

How does a student's lab group impact their engagement and performance in a lab class?

Principal Investigator: Audra Hawkinson, MSU MSSE Candidate, Davenport, IA Summer 2024

Does a student's lab partners increase engagement in the class?

Do student engage in science class more when grouped with similar student to themselves?

Do students feel more comfortable and engaged in groups that avoid a member that is a lone gender or minority?

Treatment Plan

Prior to treatment class

- Use survey information and gradebook information to group student for treatment class

During treatment class

- Group students that have similar attitudes to school, science and group work
- Complete a teacher journal to record thoughts on progress

Post treatment class

- Administer the post treatment survey to students in treatment and comparison class
- Interview six students in varying aptitudes and science interest
- Complete teacher journal

Data

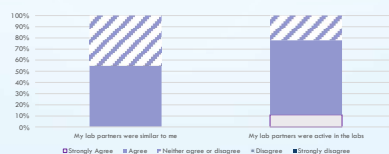


Figure 1. Students perception of group, (N=9).

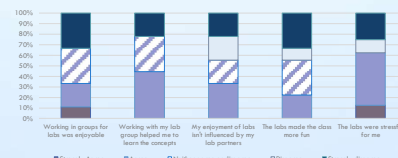


Figure 2. Students' attitude toward labs post treatment, (N=9).

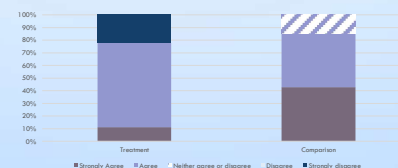
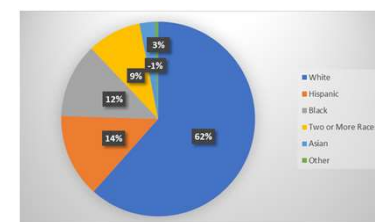


Figure 3. Student's belief that group work will help them in the future, (N=9, N=7).

Themes from data

- Students felt similar to each other in the treatment class
- Students were comfortable in their groups
- Although they were comfortable in their groups, this did not translate to enjoying labs
- Most students think that learning to work together is important even if they don't enjoy it.
- From the teacher journal, students that struggled historically worked diligently to complete labs but may need additional supports

Student attributes -Davenport West



56% of student qualify for free or reduced lunch at Davenport West

Figure 4. Davenport West High school demographics..

Conclusions

Students have strong opinions on group work whether positive or negative.

Surprises-

Most students don't feel like "they do all the work"
Ethnic make-up of groups had little impact on cohesiveness

Findings -

Many students find that labs make them feel accomplished
Most students feel that others are accepting in a lab setting
Students overwhelming believe that group work prepares them for the future even if it makes them uncomfortable

Teacher Implications

Although some learners struggled with completing labs and needed some more support, struggling students rose to the occasion and worked diligently to complete labs when grouped together. Scaffolding or attention to group dynamics required in future to prevent students feeling left out

Labs connection to real world objects engages students