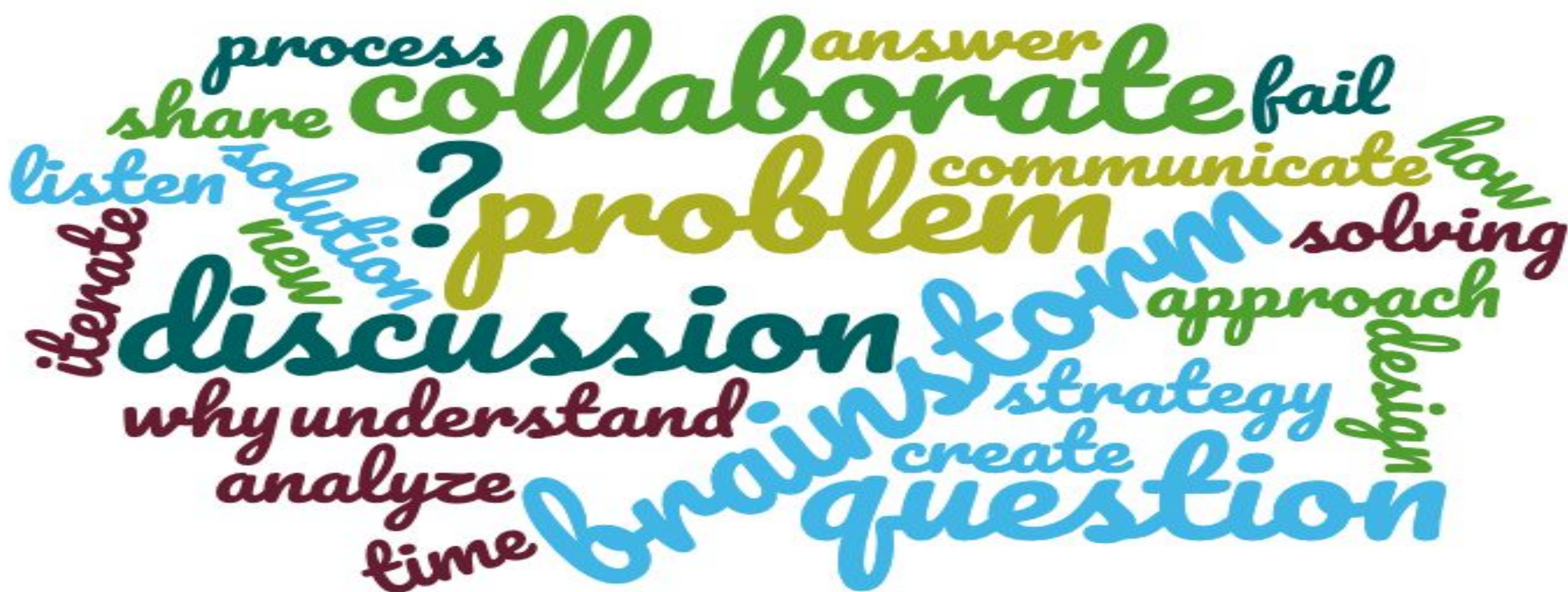


CASE-BASED LEARNING IN INTERNATIONAL BACCALAUREATE® BIOLOGY

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PURPOSE

The purpose of this action research study was to determine if using the case-based learning method in a senior level International Baccalaureate® (IB) biology course could improve student’s problem-solving skills and better prepare them for the types of questions asked on the end of course IB assessment.

RESULTS

Data collected from pre- and post-unit problem solving assessments as well as pre- and posttreatment Problem-Solving Self-Perception surveys did not show a statistically significant difference in student performance or self-perceptions between the treatment and nontreatment units. However, some transformation in student attitudes was noted in survey and interview responses.

VALUE

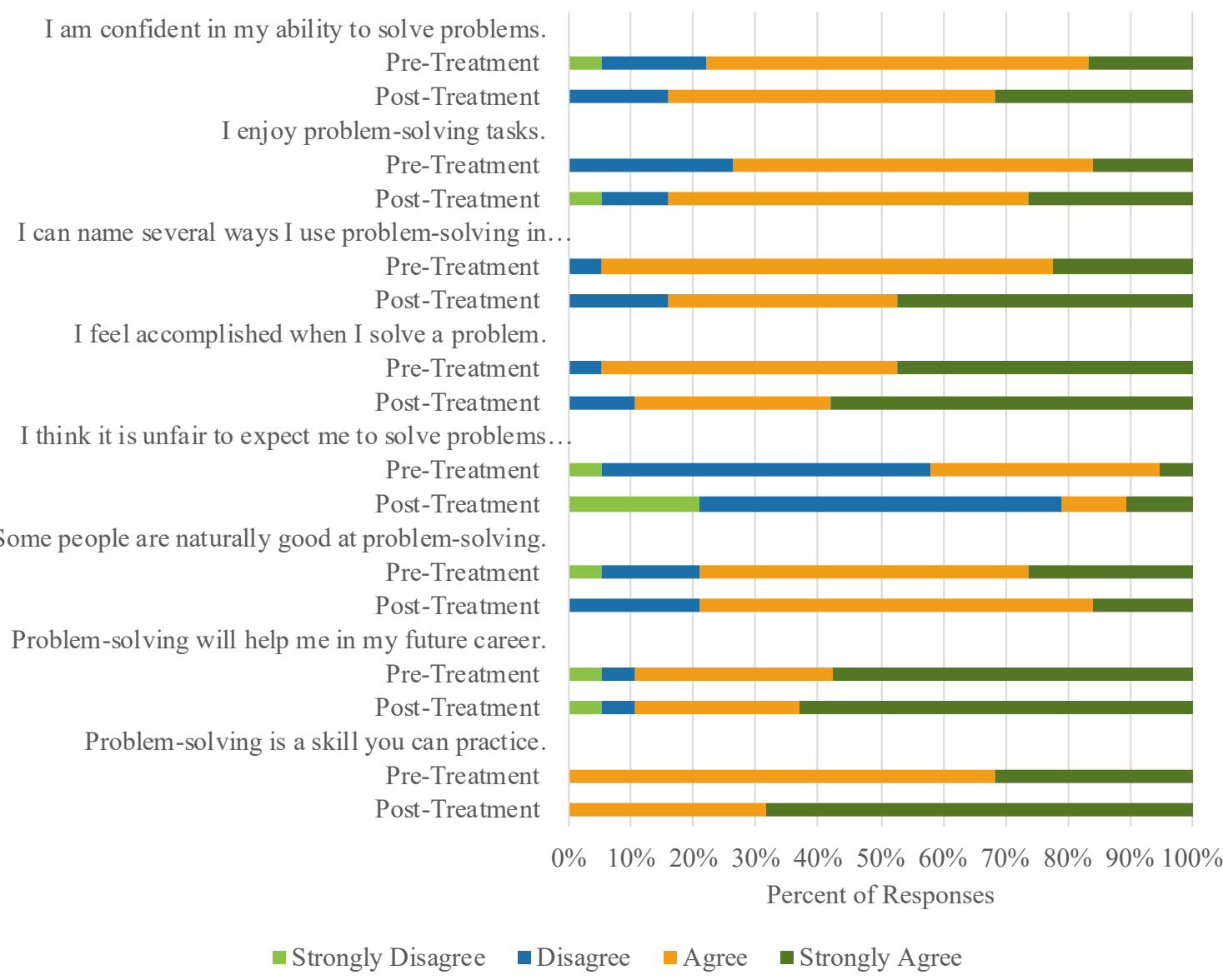
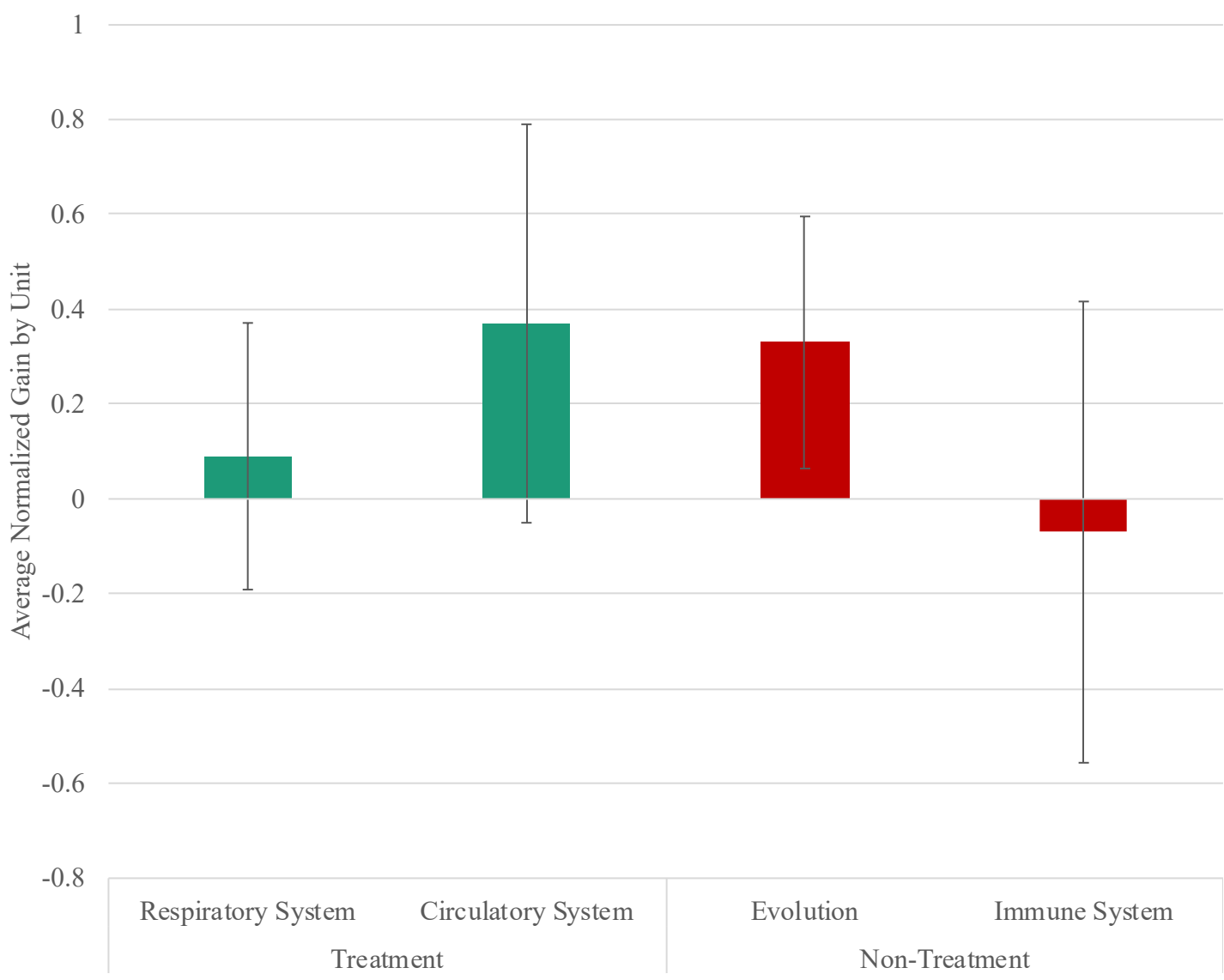
Use of the case-based learning method increased student interest and engagement in senior IB biology. Students expressed enjoyment at being given an opportunity to investigate real biology problems and situations, evaluating data and conditions associated with the problems, and applying their biology knowledge to the development of solutions.

BACKGROUND

- ❖ Problem-solving is a key element of the IB program and is assessed on the course assessments
- ❖ Past students have had difficulty with questions involving data or real situations where knowledge must be applied, not simply recalled
- ❖ Case-based learning is a teaching strategy that employs the use of real-life or fictional scenarios to teach students problem-solving through the application of prior content knowledge
- ❖ Yadav, et al. (2007) found that implementing the case-based learning method in classroom instruction improved student’s critical thinking and problem-solving
- ❖ The case-based learning method was also found to increase student engagement and collaboration (Yadav, et al., 2007)

DATA

Normalized gains on pre- and post-unit problem-solving assessment, (N=20)



Problem-solving attitude transformation on pre- and posttreatment surveys, (N=19)

Student quotes regarding case-based learning:
“I liked having actual life problems and figuring out how my knowledge can be used.”
“I really enjoyed that the cases were something from real-life.”