

The Impact of Scientists' Struggle Stories on Student Grit

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Background

Grit, or passion and perseverance for long-term goals, is a recent buzz word that has educators wondering: how can we help students increase their determination to work hard and pursue their goals? Stories have been around since the beginning of time. They are used to entertain and teach in meaningful ways. This action research sought to answer the question: when students hear about the struggle stories of famous scientists, will they be inspired to have more grit in their own lives?

Student Samples

The Classical Academy	James Monroe Elementary
5 th Grade Students	5 th Grade Students
2 Classes	1 Class
37 Students Total	18 Students Total
High Income	Low Income

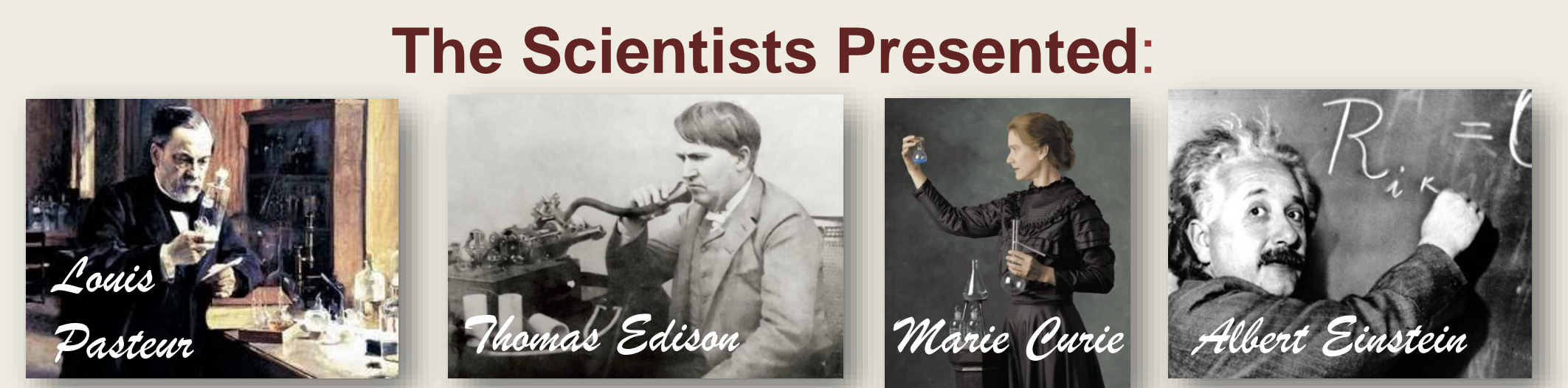
Treatment

After receiving the grit survey and the challenge problem, the students heard four famous scientists' biographies told from the perspective of their struggles. One narrative was told each week for four weeks. Students had discussion questions at the end of each story.

Research Questions

Primary Question:
How will the struggle-narratives of famous scientists impact student grit?

1. How will the presentation of struggle-narratives of famous scientists impact the way in which students handle challenges?
2. How will the presentation of struggle-narratives of famous scientist's impact student enjoyment and perception of science class?
3. How will data outcomes differ between a high-income school and a low-income school?

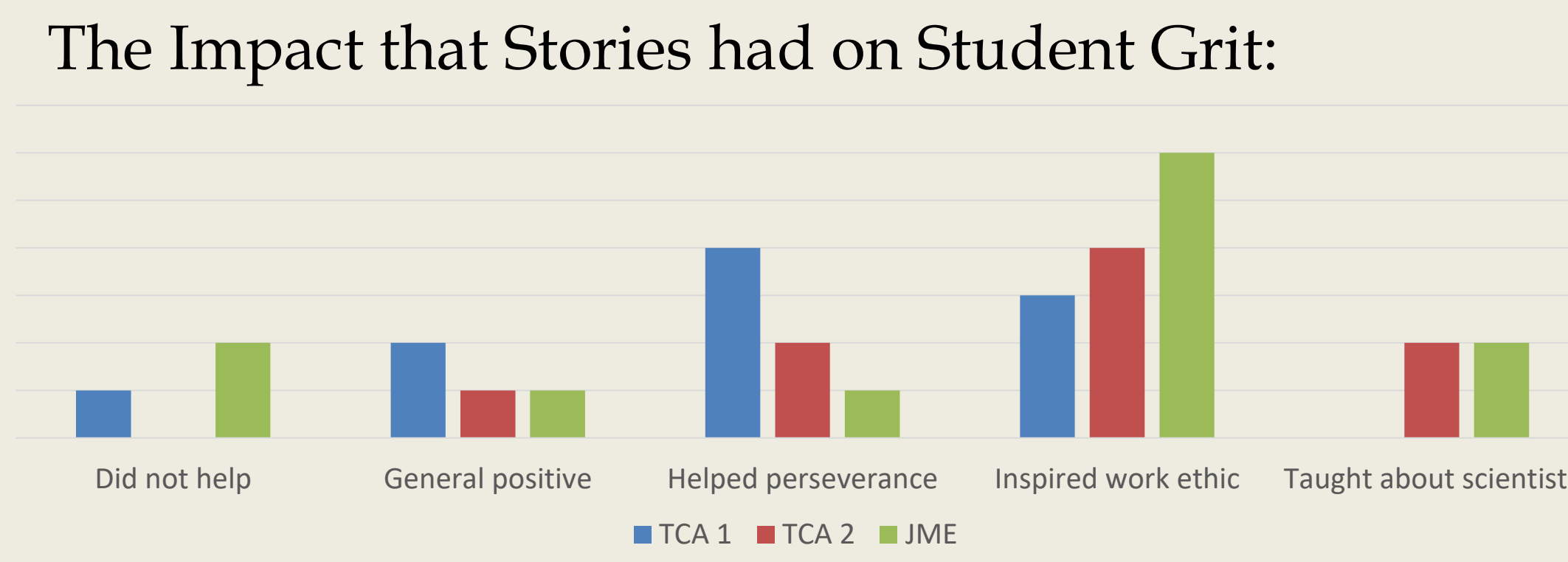
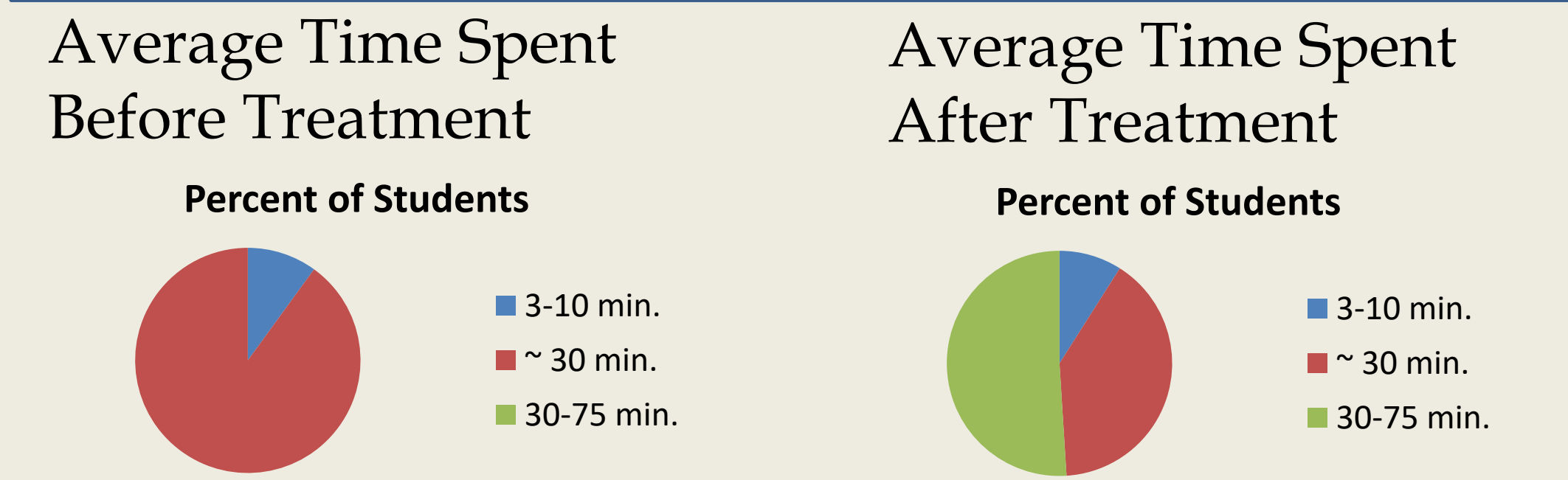


Data Collection

Focus Question	Pre/post Survey	Pre/post Problem	Student Interviews	Teacher Observations
1. Problem solving time	Student rating of their own grit.	Time spend on Sudoku recorded.	Examples of time spent on past projects.	How long did students try before giving up?
2. Enjoyment of science	Questions pertaining to science included.	None.	Did stories impact view of science class?	Did student engagement in science increase?
3. High vs. low income	Survey responses compared.	How does average time spent compare?	Responses considered.	What did different teachers notice?

Data and Results

Results demonstrated that students spent longer on challenge problems and improved their scores. They also offered positive responses to the question: How did the stories impact your grit?



Sample Excerpt from the Stories

"Louis Pasteur was born in France in 1822. His father was a tanner which means he was someone who made animal skins into leather. Being a tanner took diligence and Louis later said that his father had taught him the importance of hard work. As a boy, Louis did not do well in school. He struggled to keep up but, following his father's example of hard work ethic, he studied diligently. Because he did not naturally do well in school, he had to work more than others in order to keep up but by the time he got to high school, this effort began to pay off."

Student Quotes About the Stories

"I think the stories have inspired the way I look at challenges. I used to think they were just problems, now I see them as opportunities to learn."
 "They gave me more perseverance, now I can have more grit to work on goals harder."
 "Things seem easier compared to what they did, and it makes me want to keep trying."

Conclusion

The challenge problems, interviews, and open-ended responses demonstrated that students did grow in their grit and perseverance as a result of hearing the stories. They were inspired to think about the fact that inventions and discoveries came from hard work and the drive to stick with long term goals.

Value

Future classroom assimilation ideas:

- Read the capstone stories
- Add character dialogs to lessons
- Focus on struggles during biography presentations