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Mindsets: students, teachers and the influence of intelligence theories on educational outcomes

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Abstract

Context:

Students' implicit beliefs in assessing their own abilities are strongly related to their academic performance (Blackwell, Trzesniewski, & Dweck, 2007). Understanding one's intelligence as fixed or flexible impacts students' motivation and therefore their results. Similarly, teachers' beliefs influence their classroom performance and, consequently, their students' outcomes (Deemer, 2004; Rattan, Good, & Dweck, 2012; Rubie-Davies, Peterson, Sibley, & Rosenthal, 2015). The literature on mindsets is now well-established in showing the impact of student interventions on their school achievement (Blackwell et al., 2007). But there is much less evidence on the impact of interventions on teachers. Studies have analyzed changes in teacher beliefs (Claro, 2016; Rubie-Davies et al., 2015) but to our knowledge have not documented impacts on teachers' classroom practices. Moreover, little is known about the impact of mindset interventions on schools in vulnerable contexts (with high poverty rates and exposure to violence, as in Rio de Janeiro's municipal schools - Brazil). Students in vulnerable contexts are more susceptible to stereotyped expectations about their abilities (Aronson, Fried, & Good, 2002; Good, Aronson, & Inzlicht, 2003), leading to a negative cycle of underperforming socially disadvantaged groups.

Research Design:

This project evaluates how an intervention implemented by the municipal education system in Rio de Janeiro – a two-month program of mindset workshops for teachers – impacts teachers' beliefs, classroom practice and student results. We measure impacts through teacher and student surveys and direct classroom observations. An online questionnaire was initially applied to Rio de Janeiro teachers to identify their mindset and expectations regarding student performance. After testing several potential designs in a pilot phase, an intervention composed of five two-hour meetings was delivered over a two-month period at the start of the 2019 school year. The intervention was focused on 5th grade teachers in a randomized sample of 178 Rio de Janeiro primary schools. The content of the workshops followed the work of Paunesku et al. (2015) and Good et al. (2003), and aimed at building the belief that, just like a muscle, intelligence can be increased through effort, coping with adversity, and permanent efforts to improve. The pair-wise randomization used the predicted value of student results inferred from the characteristics of the schools in previous years to assign 50% of the schools to the treatment group.

Data Collection and Analysis:

Endline surveys applied at the end of the 2019 school year measure transformations in teachers' beliefs resulting from the mindset workshops. An innovation of this research is that we also use direct classroom observations to measure changes in teachers' pedagogical practices resulting from transformations in their beliefs. We use a standardized classroom observation instrument, called TEACH Plus, which combines measurement of teacher time on task, pedagogical practices and

student engagement (drawn from the Stallings “classroom snapshot” method) with measures of instructional quality and teachers’ support for students’ socio-emotional development embodied in the TEACH instrument developed by the World Bank in 2018 (Molina, Fatima, Ho, Hurtado, & Pushparatnam, 2018).

Findings:

The baseline survey showed that Rio de Janeiro’s teachers, on average, believe in the malleability of the intelligence of their students. However, teachers working with students with low socioeconomic status have significantly lower rates of growth mindset. We also found that 5th grade students in Rio were less likely to believe that intelligence can grow. Students (in our context) do not associate challenges with learning. Finally, we found that lower socioeconomic level students have more fixed mindsets than higher SES students (Figure 1). This suggests that this intervention may have important impacts on vulnerable students, but only if teachers’ patterns of interaction, encouragement and classroom practice actually change, to play a positive role in reshaping students’ beliefs.

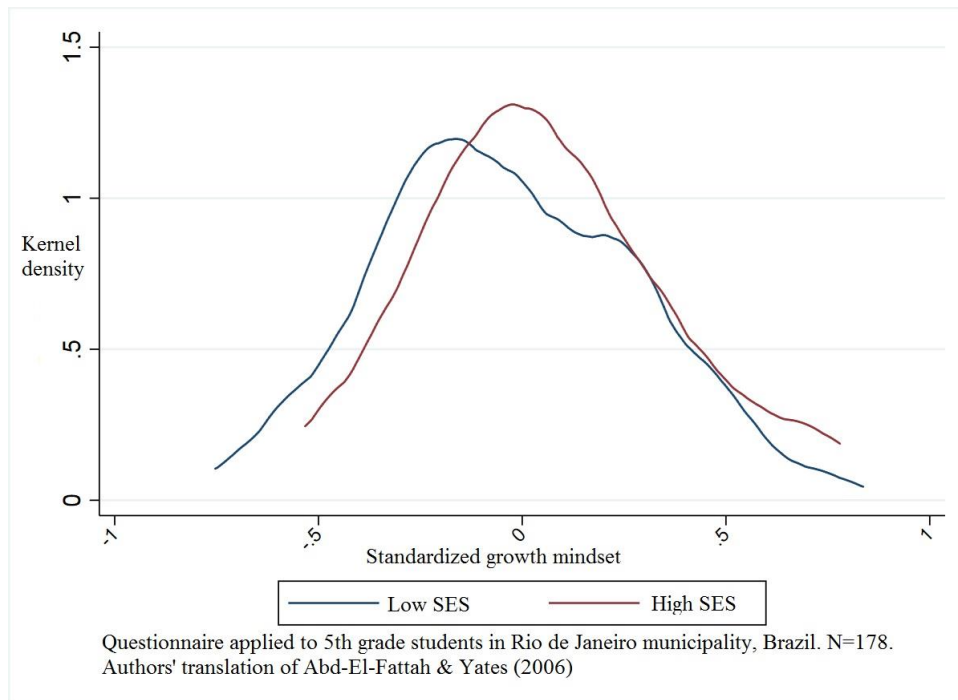


Figure 1

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