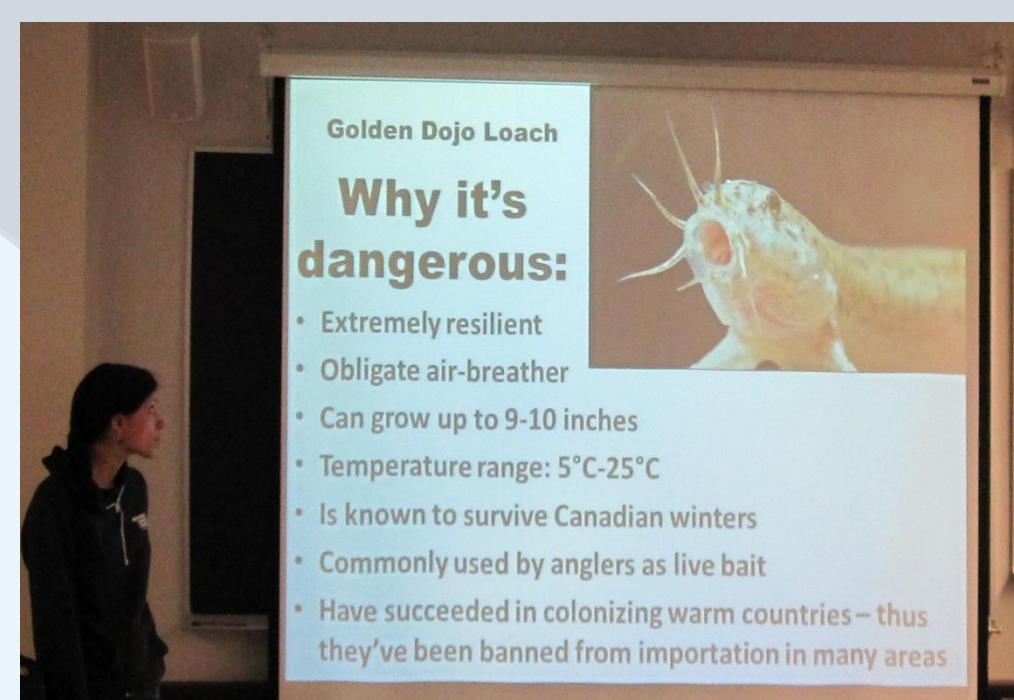


What is inquiry?

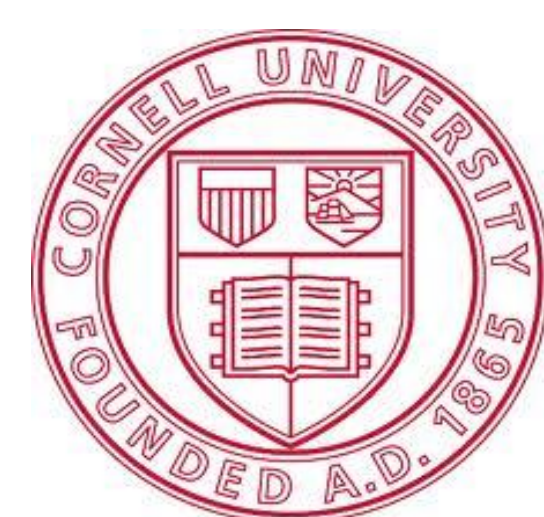
In inquiry-based learning, students:

1. Make observations
2. Define a question
3. Gather evidence
4. Use evidence to generate an explanation
5. Communicate their findings



Democratizing Undergraduate Research:

Incorporating Inquiry into Science Classrooms to Promote Scientific Identity



Krista A. Capps and Jillian S. Cohen

Implementing inquiry and assessing its effects

Invasion investigation

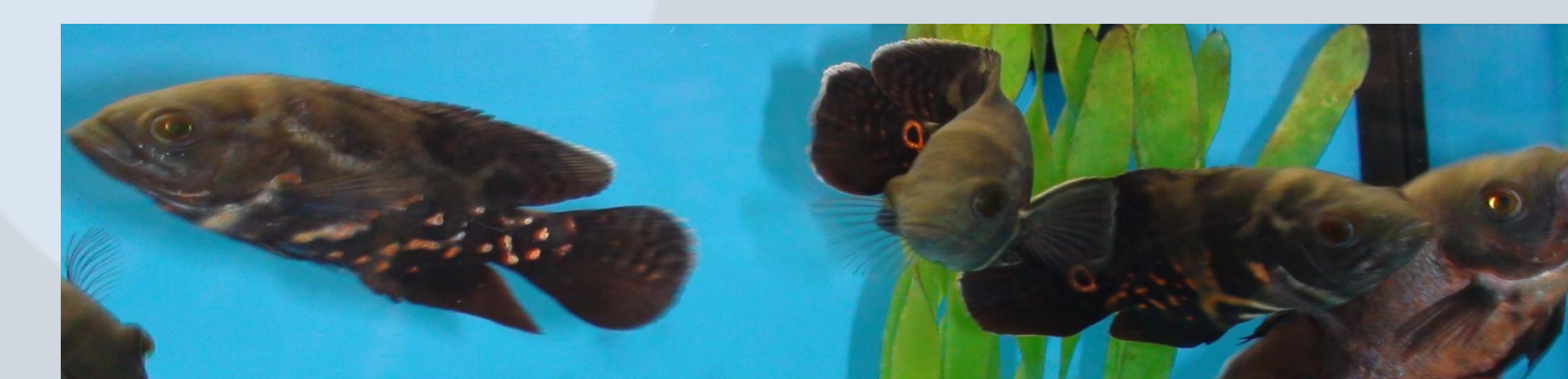
Does inquiry-based learning increase the likelihood that students will identify themselves as scientists?

- Created an inquiry activity where students assessed risk of invasion from aquarium trade
- Students in NTRES 3100 allowed to choose between our activity and a no inquiry activity
- After completing the activities, both sets of students completed an optional survey about their experiences

Research experiences survey

How do the changes in personal identity that arise from inquiry-based learning compare to changes observed during independent research?

- Created a survey to assess students research experiences and their self-identity
- Tested the survey with Fish Ecology students
- Survey will be distributed in Fall 2011



Why use inquiry-based learning?

- Promotes critical-thinking skills
- Provides authentic research experiences for students who might not otherwise have them
- Students collect their own data and discover patterns and processes for themselves, which enhances knowledge retention

Invasion investigation

- Students collected data autonomously, but had similar findings
- Groups found interesting data sources (e.g. facebook) and generated unique criteria

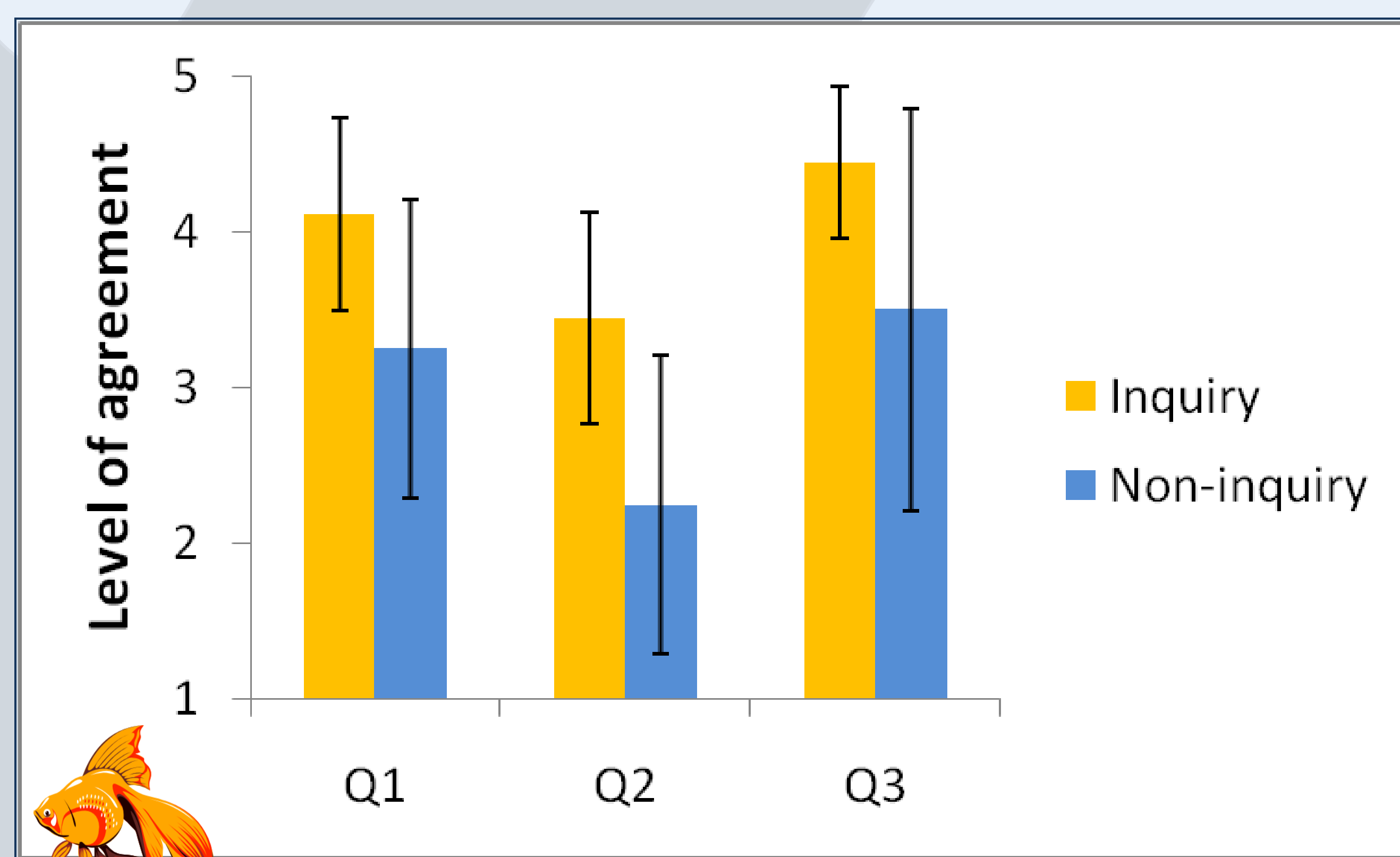


Fig. 1. Do you agree with the following statements?
 1. I collected my own data as evidence to support my findings
 2. I participated in a scientific investigation
 3. Doing this activity made me feel like a scientist

Research experiences survey

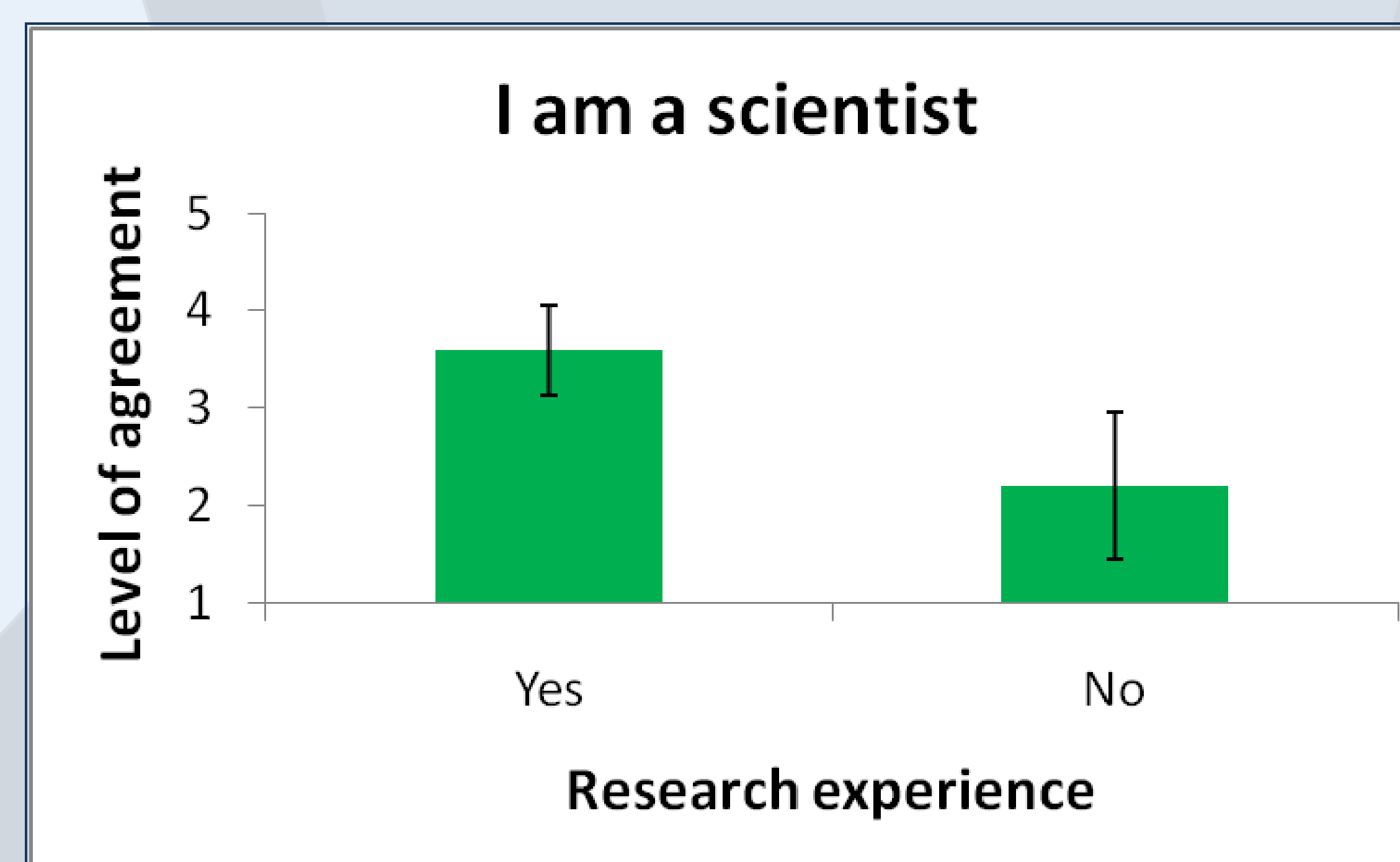


Fig. 2. Level of agreement with the statement, "I am a scientist" for students who had some research experience, whether inside or outside the classroom, compared to those who did not have research experiences.

Recommendations

- Faculty should consider using inquiry-based activities in lieu of traditional group work
- Universities should encourage research experiences for undergraduates, including inquiry-based learning



Acknowledgements

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