



Exploring the Impact of POGIL on Student Engagement

Chris Mayfield
James Madison University

Patricia B. Campbell
Campbell-Kibler Associates, Inc.

Helen H. Hu
Westminster University

Clif Kussmaul
Green Mango Associates

Research Questions

In POGIL and Interactive Lecture classes, what are the differences/similarities in:

1. Self-reported student behavior?
2. Observed student behavior?
3. Observed instructor behavior?

Research Approach

- Observe classes (live and recorded) in the first, second, and third month
- Triangulate the observation data with instructor and student surveys

Student Survey

- Items from **Ahlfeldt et al.** (2005)
- Based on **NSSE** (National Survey of Student Engagement)

Name: _____ Date: _____ Instructor: _____

Please help us learn more about student responses to different instructional strategies by filling out the following survey. There are no "right" or "wrong" answers; we want to know what you think. Thank you for your time!

All responses are confidential, and no information that could be identified as coming from you or anyone else will be shared. If you have any questions, feel free to contact Dr. Helen Hu, hu@westminstercollege.edu, 801-832-2362.

Please cross (X) your answers:
To make a change, fill in circle:
A B C D
Answer = A
Answer = C

Part A

For **today's class**, about how often have you done each of the following?

	very often	often	occasionally	never
Asked questions during class or contributed to class discussions	☐	☐	☐	☐
Worked with other students during class time	☐	☐	☐	☐
Explained computer science concepts to other students during class	☐	☐	☐	☐

Part B

Please rate **today's class** session along each of the following dimensions:

Lost my attention	☐	☐	☐	☐	☐	Kept my attention
Increased my liking of the subject	☐	☐	☐	☐	☐	Decreased my liking of the subject
Too easy	☐	☐	☐	☐	☐	Too hard
Collaborative	☐	☐	☐	☐	☐	Individual
Had no impact on my skills and knowledge	☐	☐	☐	☐	☐	Greatly impacted my skills and knowledge
Exciting	☐	☐	☐	☐	☐	Dull
Too long	☐	☐	☐	☐	☐	Too short
Demotivating	☐	☐	☐	☐	☐	Motivating
Competitive	☐	☐	☐	☐	☐	Cooperative

Additional comments?

Students are more involved with POGIL than interactive lectures taught by the same instructors.

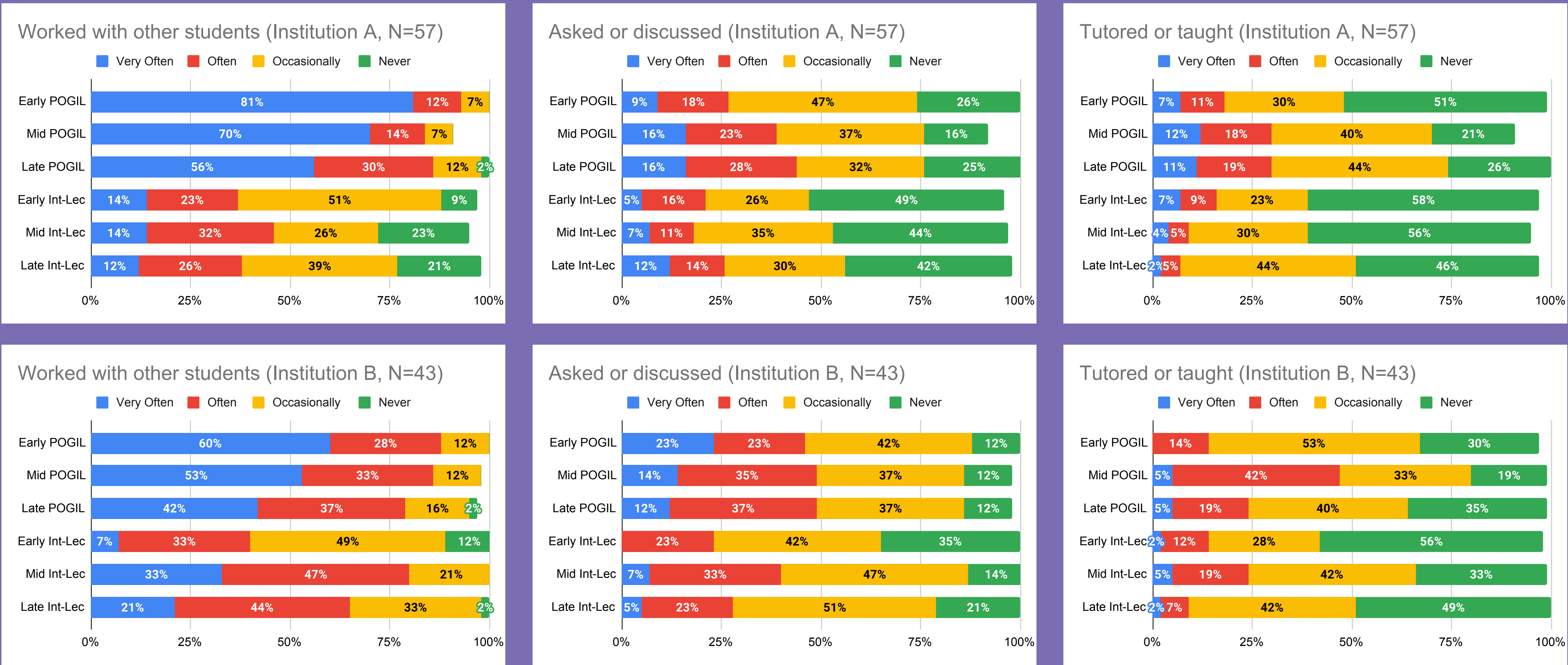


Figure 1: Engagement survey results from students who completed all six surveys, collected at the end of each of the six observed class periods.

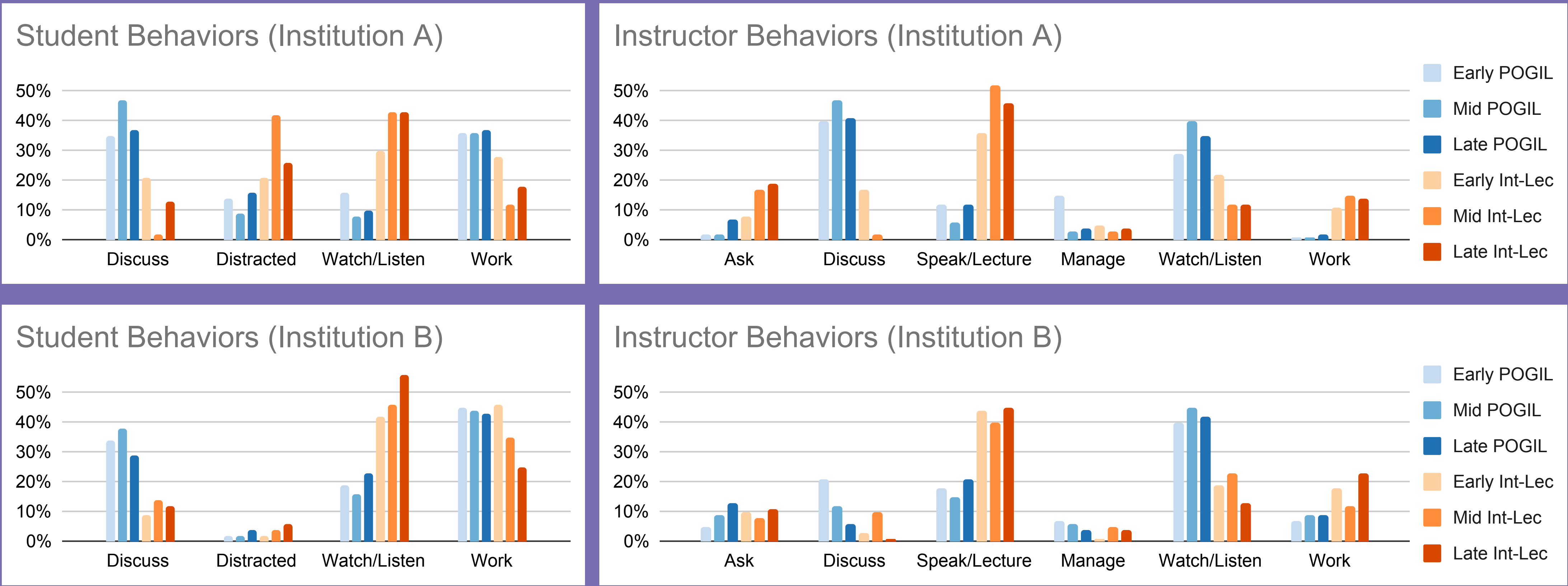


Figure 2: Student and instructor FASTOP codes from classroom observations comparing POGIL (blue) and Interactive Lecture (orange).

Focus & Action of Students & Teachers Observation Protocol (FASTOP)

Focus Code	Student Focus	Teacher Focus
Solo	Students act alone.	Teacher with one student.
Pair	Students act in pairs.	Teacher with a pair of students.
Team	Students act in teams/groups (3-5).	Teacher with student team.
Teams	Students act across or between teams.	Teacher with multiple teams.
Class	Students act as a whole class.	Teacher with the whole class.
Action Code	Student Action or Teacher Action	
Answer	Answer question(s) posed by other(s).	
Ask	Ask question(s) and wait for other(s) to answer.	
Discuss	Talk back and forth (more than one question and answer).	
Speak/Lecture	Talk by one person with no interaction.	
Manage	Pass out or collect papers, assign groups, take attendance.	
Distracted	Distracted or off task.	
Watch/Listen	Watch or listen (e.g., to lecture or presentation).	
Work	Write, take notes, work on a computer, etc. (not ask, answer, or discuss).	

- Suitable for a variety of pedagogical approaches
- Low-level practices can reveal insightful details
- See the **ASEE 2023 paper** by Kussmaul et al.

Data Collection

- 2 universities, 6 instructors
- 16 sections of first-year CS
- Fall 2022 – Spring 2024
- App: <https://optic.kussmaul.org>
- Tap observed codes each minute

Start Observe Report Help

Observe PHOTO POSITION

Comment(s)

comment?

Student Focus:

Solo Pair Team Teams Class

Instructor Focus:

Solo Pair Team Teams Class

Student Action:

Answer Ask Discuss Speak/Lecture Manage

Distracted Watch/Listen Work

Instructor Action:

Answer Ask Discuss Speak/Lecture Manage

Distracted Watch/Listen Work

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