

# Research Brief

## Australian Development Research Awards Scheme

2012 Funding Round

### **Improving educational outcomes of female and disadvantaged primary school students: randomized experiments to evaluate efficacy of greater parental involvement and supplementary teaching in Bangladesh**

Education is central to economic development and recognised as an important Goal of the UN Millennium Development Goals and Sustainable Development Goals. Many countries, including Bangladesh, have achieved impressive progress in primary school enrolment, including increased female enrolments, although much remains to be done. But, in terms of educational outcomes, these are severe problems with low completion and retention rates, and low literacy and numeracy skills even among those who complete primary education. This is particularly the case among females and students from disadvantaged households.

The project uses randomized field experiments, collaboratively conducted with education professionals, government officials, parents and teachers, to evaluate several low-cost intervention programs to improve educational outcomes of disadvantaged rural children in Bangladesh. We focus on two key interventions: (a) greater involvement of families in schooling through enhanced provision of information on their children's school performance; (b) increased teaching input, during outside school hours, targeting female and under-performing children.

Parents can potentially play an important role in their children's overall learning and education, both at home and at school. Enhancing parental involvement in children's education was a focal point of both President George W. Bush's No Child Left Behind Act and President Obama's Race to the Top initiative. These programs promoted parental engagement as a remedy for the United States' persistent socioeconomic and racial achievement gaps. There is evidence from developed countries that greater involvement of families in schooling is helpful for children's education. However, the educational reality in developing countries is fundamentally different, as many children are first-generation students whose parents are often unable to follow what happens at school. In this project, we conduct traditional, face-to-face meetings between teachers and parents, who are generally less involved in their children's educations. The intervention was designed to encourage parents to interact more with the school and the teachers, forming parent-teacher partnerships to enhance student achievement levels.

Our results show that involving parents in their children's education through monthly parent-teacher meetings has a significant positive impact on the children's school results. The short-term effects are largest for students with baseline test scores in the top third of the distribution, while lower-ranked students gain greater benefits from more frequent parent-teacher interactions over time. We also find that the treated students showed more positive attitudes and higher aspirations, spent more time studying, and got more help from family members in studying. Their behavior, as reported by both teachers and parents, also improved. We observe increased parental involvement in their children's studies. We see some improvements in teachers' and students' absenteeism, as well as changes in teachers' efforts in terms of pedagogical practices. We observe significant and positive spillover effects on students in other grades of the treated schools.

However, our experiments using parent-teacher meetings also indicate that some parents are unable to help their children even though they are informed about their children's progress.

Hence, we introduce another intervention to help children to read, write and solve their problems outside school hours. Accordingly, we conduct a large scale randomized controlled trials to document the effectiveness of a supplementary teaching program in which we provide additional teaching outside normal school hours for underperforming students in schools. Using comprehensive data collected over three years from more than 30,000 children and their families in about 360 schools, we investigate the effectiveness of the program on students' academic achievement, and whether it causes any changes in teachers', households' or students' behaviours.

In this project we examine (i) the effects of supplementary teaching on the students' test scores and (ii) the responses of teachers, students and parents to the program. We use comprehensive data on the behaviours of teachers, students and parents from classroom observations and a household survey. In contrast to the argument that contract teachers only perform better because of their motivation to obtain permanent employment, in our settings the supplementary teaching by private tutors did not reduce class sizes. We did not provide additional teachers for the classroom in schools. Instead, these teachers taught students outside schools. They provided additional extra two hours of teaching as private tutors for the selected students separately.

Our results suggest significant gains in students test scores- almost double than we found using parent-teacher meetings. The household survey found all parents in the treatment schools were more helpful during the exams and more willing to know their children's results. Interestingly, the non-treated students at the treatment schools also showed a significant increase in test scores. Parents of the students not targeted by our program but studying in the treatment schools also have spent more money on their children's education than their counterparts in the control schools. The households of the targeted students in the treatment schools did not substitute their income or effort. Thus, our two main results are (i) the extra teaching outside school hours improved the test scores of all students in the treatment schools significantly; and (ii) the program did not cause any substitution of effort or expenditure on the treated children's education, but did increase household involvement in education for all the students.

Finally, we address the gender gap in primary schools. Significant and persistent gender gaps in education are common across many developing countries. Improving the learning outcomes of female students, especially those with low abilities, is thus an important challenge not only for Bangladesh but also for much of the developing world. Actual progress in this respect, however, requires testing teaching practices that can be easily and inexpensively implemented in real settings. In our experiment, we focus on assessing the effectiveness of a simple teaching practice: the sorting of children into study groups of friends to work outside of class time. We randomly assign more than 6,000 students from 150 primary schools in Bangladesh to work on mathematics assignments in one of three settings: individually, in groups with random mates, or in groups with friends. At the beginning of the experiment, each student performs a math test to measure his or her cognitive ability. The student is then allocated to work on the math assignment in one of the three settings. The results of our experiment show that, regardless of their initial ability level, the gain (or loss) in math scores for male students is not affected by whether they study by themselves, with random peers, or with friends. However, for female students, there is a significant and positive gain in math scores for the low-ability students who study in groups with friends.