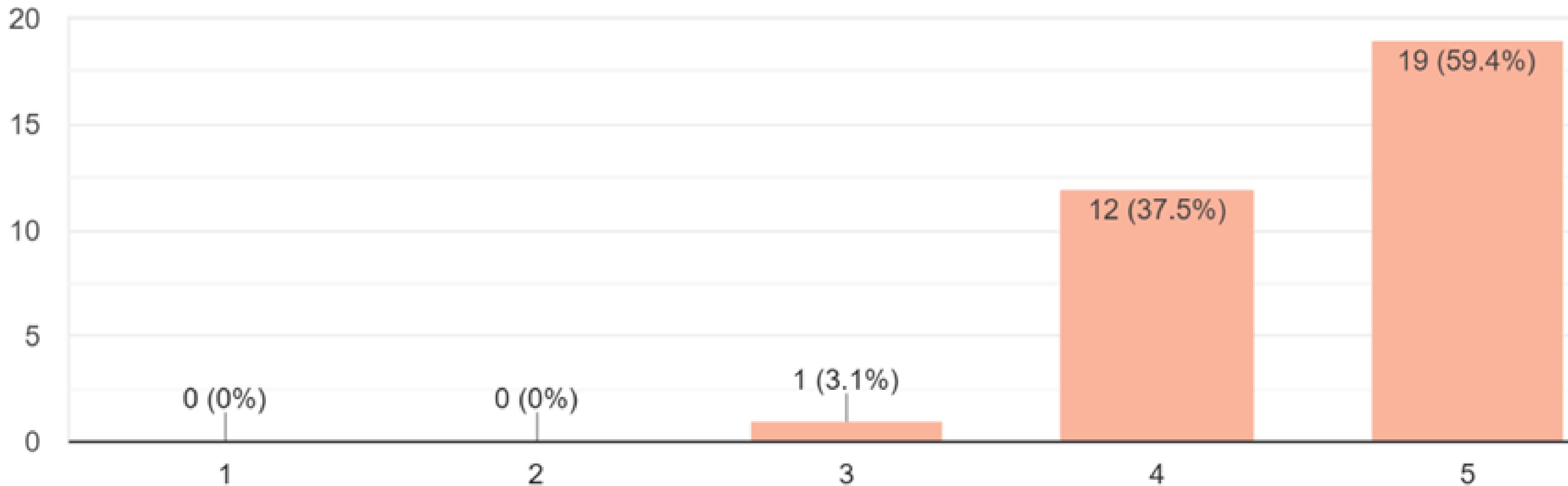
32 responses



1 Strongly Disagree - 5 Strongly Agree

The review, active recall, review again method used in BBB is helpful.

32 responses



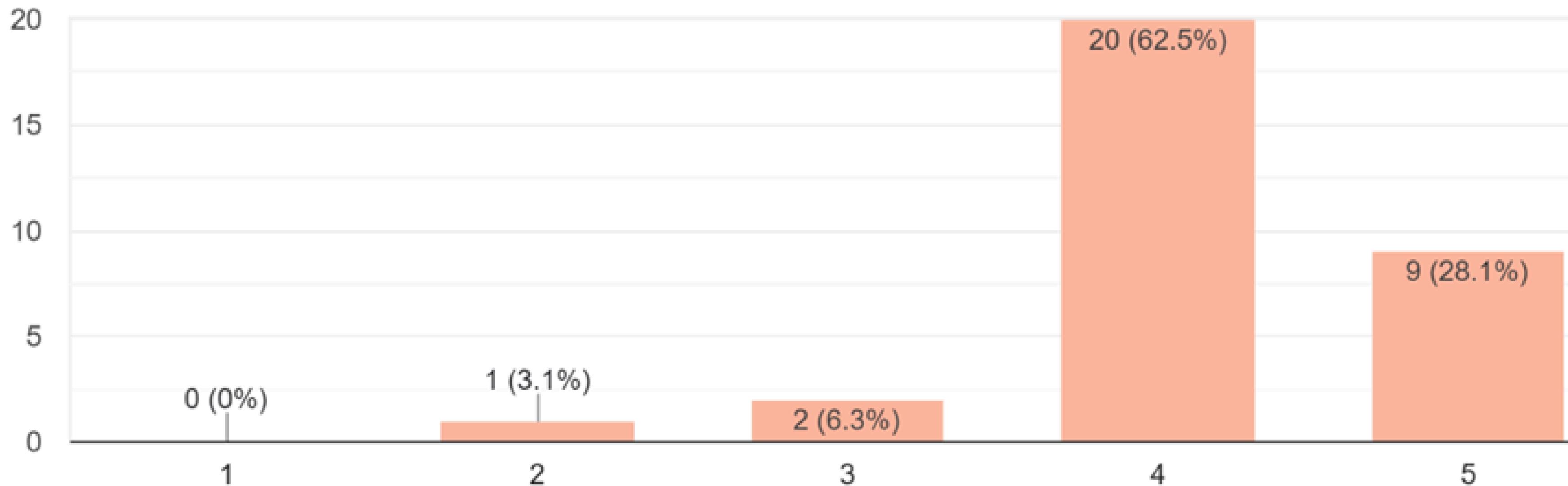
1 Strongly Disagree - 5 Strongly Agree

SECTION 3: IMPACT ON LEARNING OUTCOMES



My overall academic performance in Matriculation Biology has improved since participating in BBB.

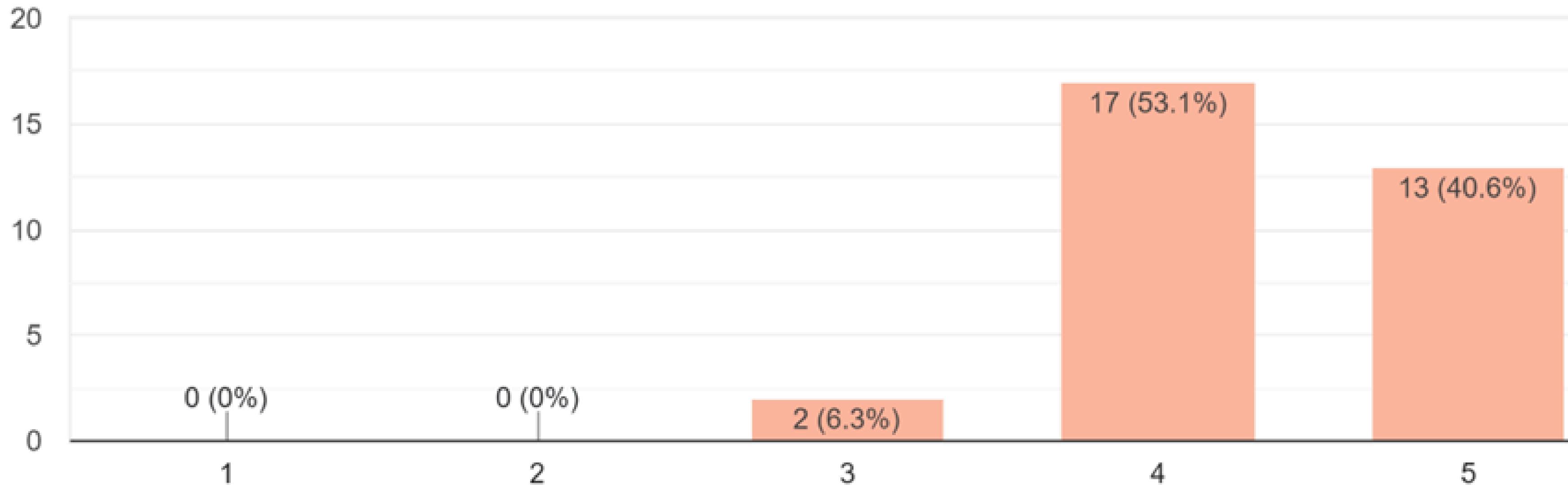
32 responses



1 Strongly Disagree - 5 Strongly Agree

Participating in BBB has improved my ability to retain and recall course material.

32 responses



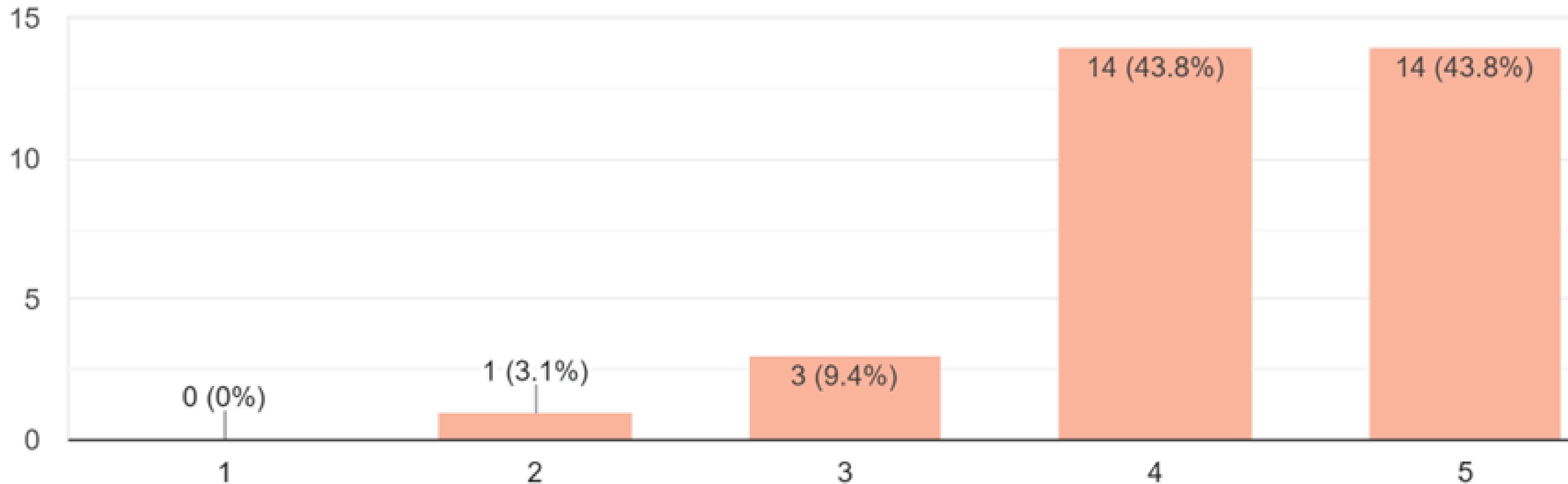
1 Strongly Disagree - 5 Strongly Agree

SECTION 4: PROGRAMME FEEDBACK



I am satisfied with the structure and organization of BBB sessions.

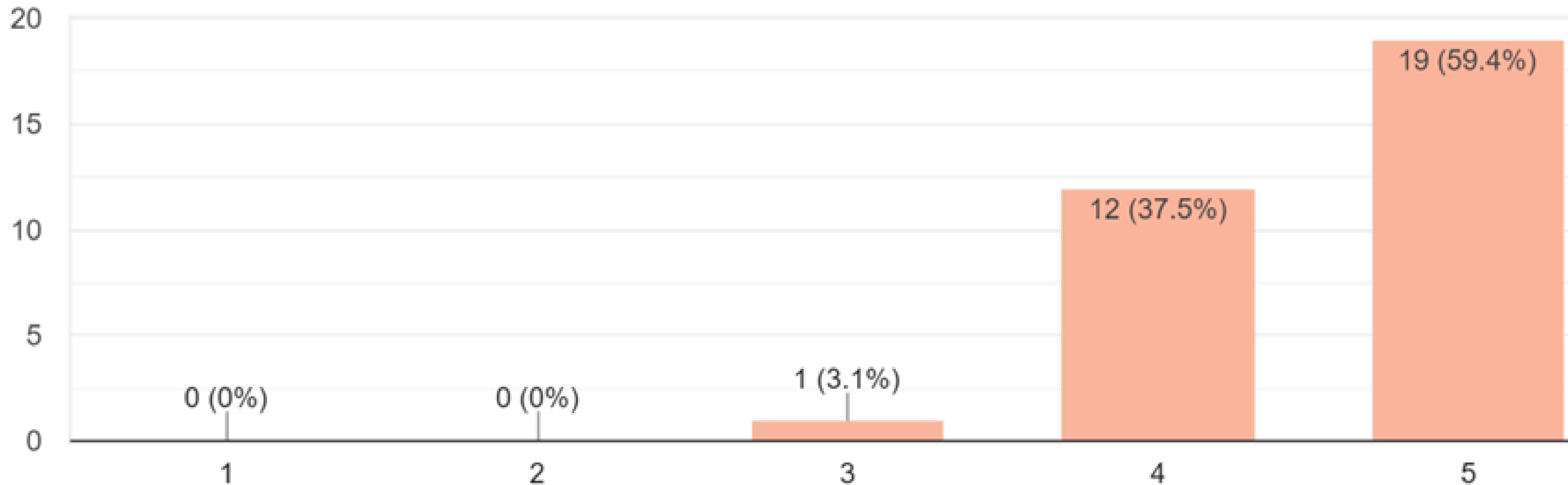
32 responses



1 Strongly Disagree - 5 Strongly Agree

I would recommend the BBB programme to other students in Matriculation Biology.

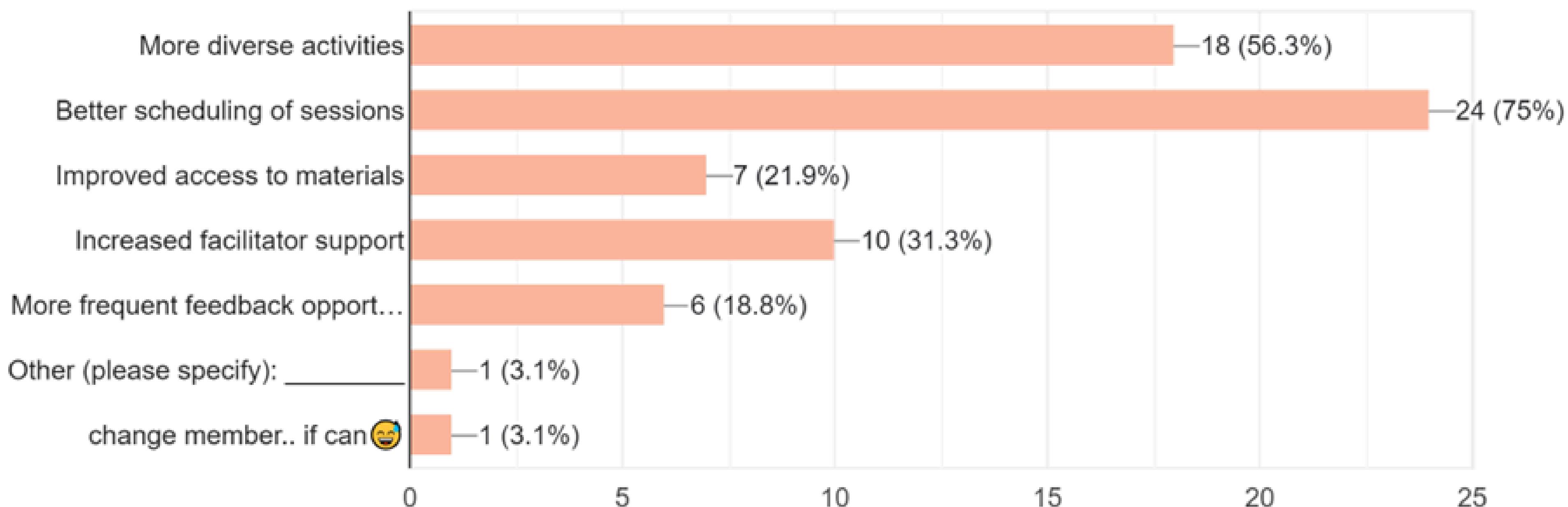
32 responses



1 Strongly Disagree - 5 Strongly Agree

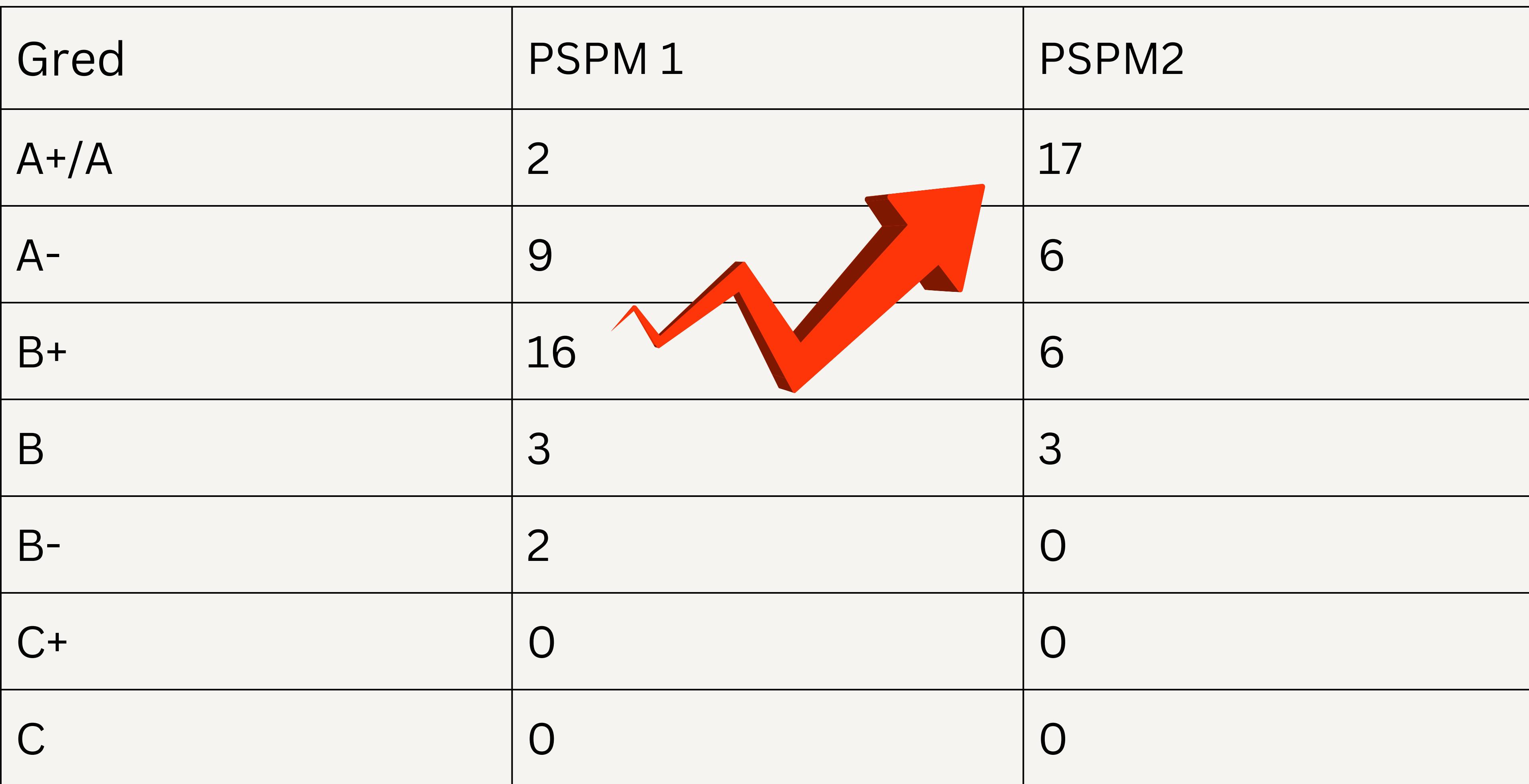
What suggestions do you have for improving the BBB programme? (Select all that apply)

32 responses



ACADEMIC PERFORMANCES COMPARISON BEFORE AND AFTER BBB SESSIONS





The number of students achieving an A has increased in 2023/2024 session

Increase in grade



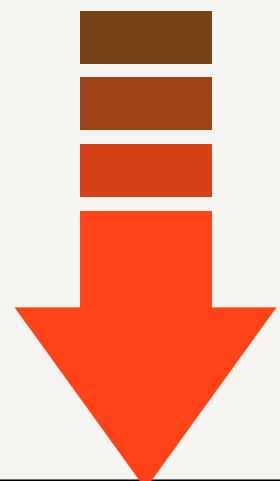
23

Maintain in grade



17

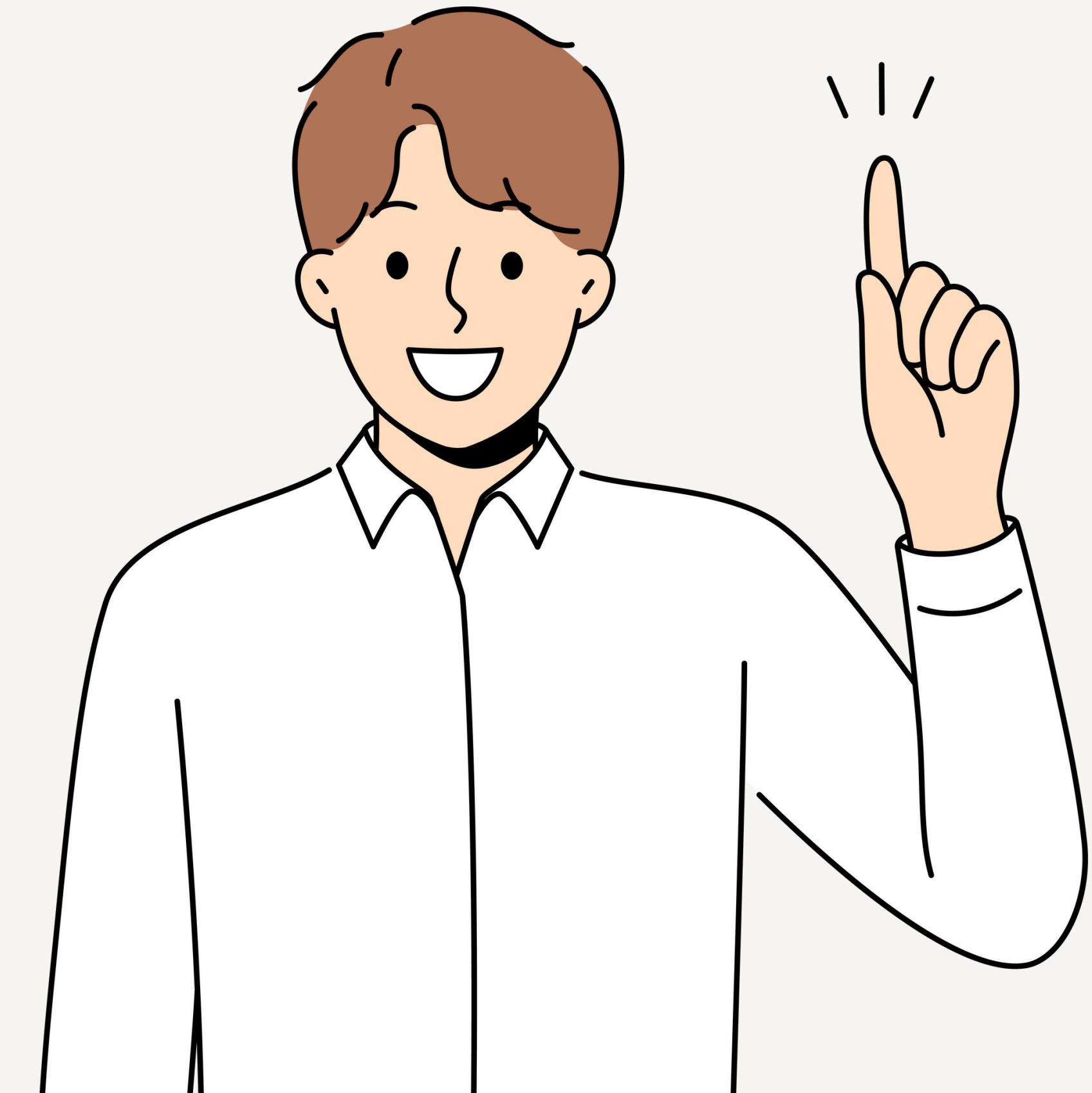
Decreased in Grade



2

Many students have shown improvement in their grades or have been able to maintain their grade after participating in the BBB program.

IMPACT



salam sir... i hope it's not too late to say thank you. Thank you for everything sirrrrr

 bio saya from B+ to A-. walaupun saya nk aim A bio tp saya still bersyukur sbb ada peningkatan dari sem lepas .

BBB helps me a lot sir  THANKS SIRRR



17:51

IMPLICATIONS AND FUTURE STEPS



Potential for scaling BBB to other subjects or institutions.

Supports innovative and interactive teaching strategies.

Refine BBB based on student feedback and challenges.

CONCLUSION

The Bio Brains Bonanza (BBB) programme offers an effective approach to enhancing knowledge retention and understanding in Matriculation Biology through peer-to-peer learning, structured revision, and interleaved practice, while fostering greater student engagement and confidence.



