Education in the Era of Rising Inequality: Are Schools Becoming the Great(er) Equalizer?
By Joseph J. Merry

Joseph Merry is a PhD candidate in Sociology at The Ohio State University. Current research focuses on the role of schools in the context of rising economic inequality as well as the use of seasonally collected education data to better understand school effectiveness through a clearer separation of school and outside-of-school influences. The Kingsbury Data Award provides this research agenda with a well-suited dataset and the ability to broaden the scope of previous seasonally-based education research.

The evidence is mounting that schools play a compensatory role when it comes to socioeconomic-based learning inequalities. In other words, if it were not for schools, learning inequalities would be considerably worse. In this light, schools serve as an important equalizing institution within a broader social system. But, what happens when the broader context changes? As economic inequality in the United States continues to rise, what does this mean for the role of schools in society?

Three distinct scenarios are possible: 1) The degree to which schools compensate for learning inequalities is the same over time, or schools consistently compensate for a similar portion of broader inequality regardless of the changing context. 2) Schools are compensating less, a scenario indicating that schools' capacity to equalize disparate economic situations becomes compromised as inequality crosses a certain threshold. 3) Schools are compensating more, suggesting that schools are taking on an increasingly important role as they become even more equalizing in more unequal settings.

To test these competing explanations I utilize NWEA data to compare a sample of 421 schools at two points in time (the 2002-2003 school year and the 2011-2012 school year). In this way, I am able to analyze the compensatory effects of the same schools over time, as the absolute and relative social conditions outside of school have worsened. To first document the broader societal change that has occurred during this decade I note that the U.S. Gini coefficient for income inequality has steadily increased even within this relatively brief period of time (from 0.46 to 0.48) (US Census Bureau 2012). In other words, the students progressing through school in 2011-2012 were born into a social context characterized by a higher rate of economic inequality than their counterparts born a decade earlier. Furthermore, the number of students who qualify for free/reduced lunch has increased by 32% (5.7 million children) during this timeframe (Southern Education Foundation 2013). These trends have important implications regarding the resources available to families as they seek to secure educational advantages for their children. More affluent families are able to invest more in their children's education from a very young age and as the gap between the rich and the poor widens, the educational advantages that families pass on to their children will also become more disparate (Reardon 2011). It is evident, therefore, that the social conditions outside of school are becoming more unequal. But, what does this mean for the role of schools? How are schools responding to these deepening challenges?

Data

I use MAP reading assessment data to better understand the relationship between schools and broader inequality. The main analysis for this study involves the calculation of seasonal learning estimates by socioeconomic status. These estimates of SES learning inequalities are based on a school-level variable for the percentage of students in the school who are eligible for free or reduced lunch (FRL). Comparisons are made between those schools reporting the highest proportions of eligible students versus those schools reporting the lowest amount of eligible students. To gain a better understanding of how these inequalities change throughout the distribution, I examine the differences between the upper and lower deciles and quintiles of FRL eligibility.

The final sample size is the result of the selection criteria that all schools included in analysis are represented at both time points (2002-2003 and 2011-2012) by at least 25 students and that these schools assess the same grade-levels at each time point. For the 2002-2003 school year (Cohort 1), analysis is performed on 85,115 students in 421 schools between 2nd and 7th grade. For the 2011-2012 school year (Cohort 2), I examine the exact same 421 schools which now include data for 86,195 students in the same grade levels. Therefore, it should be noted that I do not perform a longitudinal analysis of children progressing through school, but rather a repeated cross-sectional study of the same schools over time.

Analytic Strategy

In order to assess how this sample of 421 schools matters over time, I first calculate seasonally-based learning estimates for students' school-year learning and summer learning. This approach allows for a clearer separation of school and 'non-school' influences. Essentially, the summer estimates can be thought of as students' rates of learning in the absence of school (or when children are exposed to predominantly home and neighborhood influences). Next, I construct two counterfactual measures to help gauge the contribution that schools make for student learning.

First, the 'Summer Counterfactual' estimates what learning would look like (by grade level) if students had progressed each full year at a 'summer pace', comprised of the average of monthly learning which takes place in the summer before and after a given grade level[1]. This average summer learning rate (MAP units gained/lost per summer month) is multiplied by a factor of twelve to approximate a full year of learning in the absence of school. Consecutive grade-level estimates are combined to show what learning inequalities would like if children did not attend school from 2nd to 7th grade, given the initial observed gap during the fall of 2nd grade. The next estimate, the 'All-School Counterfactual', is the cumulative progression of student's monthly learning rates had they attended school year-round, for twelve months. These two counterfactual scenarios are then compared to a baseline of observed SES differences (the real world estimates of MAP scores with a starting point of Fall 2nd grade scores and an ending point of 7th grade spring scores). In short, the three comparison groups are 1) the projected SES learning gap in a world without schools 2) the projected SES learning gap in a world with only year-round schools and 3) the actual SES learning gap.

Findings

To begin, I document the observed difference in MAP scores[2] at the start of 2nd grade in Cohort 1. For example, there is a 6.27 point gap between High SES schools and Low SES schools when comparing upper and lower quintiles (80/20 Gap) of FRL eligibility. As expected, this gap increases when utilizing the more extreme measure of upper and lower deciles (90/10 Gap) for the FRL criteria (now an initial gap of 8.70). Next, I note that these initial differences in 2nd grade are larger in Cohort 2 (now 11.39 for 80/20 gap and 15.92 for the 90/10 gap). I argue that this growth in the early gap over time reflects the detrimental changes in the social context outside of school (increases in both relative and absolute inequality). If the conditions outside of school are becoming more challenging then it is no surprise that SES learning gaps at early grade levels are more apparent now than ten years prior.

Now, turning to the results from the 'All-School' counterfactual, I find that if children attended year-round school from 2nd to 7th grade, the SES learning gap would narrow at all points in the FRL distribution. That is, compared to the observed 7th grade gap, the projected 7th grade gap in the 'All-School' counterfactual is smaller. This is indicated in the Table 1 below in the column for 'Factor Change', which shows the size and direction of change from the observed to the projected gap 7th grade gap. Interestingly, in Cohort 2 the ability of schools to temper these inequalities is slightly diminished (factor change results are all still negative, but the magnitude has decreased relative to Cohort 1). In other words, in 2002, school year learning reduced the SES gap more effectively than in 2012. This pattern implies that the equalizing effect of schools may be compromised by growing economic inequality in society at large. The estimates in the 'Summer Counterfactual' also follow this pattern – while the summer estimates all reveal that SES learning gaps would be substantially larger in a world without schools (factor change results are all positive), this is true to a lesser extent in 2012 than it was a decade earlier. Furthermore, it appears that school's compensatory abilities are most compromised under the more extreme SES comparisons. While the 60/40 FRL comparison shows a smaller factor change in Cohort 2 than in Cohort 1, the more significant declines in schools' equalizing ability become apparent in comparisons of the most advantaged and most disadvantaged schools (80/20 Gap and 90/10 Gap).

Recommendations

The results presented here show strong evidence that schools help to reduce learning gaps associated with SES, and that it is during the summer months that learning disparities are exacerbated. Over time however, this study suggests that schools may be compensating for broader inequalities to a lesser extent now than they were previously. As social conditions outside of school worsen, there may only be so much that schools can do to turn the tide – especially if learning disparities are already well-established before children enter formal schooling. The recommendations of this study, therefore, call for a broader approach to educational reform. Rather than focusing our efforts solely on school-level reform (teacher performance, curriculum changes, classroom size, etc.), we need to think of educational outcomes as they are connected to more comprehensive social policies, especially those aimed at early childhood development (President Obama's initiative for universal preschool is a step in the right direction). The results of this study indicate that this type of broader reform is needed now more than ever. If schools' ability to compensate for society's growing inequalities is being compromised, then other institutions and policy mechanisms must intervene to curb the detrimental effects of family's diverging economic situations.

Notes

[1] This approach assumes that summer learning rates would remain constant for an entire calendar year and that students could theoretically lose their accumulated reading skills due to 'summer setback'. However, the main objective of this study is to arrive at a hypothetical projection of the size of the SES-based learning gap had children not attended school. In other words, I allow the summer counterfactual estimates to show continued linear decline in student's test scores, though this scenario could not be interpreted literally, because I am interested foremost in the relative size of this projected gap.

[2] Estimates in this study are based on observed growth scores. NWEA also provides normative growth scores which account for observed growth relative to normative grade-level growth distributions. Preliminary analyses comparing these two metrics reveal that the substantive results remain unchanged.

Table 1: SES Learning Gap - Counterfactual Comparisons of all school (2nd-7th) vs. all summer (2nd-7th)
[factor change calculated as change from observed 7th grade gap]

	Observed		**All School**		**All Summer**	
Cohort 1	2nd Grade Gap	7th Grade Gap	7th Grade Gap	Factor Change	7th Grade Gap	Factor Change
FRL 60/40 Gap	4.59	5.21	2.28	-.56	16.05	2.08
FRL 80/20 Gap	6.27	7.15	2.47	-.65	22.25	2.11
FRL 90/10 Gap	8.70	9.68	1.35	-.86	32.16	2.32
Cohort 2						
FRL 60/40 Gap	7.56	6.75	5.36	-.21	18.61	1.76
FRL 80/20 Gap	11.39	10.78	6.96	-.35	21.78	1.02
FRL 90/10 Gap	15.92	13.84	11.41	-.18	28.61	1.07

References

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