

Why are children from disadvantaged families left behind? The impacts of families, schools, and education systems on students' achievement

Anne Christine Holtmann

Introduction and research questions

“If you want the American dream, go to Finland” suggests Fleetwood (2013). Giving children the opportunity to succeed in education, regardless of their family background, is part of the American Dream. However, in reality, socioeconomically disadvantaged children are less likely to succeed in school. This holds true for all countries. However, US children from socioeconomically disadvantaged families are much more likely to perform poorly in reading or mathematics than disadvantaged children in Finland. This has been repeatedly shown by international student assessments such as the PISA study.

Why do children from socioeconomically disadvantaged families perform worse than their peers from better-off families? Why more so in the USA than in Finland? There are three different hypotheses on that. The most common hypothesis is that schools and education systems shape students' performance. For example, Finland stands out for a very egalitarian education system with very low levels of inequality between schools (OECD, 2011; Sahlberg, 2015). Schools could serve as equalizers, providing a common learning experience for all students independently of their family backgrounds (Mann, 1848). In the USA, in contrast, students from disadvantaged families generally attend disadvantaged schools in terms of facilities, teachers, and peers (Kozol, 1991; Owens, Reardon, & Jencks, 2016). Therefore, inequalities between schools could contribute to inequalities in educational opportunities. In my thesis, I investigated whether schools are better able to improve educational opportunities for socioeconomically disadvantaged students when they are integrated along socioeconomic lines.

While international student assessment programs have fueled debates about school reforms and different education systems, they may have directed the focus of attention away from other explanations. First, students' achievement may be the outcome of what happens outside schools (Alexander, Entwisle, & Olson, 2007; Downey, von Hippel, & Broh, 2004; Heyns, 1978). This would mean that socioeconomic inequality between families and not education policy and schools are at the root of the problem (Berliner, 2013; Merry, 2013; Solga, 2012, 2014). For example, Finland not only has a very egalitarian education system, but also has very low levels of income inequality and child poverty.

Second, a lack of investigation of *when* educational inequalities develop could also result in overstating the effects of schools and education systems. For example, disadvantaged children might already lack skills when they enter school (Bradbury, Corak, Waldfogel, & Washbrook, 2015; Heckman, 2006; Merry, 2013). This could indicate that schools only have limited impacts on educational inequality.

In my thesis, I ask whether socioeconomically integrated schools and education systems can compensate for a disadvantaged family environment, or if - alternatively - inequalities in families' resources and behaviors or already existing achievement gaps at school entry may be the main reasons for inequality in educational achievements. Cross-sectional international student assessments do not allow us to separate these effects of school, families and children's own skills. Therefore, they do not directly indicate how students' performance and educational opportunities can be improved. As education researcher Jack Buckley said: "That's like taking a thermometer to explain why it is cold outside" (cited in Layton (2013)).

In my research design, I paid special attention to separate the effect of schools from the effect of families and children's competencies at the time of school entry. To take into account children's skills at school entry, I started by investigating *when* low-SES children are left behind by using longitudinal data for the USA. To investigate *why* they fall behind, I compared summer and school year learning and investigated parents' educational activities with their children. To understand whether schooling has a more equalizing effect in a more egalitarian education system, I compared summer and school year learning in the United States and Finland. To test whether socioeconomically disadvantaged children benefit from socioeconomically integrated education systems whereas more advantaged students suffer from these systems, I investigated how changes in the socioeconomic segregation of education systems affect students from different family backgrounds in 35 countries. In the following, I will give a brief overview over the main findings and arguments.

Low-SES children don't lack the brains

Do disadvantaged children lack skills when they enter school? There could be two reasons for this: First, achievement gaps may have already developed in early childhood and remain relatively unchanged thereafter (Bradbury, Corak, Waldfogel, & Washbrook, 2011; Merry, 2013). Second, achievement gaps may be largely the outcome of genetically inherited differences and may not be attributable to family or school conditions (Herrnstein & Murray, 1994; Marks, 2014).

To answer the question of when SES gaps develop, I analyzed children's cognitive development over the course of their schooling from the ages of 5 to 14 years in the United States using the ECLS-K: 1999 data. I paid special attention to minimize regression-to-the-mean.

The analyses confirm that, on average, disadvantaged children have lower skills when entering school than children from more advantaged families. However, there are disadvantaged children who begin school with high test scores, and even these high-performing children fall behind their advantaged peers during elementary and middle school. The fact that this group of disadvantaged children initially performs well tells us that they are not genetically less capable. Something else other than ability must cause them to fall behind.

The notion that socioeconomically disadvantaged children do not simply lack cognitive skills is further supported by my finding that initially poorly performing children from privileged families catch up with their peers over their school careers. Consequently, low cognitive abilities at school entry do not necessarily mean low performance levels throughout students' school careers.

Too much hope in schools while underestimating families

The question arising is *why* students from disadvantaged families fall behind. Are schools to blame or families? Answering this question is not easy, because it is not clear whether a child performs well in a test because of the high level of support provided by his or her parents or because he/she attends a good school, or both. To distinguish the effect of families and schools, I compared learning during the school year, when families and schools are the driving force in students' learning, to learning during the summer vacations, when families alone play the crucial role. I find that achievement gaps grow more strongly during the summer holidays than during the school year. This supports that the main driving force of educational inequalities are families.

Even though the comparison of summer learning and school-year learning suggests that achievement gaps would grow even more without the influence of schools, the equalizing effect of schooling in the USA is weak. In addition, I find that socioeconomically disadvantaged students learn more in schools with more advantaged children. Because the effect only arises during the school year and not during the summer holidays, this indicates an effect of better schools. Even though the results show that low-SES students benefit from attending schools with high-SES students, these students tend to live in disadvantaged neighborhoods and attend schools with other low-SES students.

In Finland, in contrast, disadvantaged and advantaged students go to the same schools. So I asked whether schooling is more equalizing in Finland than it is in the USA. The United States not only have very unequal schools. The country is also characterized by a high level of inequality between families and a high child poverty rate. Finland, by contrast, not only has a very egalitarian education system, but also is the Finnish society egalitarian and the country characterized by a generous welfare state with a universal health care system and a low rate of child poverty. Therefore, the effect of education systems and schools is often overestimated in comparative research.

To separate the contributions of families and schools in Finland and the United States, I once again used a comparison of summer learning and school-year learning. I found that during the summer holidays, SES achievement gaps increased in the United States, whereas they remained more stable in Finland. Because summer learning is influenced exclusively by non-school factors, this suggests that the lower degree of socioeconomic inequalities between families in Finland contributes to high educational equality in that country.

Socioeconomically integrated schools and education systems are better able to compensate for a disadvantaged family environment.

Nonetheless, Finnish students with less educated parents catch up during the school year, whereas they fall behind in the United States. This finding suggests that schools in Finland help disadvantaged students catch up, unlike those in the United States. This may be the case because the socioeconomically integrated

Finnish school system gives all children access to high-quality schools with higher quality teaching, peers with higher aspirations, and a school climate that is more conducive to better performance.

Formally, both the United States and Finland have comprehensive education systems in which students learn together in one school type. Most studies that have compared education systems have considered only formal differentiation (Van de Werfhorst & Mijs, 2010). However, the USA show that even education systems that are comprehensive at a formal level can be very unequal in practice. I therefore proposed the extent to which children from different socioeconomic backgrounds attend the same or different schools as an indicator of inequalities between schools within a country. The advantage of using this indicator is that it not only captures inequalities between schools that are caused by formal differentiation, but it also captures more hidden forms of differentiation such as private schools or residential segregation.

To investigate the effect of socioeconomic segregation across countries, I performed a within-country analysis, investigating how changes in the socioeconomic segregation of an education system affected the achievements of high- and low-SES students. Using 5 waves of PISA data covering 35 countries over nearly a decade, I found that disadvantaged students perform better when an education system becomes more socioeconomically integrated over time.

School conditions are more important for students from low-SES families

Contrary to the fears of many middle and upper class parents, their children do not learn less when an education system becomes more socioeconomically integrated. In fact, children from more privileged families perform well in all education systems, regardless of whether the education system has changed and become more socioeconomically segregated or mixed. One reason for this finding could be that more privileged families are more successful avoiding disadvantaged schools. However, I found that children from middle and upper class family backgrounds do not learn less when they attend more diverse schools in terms of the socioeconomic composition of their students.

This also means that there is no trade-off between equality of opportunity and excellence in education. Because children from privileged families do not learn less in a more integrated education system and disadvantaged children learn more in such systems, both equality of opportunity and excellence can be simultaneously achieved.

In sum, advantaged parents are able to ensure that their children perform well in any kind of education system. By contrast, the performance of disadvantaged children depends more on school conditions. These findings are in line with those of other studies conducted on formal differentiation (Hanushek & Woessmann, 2006; Horn, 2009; Jakubowski, Patrinos, Porta, & Wiśniewski, 2010; Kerr, Pekkarinen, & Uusitalo, 2013; Le Donn , 2014; Van de Werfhorst, 2013; Van de Werfhorst & Mijs, 2010).

Conclusion

To sum up, schools cannot fully compensate for inequalities in non-school resources and learning environments. Yet socioeconomically integrated schools can still provide opportunities for children from disadvantaged families. Even though students only spend a small proportion of their waking hours in

school, this time is especially important for children from disadvantaged families. For these children who are not surrounded by books, do not learn an instrument in the afternoons, and do not play with science kits at home, schools can open up the worlds of literature, music, and science.

Figure 1: Schools opening up the worlds of literature, music, and science¹



Bibliography

- Alexander, K. L., Entwisle, D. R., & Olson, L. S. (2007). Summer learning and its implications: insights from the Beginning School Study. *New Directions for Youth Development*(114), 11-32. doi:10.1002/yd.210
- Berliner, D. (2013). Effects of Inequality and Poverty vs. Teachers and Schooling on America's Youth. *Teachers College Record*, 115(12).
- Bradbury, B., Corak, M., Waldfogel, J., & Washbrook, E. (2011). *Inequality during the Early Years: Child Outcomes and Readiness to Learn in Australia, Canada, United Kingdom, and United States*. Retrieved from Bonn:
- Bradbury, B., Corak, M., Waldfogel, J., & Washbrook, E. (2015). *Too many children left behind. The US achievement gap in comparative perspective*. New York: Russell Sage Foundation.
- Downey, D. B., von Hippel, P. T., & Broh, B. A. (2004). Are Schools the Great Equalizer? Cognitive Inequality during the Summer Months and the School Year. *American Sociological Review*, 69(5), 613-635. doi:10.1177/000312240406900501
- Fleetwood, B. (2013). If You Want the American Dream, Go to Finland. *Washington Monthly*.

¹ Illustration by Paul Zwolak.

- Hanushek, E. A., & Woessmann, L. (2006). Does educational tracking affect performance and inequality? Difference-in-difference evidence across countries. *The Economic Journal*, 116, 63-76.
- Heckman, J. J. (2006). Skill formation and the economics of investing in disadvantaged children. *Science*, 312(5782), 1900-1902. doi:10.1126/science.1128898
- Herrnstein, R. J., & Murray, C. (1994). *The Bell Curve: Intelligence and Class Structure in American Life*. New York: Free Press.
- Heyns, B. (1978). *Summer learning and the effects of schooling*. New York: Academic Press.
- Horn, D. (2009). Age of selection counts: a cross-country analysis of educational institutions. *Educational Research and Evaluation*, 15(4), 343-366. doi:10.1080/13803610903087011
- Jakubowski, M., Patrinos, H. A., Porta, E. E., & Wiśniewski, J. (2010). The Impact of the 1999 Educational Reform in Poland. *Policy Research Working Paper 5263*.
- Kerr, S. P., Pekkarinen, T., & Uusitalo, R. (2013). School Tracking and Development of Cognitive Skills. *Journal of Labor Economics*, 31(3), 577-602.
- Kozol, J. (1991). *Savage Inequalities: Children in America's Schools*: Harper Perennial.
- Layton, L. (2013, December 3). U.S. students lag around average on international science, math and reading test. *The Washington Post*. Retrieved from http://www.washingtonpost.com/local/education/us-students-lag-around-average-on-international-science-math-and-reading-test/2013/12/02/2e510f26-5b92-11e3-a49b-90a0e156254b_story.html
- Le Donné, N. (2014). European Variations in Socioeconomic Inequalities in Students' Cognitive Achievement: The Role of Educational Policies. *European Sociological Review*, 30(3), 329-343. doi:10.1093/esr/jcu040
- Mann, H. (1848). *Twelfth Annual Report to the Secretary of the Massachusetts State Board of Education*. Retrieved from
- Marks, G. S. (2014). *Education, Social Background and Cognitive Ability. The decline of the social*: Routledge.
- Merry, J. J. (2013). Tracing the U.S. Deficit in PISA Reading Skills to Early Childhood: Evidence from the United States and Canada. *Sociology of Education*, 86(3), 234-252. doi:10.1177/0038040712472913
- OECD. (2011). *Lessons from PISA for the United States. Strong Performers and Successful Reformers in Education* Retrieved from <http://dx.doi.org/10.1787/9789264096660-en>
- Owens, A., Reardon, S. F., & Jencks, C. (2016). Income Segregation Between Schools and School Districts. *American Educational Research Journal*, 53(4), 1159-1197.
- Sahlberg, P. (2015). *Finnish Lessons 2.0. What can the world learn from education change in Finland* (T. C. Press Ed. Second Edition ed.).
- Solga, H. (2012). Bildung und materielle Ungleichheiten. Der investive Sozialstaat auf dem Prüfstand. In R. Becker & H. Solga (Eds.), *Soziologische Bildungsforschung* (pp. 459-487.). Wiesbaden: Springer VS.
- Solga, H. (2014). Education, economic inequality and the promises of the social investment state. *Socio-Economic Review*, 12(2), 269-297. doi:10.1093/ser/mwu014
- Van de Werfhorst, H. G. (2013). *Educational tracking and social inequality in mathematics achievement in comparative perspective: Two difference-in-difference designs*. Retrieved from Amsterdam:
- Van de Werfhorst, H. G., & Mijs, J. J. B. (2010). Achievement Inequality and the Institutional Structure of Educational Systems: A Comparative Perspective. *Annual Review of Sociology*, 36(1), 407-428. doi:10.1146/annurev.soc.012809.102538