The Effects of Reducing Parent-Child Information Asymmetries on Students’ Academic Performance: Evidence from a Field Experiment
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Abstract

Information asymmetries between parents and children and lack of communication between schools and parents often create obstacles to parental involvement in children’s education. This paper addresses two specific questions:

(1) What is the effect of reducing information asymmetries on students’ performance?

(2) What is the mechanism that drives parents’ and students’ behavioral change?

A school in Shenzhen, China, provided relevant data. Parents of a sample of 250 students were selected to receive information (both good news and bad news) about students’ performance at school. Teachers of the treatment group sent a message about good news to their students every two weeks. The experiment continued for two semesters since the spring of 2019, and stopped in the spring of 2020 due to COVID-19. The Difference in Differences estimation method is used to evaluate the effects of the treatment. The results, however, are contrary to expectations and the literature: providing more feedback to parents is associated with lower test scores.

Empirical Methods

Identifying the Treatment Effect

\[ \text{SD.Score}_{ijkt} = \alpha_0 + \sum_m \alpha_m \text{Subject}_m + \beta_1 \text{DiD}_{j} + \gamma_1 \text{Treatment}_t \times \text{DiD}_{j} + \sum_s \delta_s \text{Semester}_s + \epsilon_{ijkt}. \]

Heterogeneous Effect on Each Grade

\[ \text{SD.Score}_{ijkt} = \alpha_0 + \beta_1 \text{DiD}_{j} + \sum_m \alpha_m \text{Subject}_m + \beta_1 \text{Grade}_k \times \text{DiD}_{j} + \sum_q \gamma_q \text{Subject}_m \times \text{Grade}_k + \sum_r \delta_r \text{Semester}_s + \epsilon_{ijkt}. \]

Parallel Trend Test

\[ \text{SD.Score}_{ijkt} = \theta_j + \sum_m \alpha_m \text{Subject}_m + \beta_1 \text{Semester}_s \times \text{Treatment}_t + \sum_l \delta_l \epsilon_{ijkt}. \]

Belief Bias

\[ \text{SD.Score}_{ijkt} = \sum_i \beta_i \text{Subject}_m + \sum_k \gamma_k \text{Belief Bias}_k \times \delta \text{Avg.Score}_{ijkt} + \epsilon_{ijkt}. \] (4)

Propensity Score Matching Method (Score Difference)

\[ \text{Score Difference} = \sum_i \beta_i \text{Subject}_m + \sum_k \gamma_k \text{Belief Bias}_k \times \delta \text{Avg.Score}_{ijkt} + \epsilon_{ijkt}. \] (5)

Conclusions

• Information provision might not be helpful for student academic performance, especially elementary school students. Future programs must be careful about implementing an information provision regime of this kind.

• Upward-biased beliefs (“AB” and “AC”) and correct but bad beliefs (“BB” and “CC”) cause significantly negative impact.

• Downward-biased beliefs (“BA” and “CA”) and correct but good beliefs (“AA”) have insignificant effect on scores.

• More potential explanation behind this negative result and ideas for future research: 1. Too much intervention could be counter-effective, especially for elementary education; 2. Elementary school students might not be mature enough to internalize the rewards and punishment; 3. Their parents might be relatively short-sighted when given too much feedback.

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References