Improving Education Finance Equity in Belize through Formula Funding

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Improving Education Finance Equity in Belize through Formula Funding

Emma Näslund-Hadley
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Belize is a small country of 420,000 people with about 22,000 high school students, enrolled in 52 secondary schools. Seventy five percent of secondary schools are privately owned, and they account for about 60% of secondary enrollment, while government schools cover another 39%. Only 4% of enrollment is truly private without subsidies. Before the educational financial reform of 2010, the government gave schools block grants to private schools to cover70 percent of teacher salaries and 100% of tuition fees, while paying 100% of all expenditures to public schools. This input-based funding resulted in gross inequities, where schools in more affluent areas captured a disproportionate share of public funds by employing more experienced and expensive teachers. Also, urban schools with more diverse curricula, and more teachers, captured more funding that public schools in poor areas with a basic curriculum and fewer teachers.

In 2011 the government designed and implemented a funding formula based on enrolment, poverty, and the proportion of disadvantaged students in school, with the goal of improving financial equity. Under the formula, some schools that used to receive above average funding would get their budget reduced. These schools were designated as *Above Average Funding Schools* and their grant amount was left untouched. Schools that would receive more funding under the formula were labeled *Below Average Funding Schools,* and the gap between their past funding and the funding determined by the formula would be closed incrementally over a period of seven years.

The funding formula calculate the grants to school on a per student basis. The monthly amount to be received by each secondary school using government funds would be calculated

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as follows[1]:

Monthly Grant Allocation[2] = 0.93861 * 1,440 * Enrollment + 0.93861 * 1.1 * 1,440 * (SAN + SEN) * Enrollment + Performance Incentive

where, the 0.93 coefficient is the average cost per student credit, multiplied by the 1,440 school credits per year per student; 1.1 is a compensatory premium for socioeconomic conditions and academic need; SAN is an index of academic needs approximated by the percentage of students with a Primary School Examination (PSE) score of less than 60%, and SEN is an index of Socio-Economic Need approximated by the poverty rate for the district where the school is located. The performance incentive is a bonus for good school performance that has yet to be defined and activated.

Per student grants grew after the application of the formula, even for schools that were initially classified as Above Average Funding Schools due to two system-wide salary increases, 6% in 2014 and 6% in 2015. However, growth in per student grants was higher for Below Average Funding Schools, which was the intent in the funding formula.[3] In 2011, close to 53% of students in Below Average Funding Schools had a PSE score lower than 60%. By 2016 the percentage of low PSE scorers had decreased to almost 34%. The overall effect of the compensation grant has been positive and significant for the past five years. By 2016 the percent of the per student grant payment that accrued to the compensation grant to Below Average Funding Schools ranged between 35% and 59% of the grant. In some schools, the proportion of low PSE scorers in the student body was more than 80%.[4]

Most of the changes in compensation were due to the retention of students in academic need, since the poverty level of the six districts in Belize remained constant in the formula. On average, about 47% of total grant funding to Below Average Funding Schools accrued to the compensation component of the funding formula. The percentage of the grant payment coming from the compensation component for these schools ranged from 35% to 59% of the monthly grant. However, this component of the formula has a built-in disincentive to schools: as the percent of students with low PSE scores decreases, grant funding would also decrease. This is an issue that needs to be addressed by the government by defining and activating the

[1]The formula, its rationale, and the rules for its application, are described in more detail in: Näslund-Hadley, Emma, and Gustavo Arcia. 2018. "Improving the Equity of Education Funding: The Reform of Secondary Education Finance in Belize." Background Paper. Washington DC: Inter-American Development Bank. https://www.academia.edu/44695447/Belizes_Formula_for_Financial_Equity_in_Secondary_Education

[2]Received over 12 months in the year.

[3]Näslund-Hadley and Arcia, 2018. Op. Cit.

[4]In Above Average Funding Schools, the range in the percentage of low PSE scorers was wider, with some schools showing less than 1% of SAN students, and some with more than 60%. However, because their grant payment was already above the average set by the funding formula, their per student grant did not include a compensation component.

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performance incentive.

The Effect of Formula Funding on Financial Equity

The seven-year grace period has elapsed and now it is worth asking if the new funding formula, has resulted in more learning equity. Are secondary schools with higher socioeconomic status still capturing larger per student grants or vice versa? Is there an impact on learning? To answer these questions, we explored the relationship between school grants and the Index of Social Status of the families of secondary school students.[5] This index combines the level of formal education of parents, with their occupational status of the main family members. The occupational status is highly correlated with the transition from physical labor to occupations requiring high levels of formal education. The index has a minimum value of 8 and a maximum of 66. For Belize, the Index ranged from 13.4 to 42.9. In a representative sample of families in 23 secondary schools, the average value of Index was less than 21 points, in 15 schools, between 21 and 30 points in 7 schools, and one school scored above 40 points.

Fig. 1 shows the relationship between the grant payment amount to all secondary schools, and the Index of Social Status of the families of secondary school students. Fig. 1 shows two curves, each with their respective 95% confidence interval. The lower, flatter curve represents the association between the average monthly grant per student received by the school in 2010 (prior to the implementation of the funding formula), and the school's average Index of Social Status. In 2010, as the graph shows, there was practically no trend in the allocation of grants in relation to social status. This means that inequality was high, as schools with families with a high index had the same chances of getting the same amount of public funding as a school with families with a low index.

By 2016 the situation had changed. Schools with a low social index tend to receive higher per student grants than schools with a higher index of social status. This positive discrimination shows clearly between 2010 and 2016 the funding formula has had a significant positive impact of financial equity. These results are statistically significant. In 2016 the Social Index was negatively and significantly correlated with the per student grant amount, indicating that at higher grant amounts per student, there was a correspondingly lower Index of Social Status. In contrast, in 2010 the regression coefficient was not different from zero, indicating no relationship between these two variables.

[5]The Index of Social Status was calculated using the simplified Barratt method (2102), with the author's permission. See http://socialclassoncampus.blogspot.com/2012/06/barratt-simplified-measure-of-social.html.

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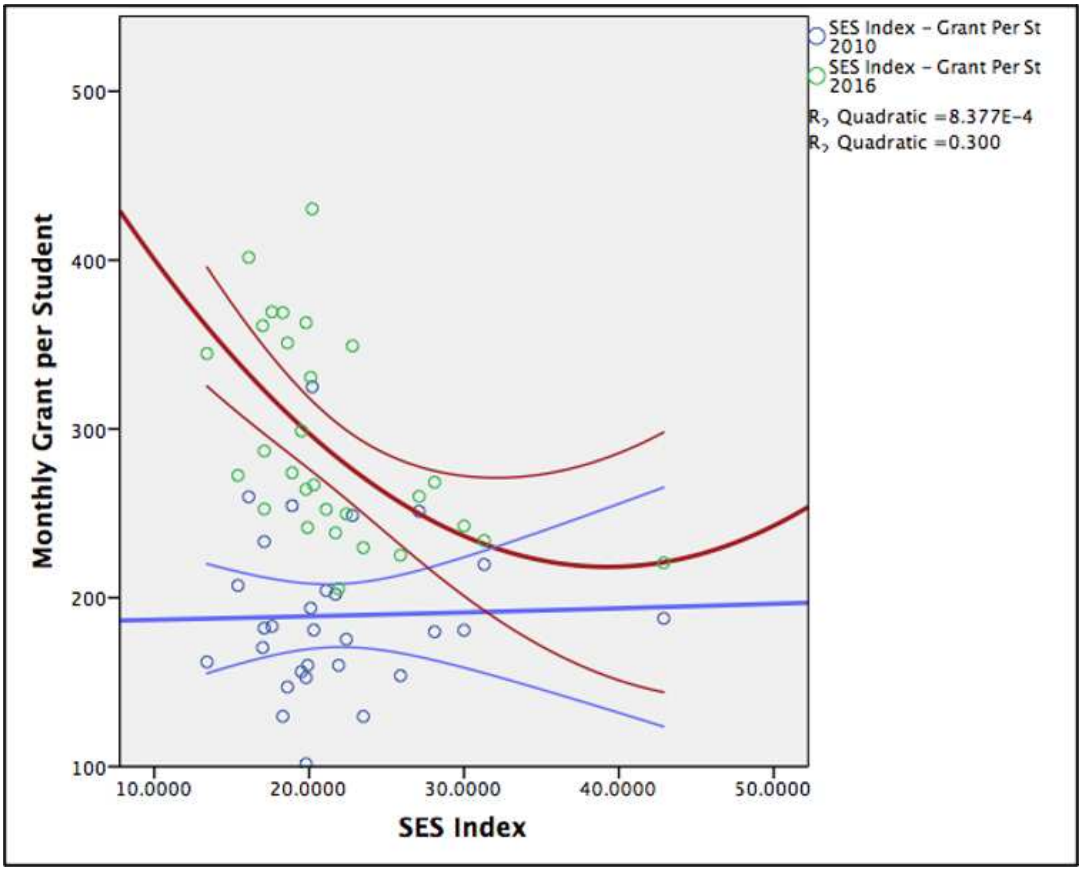

Fig. 1. Monthly Per Student Grants for 2010 and 2016 in relation to the School's Index of Socioeconomic Status. Source: Estimated by the authors with data provided by the Policy and Planning Unit, MOEY.

Conclusions

The performance of the funding formula devised by the Belizean Government seems to have gone as planned. In 2010 poorer schools received about 17 percent lower per student funding than more affluent schools. By 2016 the difference had shrunk to 6%. This difference would have been even smaller, but in 2014 and 2015 the Government decreed an across-the-board increase in teacher salaries. Still, the funding formula had a positive impact on equity through the compensation component of the formula. This compensation component gives school extra funding if they retain students at academic and economic risk. By 2016 the compensation component of the funding formula account for 35% to 59% of the per student grant received

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by schools. Now the challenge for the government is to ensure that a successful reduction in the percent of underperforming students in the PSE test is compensated by increases in funding though the Performance Incentive component.

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