

# A secure, scalable approach to student-graded homework for self-reflection

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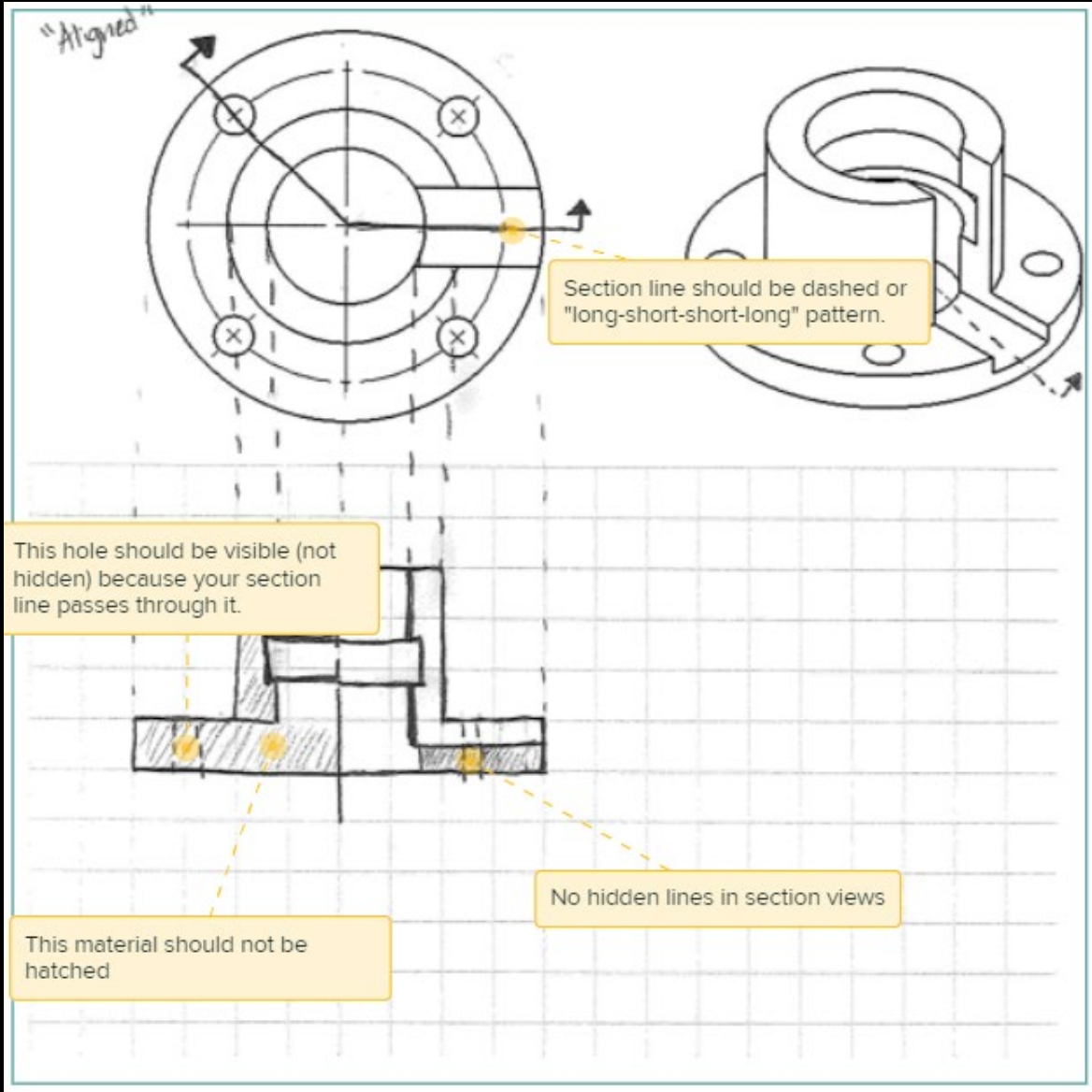


SCHOOL OF ENGINEERING & TECHNOLOGY

UNIVERSITY *of* WASHINGTON | TACOMA



# Do students actually read our feedback?



GRADED?	VIEWED?	CANVAS	TIME (PDT)
✓	👁	🔗	Feb 28 at 10:27AM
✓	👁	🔗	Feb 28 at 10:27AM
✓	👁	🔗	Feb 28 at 10:27AM

Our solution: students grade their own homework.

## Design principles

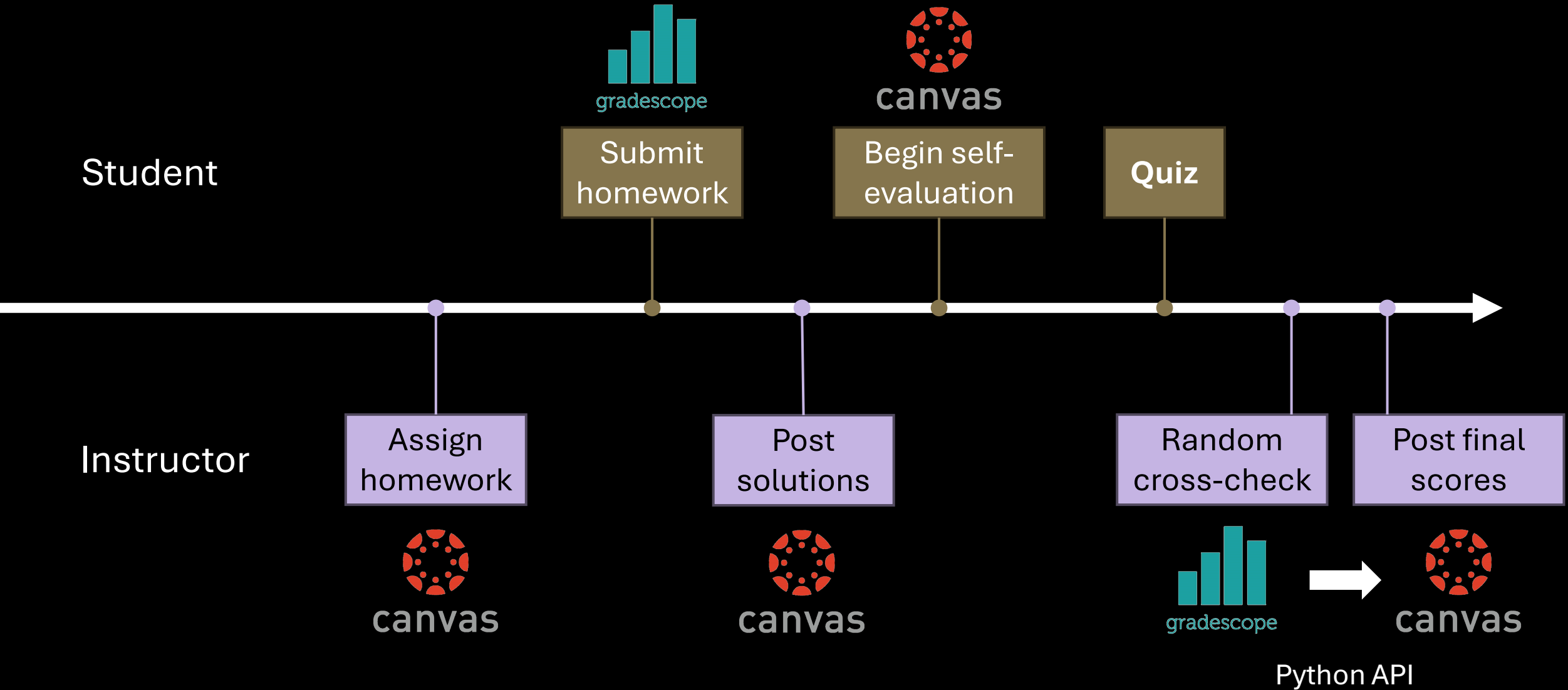
- Accountability and ownership
- Consistency and reliability
- Integrity
- Timeliness

## Metrics

- Grading accuracy
- Metacognitive behaviors
- Attitudes and workload



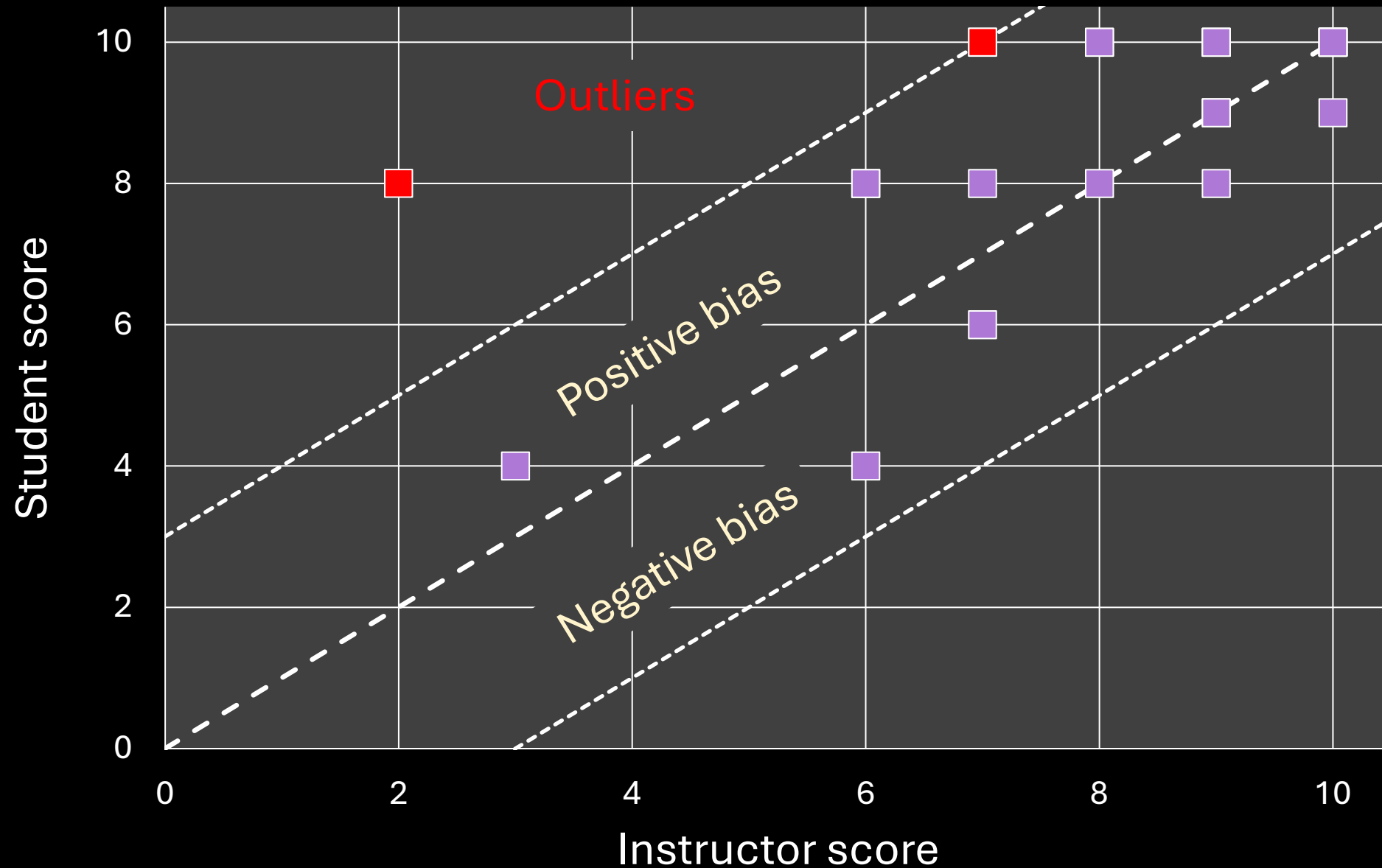
# Timeline



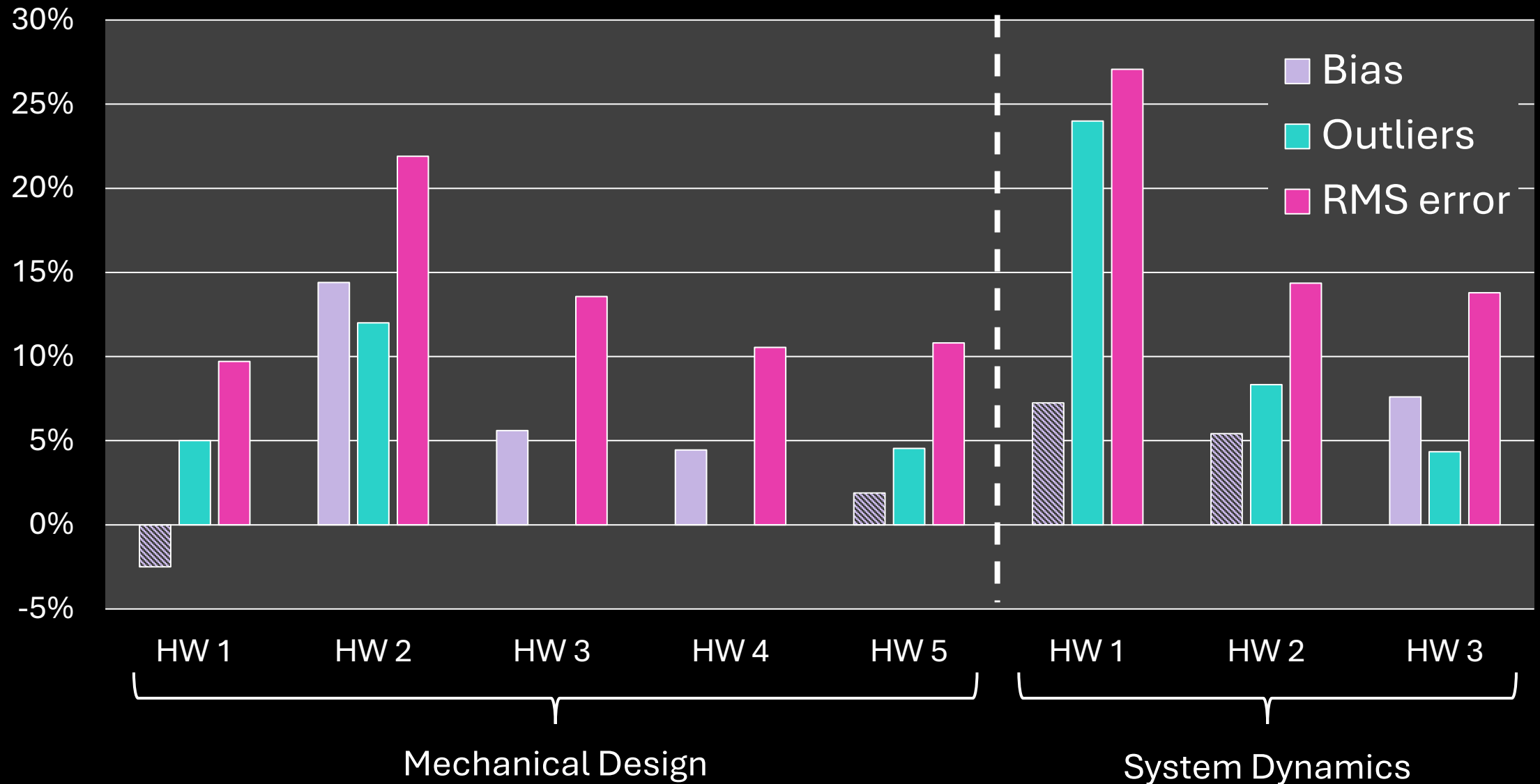
# Structured rubric improves reliability and accuracy.

Category	2 Points	1 Point	0 Points
Diagram(s)	Clear, correct, labeled diagram with all key features	Incorrect diagram, and/or missing features	Missing diagrams
Equations and variables	Correct equations/laws presented in variable form	Equations present, but don't match diagram or solution method	Missing, incorrect, or incomplete
Solution method	Correct method, neatly documented	Incomplete or incorrect method	Missing or unclear method
Calculations	Error-free and neat. Includes correct units	Missing or incorrect units, or minor errors	Significant errors
Communication	Clear work and relevant reflection	Readable work with marginally-relevant reflection	Messy or missing reflection

Students' self-scores are *mostly* **accurate** and **unbiased**.



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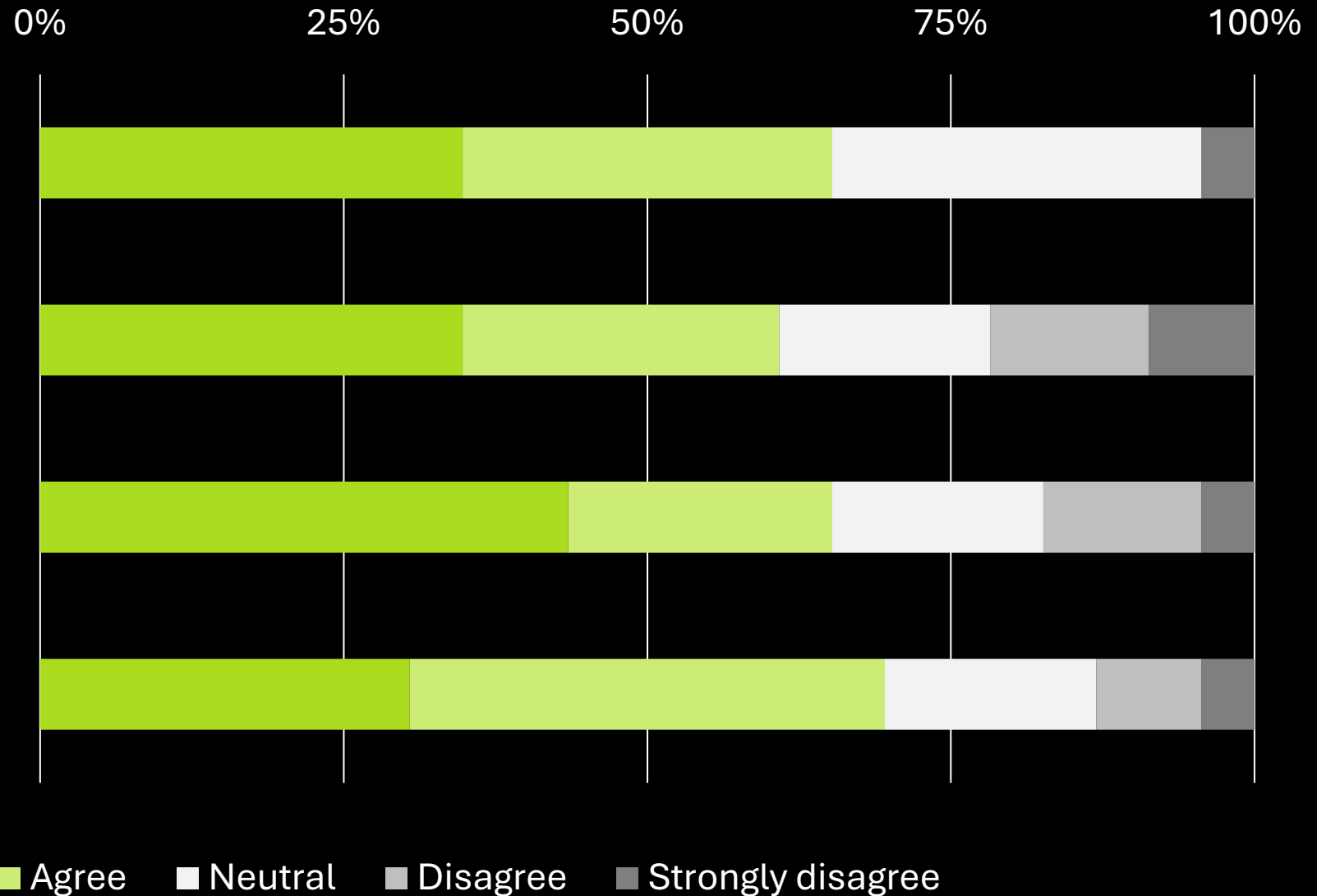
# Self-grading leads to increased **metacognitive activity**.

I **ask myself more questions** about my answers as I am completing assignments.

I spend more time **reviewing my work** and reflecting on my mistakes after I submit homework assignments.

I **review my past homework** assignments more carefully to study for quizzes.

Reviewing my homework assignments helps me **learn the material better**.



# Students recognize the **value** of self-grading



“...it became clear that struggling with the homework was the only way to have consistently good quiz grades.”

Questions? Comments? Suggestions?



If you use Canvas, scan the QR to download the Python code.

Thank you!















dalle3.org



