

The Effects of Performance Assessments on Student Success and Science Perception

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Background

Context:

- 8th grade students
- Students think of science as a discrete set of facts rather than processes and practices
- Traditional assessments reinforce that misconception

Core Belief: Science classroom assessments should be action-oriented and incorporate the Science and Engineering Practices, rather than measure memorization of facts.

Focus of Action Research:

- Incorporating authentic, NGSS-aligned performance assessments
- “Doing science” rather than “remembering science”
- Utilizing student feedback

“I think in life, you’re not going to have to take a test everyday, what matters in life is being able to perform well and show that you can use what you’ve learned in the real world.” –Student Quote

Main Question: What is the impact of performance assessments on student success and science perception?

- ❖ Does repeated practice with performance assessments increase student success on this type of alternative assessment?
- ❖ Does an increase in performance assessments affect student content knowledge retention?
- ❖ How do performance assessments impact student perception of science as a process rather than a product?
- ❖ How does a shift to performance assessments impact my instructional planning and classroom lessons?

Methodology

- 5 sections of 8th grade science =117 total students
- 5 Performance Assessments (PAs) alongside unit tests
- Data collected on assessments
- 3 student surveys and 2 rounds of interviews conducted
- Data analysis and teacher journal



Figure 1. Example of student work on performance assessment.

Results

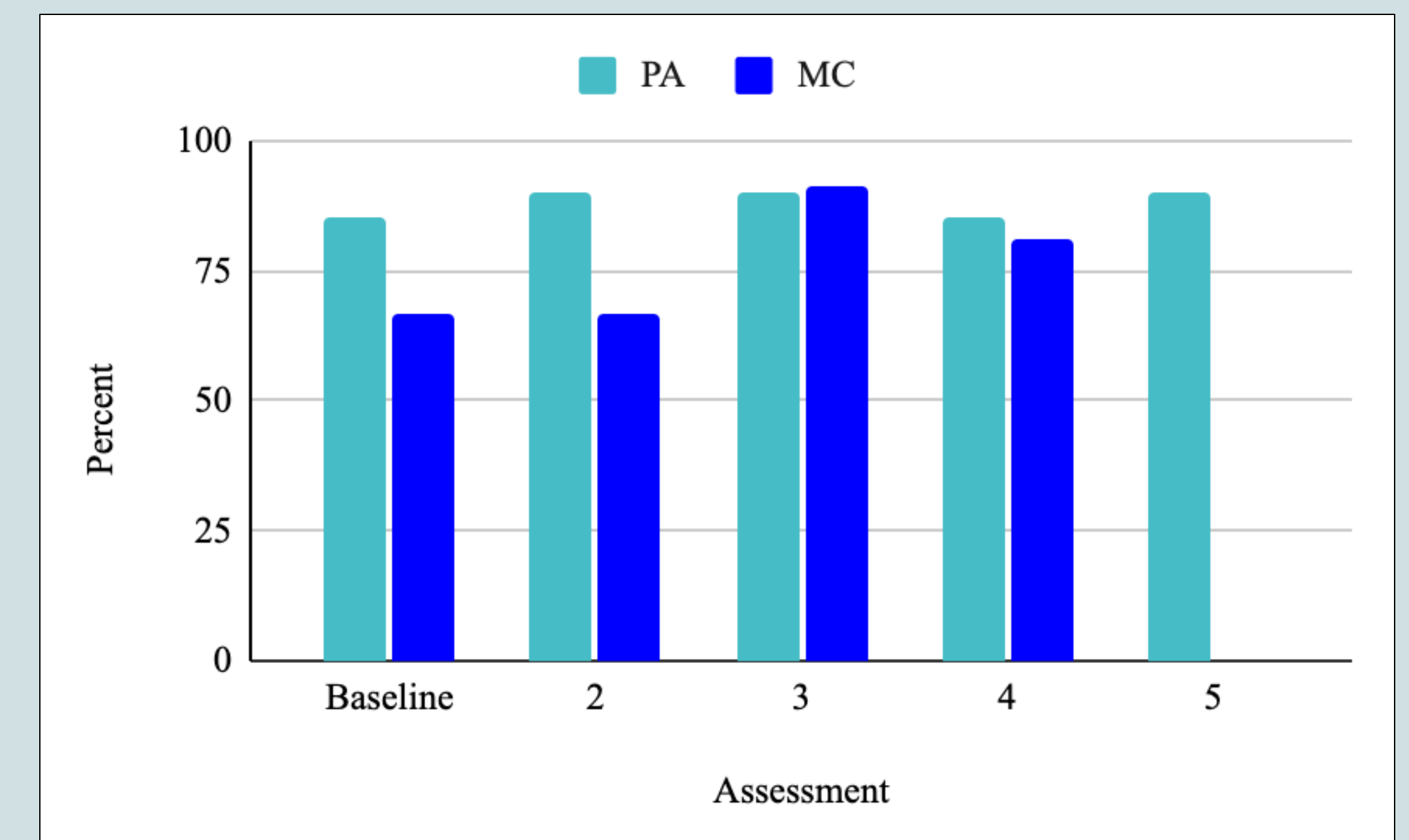


Figure 2. Median performance assessment (PA) scores compared to median multiple choice (MC) scores, (N=44).

- ADDITIONAL DATA:**
- 15% increase in understanding process of science
 - 12% increase in confidence on PAs

Conclusions

- Repeated practice increases student confidence
- Greater confidence leads to greater academic success
- PAs may support an increase in content knowledge
- PAs support an increase in student perception of science as a process

This style of assessment, compared to a normal (multiple-choice) quiz or test, is a better way to assess my science knowledge.

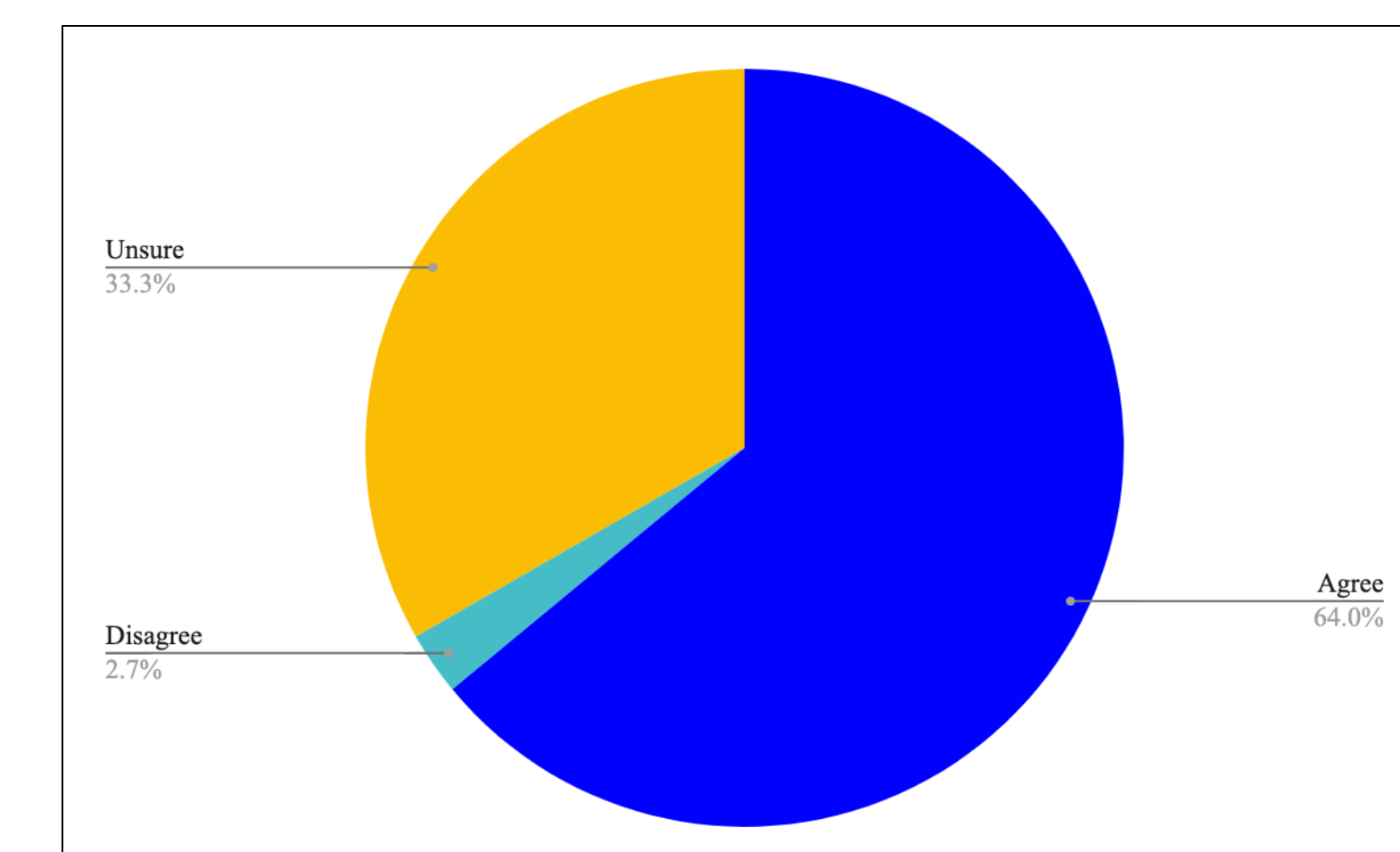


Figure 3. Student responses to final opinion question, (N=36)