

Children's Education Amidst the Coronavirus Pandemic: an Economic Perspective



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An Unprecedented Challenge

Among the unique challenges of the ongoing coronavirus pandemic are the repercussions of the crisis for families, for children, and for children's education. According to UNESCO, schools are currently closed country-wide in 143 countries, affecting more than a billion children. Most other countries have imposed partial schools closures, affecting hundreds of millions more.

The challenges posed by the impact of the coronavirus epidemic on children's education are historically unprecedented. Economic crises usually leave children's education untouched. Earlier pandemics, such as the "Spanish flu" of 1918, took place before primary and secondary education became the norm for most children around the world.

School closures are a primary reason for why the current crisis is a larger economic shock than other recent economic downturns, including the international financial crisis of 2007-2009. There are two main channels through which school closures have economic repercussions, one connected to parents and one to the affected children.

Childcare Needs & Parents' Labor Supply

The impact on parents occurs because schools closures have massively increased parents' childcare needs. With most children at home, someone has to take care of them and assist with their schooling. In most cases, this is a job for the parents; under stay-at-home orders and social distancing requirements during the pandemic, alternatives such as help from nannies, neighbors, or grandparents are usually out of reach.

Just a couple of generations ago, children being home full-time would not have caused many difficulties, because the traditional division of labor of a husband as a main breadwinner and a wife as a stay-at-home parent was the norm. But in the decades since, a major economic trend has been a sharp rise in women's labor force participation. Today, most parents in most advanced economies are in the formal labor force. Indeed, in December 2019 women made up the majority of the labor force in the United States for the first time.

With most parents working, school closures present difficult choices for families. In some cases, one or both parents can work from home during the crisis and watch their children simultaneously. However, parents of small children, those with jobs that cannot be

done from home, and many single parents are unable to continue working while children are out of school. A sizeable part of the massive drop in labor supply during the coronavirus recession is due to parents reducing hours or quitting jobs because childcare needs conflict with being in the labor force.

This effect on parents' ability to work deepens the recession. Moreover, it strongly affects families that already start out in an economically vulnerable position, such as single mothers with small children. How to soften this economic blow is a central challenge for economic policy in the crisis.

School Closures & Children's Education

Beyond parents, closing schools naturally affects children who now forgo classroom instruction and socializing with their peers. Unlike reductions in labor supply of their parents, the impact on children does not show up in immediate economic measurements. Children do not work, and whether they are at home or at school does not make a difference for gross domestic product (GDP). Nevertheless, it is likely that the ultimate economic impact on children will far exceed today's income losses of the parents who have to watch them.

The reason why the economic impact on children is potentially large is that modern economies run on human capital. The future earnings of today's children will in large part be a function of their knowledge and skills, the foundations of which are laid in school. If closing schools has a negative impact on children's learning, their future economic prospects will be diminished. Learning is cumulative, and experience shows that learning losses, once incurred, are difficult or impossible to compensate for later on. Unlike the effect on parents' labor supply, the economic impact on children will not vanish once the pandemic recedes, but will be felt through their working lives.

To get an impression of the magnitudes involved, consider that estimates of the labor market return to an additional year of education in advanced economies are around 10%. For example, the earnings of a worker with two years of college education (an "associate" degree typically awarded by community colleges in the United States) are about 20% higher than those of a worker with only high school education.

Consider the case of a teenager currently in high school who was planning to attend community college, but falls behind in learning while at home during the pandemic. If this learning loss closes the path to college and the student only completes high school, this

student's lifetime earnings will decrease by about 20%. What is different from the effect of the pandemic on workers already in the labor market is persistence: whereas most workers who lose jobs in a recession ultimately find new employment, the loss of education for children is potentially permanent, leading to much larger cumulative losses.

Can Parents Step In & Provide Education at Home?

The example illustrates the potentially devastating economic impact of prolonged school closures on children and their future economic prospects. Nevertheless, learning gaps are not a foregone conclusion. Most schools offer some sort of remote or online learning program during the pandemic. If parents step in as temporary teachers and support their children's education, it may be possible to minimize learning losses. Thus, a key question for the ultimate impact of the pandemic on children is how successful parents can be in organizing schooling for their children at home.

We already know that, in principle, home schooling can be successful. In the US there is now a sizeable home schooling movement. Parents deliberately take their children out of school and educate them at home, often driven by religious motives. An industry has sprung up that provides instructional materials for home schooling and offers support and advice to parents. Home schooling works well for many of these families: on average, home-schooled kids do at least as well on standardized tests as kids in regular school, and they are also likely to successfully attend college.

Unfortunately, it is unlikely that the experiences of the small share of families who home-school voluntarily are applicable to a situation where all parents are forced into a switch to home schooling. Most parents who voluntarily forgo public schooling are highly motivated and have the means, the ability, and the desire to take charge of their children's education. Conversely, in the case of forced home schooling for all parents during a pandemic, there are good reasons

to think that success is going to be the exception rather than the rule.

To see why, it is useful to connect the current crisis to two wider trends in education and parenting that have been going on for multiple decades, namely the rising "intensity" of parenting, and a widening "parenting gap" between the choices of parents at different rungs of the social ladder.

Underlying Trends: Intensive Parenting & a Widening Parenting Gap

What is meant by a rising intensity of parenting is that many parents today are highly engaged with (and also often anxious about) the development and education of their children. The intensive parenting styles of today's parents have been variously labeled as "helicopter parenting", "tiger parenting," and "snowplow parenting", and are widely discussed in the media and among parents themselves.

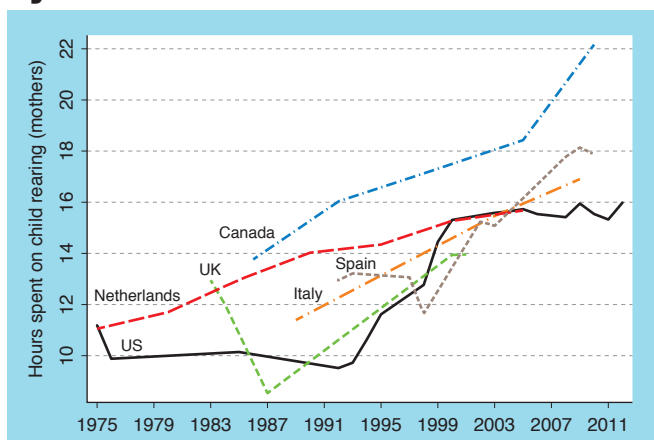
Beyond new labels, the rising intensity of parenting is reflected in data about what parents actually do. Time use data show that today's parents spend much more time on childcare than what was the norm in the 1960s and 1970s. In the US, for example, mothers and fathers each spend about six additional hours per week with their children compared to parents in 1975. *Charts 1 & 2* show that this upward trend in childcare can be seen in a number of industrialized countries, including Canada, the United Kingdom, the Netherlands, Italy, and Spain.

Much of this additional time is spent on educational activities such as reading to children and helping them with homework. Likewise, monetary expenses on things such as tutoring, music and sports classes, and other enrichment activities have risen sharply.

Closely connected to the trend toward more intensive parenting is a second observation, namely that there is a widening "parenting gap" between families from different backgrounds. The trend towards more intensive parenting is most pronounced among those already in an

CHART 1

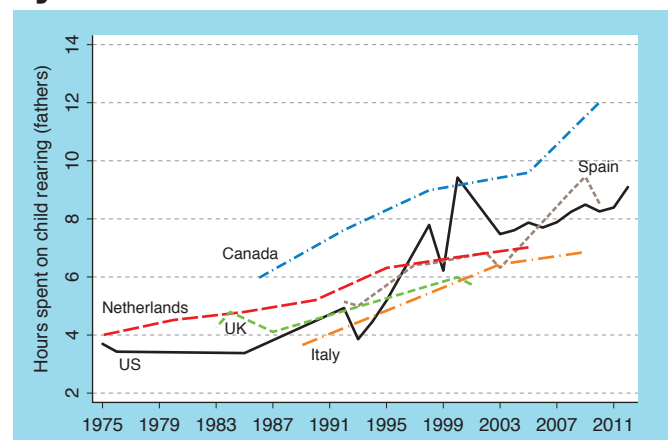
Hours per week spent on childcare by mothers in 6 OECD countries



Source: Matthias Doepke and Fabrizio Zilibotti, "Love, Money, and Parenting: How Economics Explains the Way We Raise Our Kids" (Princeton University Press, 2019)

CHART 2

Hours per week spent on childcare by fathers in 6 OECD countries



Source: Matthias Doepke and Fabrizio Zilibotti, "Love, Money, and Parenting: How Economics Explains the Way We Raise Our Kids" (Princeton University Press, 2019)

advantaged position, such as upper-middle-class families where both parents have university education and a high income. In contrast, less fortunate families have not been able to increase their parenting investments to the same extent.

Chart 3 illustrates the rising parenting gap in terms of time use between less educated (up to high school education) and more educated parents in the US. In the 1960s and 1970s, the two groups spend similar amounts of time on raising their children. Starting in the 1990s, parenting investments have risen sharply, but much more so among more educated parents. Given that highly educated parents also tend to have few children, children with educated parents now benefit from a lot more interaction with their parents than others.

The same rising gap can also be seen in data on expenses in children, such as spending on schooling, daycare centers, nannies, and music lessons. Such investments in children have risen sharply since the 1980s for parents in the top 10% of the income distribution. For parents in the bottom quarter, spending has actually declined.

Economic Underpinnings of Changed Parenting

The long-run trend toward more intensive parenting and a rising parenting gap is informative for the current crisis, because it shows how parents across the income distribution react to changing economic circumstances. In our book *Love, Money, and Parenting: How Economics Explains the Way We Raise Our Kids* (Princeton University Press, 2019), Fabrizio Zilibotti and I argue that recent changes in parenting are a response to a pervasive trend toward higher economic inequality in advanced economies.

Our perspective is that parenting choices reflect parents' desire to prepare their children for the life that expects them. If there is a change in the values, attitudes, or skills that are preconditions for success in the given economic environment, parenting will come to reflect this change. In addition, parents' choices are shaped by constraints, including limited time (e.g., a parent who holds two jobs

to make a living will be less able to engage in intensive parenting) and limited money (e.g., poorer parents are less able to afford expensive enrichment classes for their children).

In our book, we argue that the change in the economic environment that had the biggest impact on parenting is rising economic inequality. In the US, the ratio between the incomes of households at the 90th and the 10th percentile of the income distribution has more than doubled between 1974 and 2014. Rising inequality is also reflected in a rising return to education. In the US and many other countries, the gap between the average wages paid to workers with and without a college degree has risen sharply.

From a parent's perspective, this rise in inequality has raised the stakes in parenting. Parents always face a tradeoff between pushing their children toward achievement and, say, granting them more independence and time to socialize freely with friends. When inequality is low and children's future success does not depend much on out-competing their peers, parents can afford a relaxed attitude. This explains what parenting was like in the 1960s and early 1970s – in times of low unemployment and a low wage gap between university graduates and other workers, there were many paths to a fulfilled adult life, and parents could let children follow their own inclinations. Today, given much higher stakes, parents feel that they can no longer afford to be relaxed, resulting in time-intensive, frantic parenting for the current generation of helicopter parents.

Economic Inequality & the Rising Parenting Gap

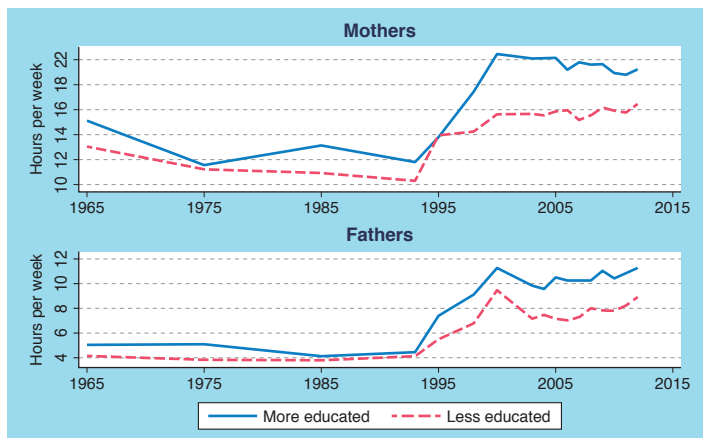
The link between economic inequality and parenting fits the evidence from around the world remarkably well: over time and across space, higher inequality is closely associated with more intensive parenting. The intensity of parenting can be measured using the World Values Survey, in which people are asked which attitudes or values they find most important in child rearing. An intensive parenting style is associated with parents emphasizing "hard work" as

being important for children. Economic inequality in a country closely correlates with the fraction of parents who single out hard work. For example, in low-inequality Sweden, only 11% of parents emphasize hard work, compared to about 45% in the UK and almost two-thirds of parents in the highly unequal US. Countries with moderate inequality such as Germany and Japan are in between these extremes.

Rising inequality can also account for the rising parenting gap. If we compare parenting between families from different ends of the socioeconomic scale, changes in inequality matter in two different ways. First, as already pointed out, rising inequality raises the stakes in parenting and provides additional incentives for parents to push their children toward academic achievement. This factor applies equally to richer and poorer families.

The second factor is that rising inequality, by definition, increases the gap in resources between richer and poorer families. Even though poorer parents desire to engage in more intensive parenting, lack of resources will often leave them

CHART 3
Time use for child rearing by mothers & fathers in the US



Source: Matthias Doepke and Fabrizio Zilibotti, "Love, Money, and Parenting: How Economics Explains the Way We Raise Our Kids" (Princeton University Press, 2019)

unable to do so. This is most obvious for monetary expenses like tutoring and classes, which are unaffordable to many poorer parents. But resources matter for time investments, too. A poor parent may have to hold two jobs to get by, leaving less time for interacting with children. What is more, rich families are often able to pay others to provide services like house cleaning or gardening, leaving more time for engaging with children. With fewer resources, poorer families cannot do the same.

The Parenting Gap During the Coronavirus Pandemic

The reaction of parents with different means to rising economic inequality is informative for how school closures are going to affect children with different backgrounds. Even more so than rising inequality, school closures greatly raise the stakes in parenting. Whereas previously parents could rely on schools and teachers to meet many of their children's educational needs, during the crisis the parents are on their own. Given that returns to education continue to be high, how to ensure that learning continues for their children during the crisis is surely high on most parents' list of priorities.

But just as not all parents have the same capability to engage in intensive parenting in response to rising inequality, not all parents are equally able to ensure successful home schooling for their children. For learning at home to be successful, a series of factors have to line up: schools need to have the resources to implement remote learning, students need to have access to computers, printers, and reliable Internet connections at home, and parents need to have the ability, time, energy, and patience to turn into home-school instructors, on top of other responsibilities.

Even well-off families struggle with home schooling during the pandemic, but inevitably the challenge is much greater for those already at a disadvantage. Less educated parents face obstacles in helping their children with, say, advanced mathematics in high school, and immigrants who lack expertise in the local language face yet another set of difficulties. For many single parents on low wages, squaring the education needs of their children with continuing to earn an income is near impossible.

News reports in recent months confirm that remote learning is not working for many children. The *Wall Street Journal* reported that 20% of US students do not even have access to the technology needed for remote learning. Even among those who do, many fail to log on to online classes entirely, and others are engaged for only a short period each day.

Overall, the disruption of schooling during the pandemic has disparate effects across the socio-economic ladder. As a result, the achievement gap between children from poorer and richer families will keep rising as long as school closures continue. The evidence so far suggests that only a small minority of students, most from advantaged backgrounds, will achieve the same learning gains as in a regular school year. For a larger fraction of children, many of whom are from poorer families, learning all but stopped when schools closed down.

How Much Learning Will Be Lost?

Reliable data on learning losses during the pandemic is unlikely to be available before the middle of 2021, by which time regular schooling should have resumed in most places and standardized testing can be carried out. Nevertheless, we can get a good sense of the size of likely learning gaps by considering evidence of "summer learning loss" – i.e., the phenomenon that when students return to school after the summer break, some of the knowledge they had acquired before the summer is lost.

Results from standardized testing in mathematics show that US students in grades 6 to 8 gain about 8 points on the testing scale during the school year, but then lose 4 of those points during the summer. The learning interruption during the pandemic has lasted about three months so far, which is similar in length to the typical summer break in the US. We therefore expect that a child who was unable to learn at home lost about 4 points in mathematics, whereas a child that continues learning at the usual speed would gain 2.7.

The achievement gap between children in the best- and worst-case scenarios would therefore be expected to rise by close to 7 points in mathematics. This number is larger than the typical learning gain during an entire school year. In short, the less fortunate children are left behind by the equivalent of more than an entire year of schooling. If school closures continue in the fall, these gaps will continue to grow.

The Greatest Challenge

As these calculations show, the coronavirus pandemic is already greatly increasing educational inequality among children. Given high economic returns to education, the learning losses incurred now are going to be reflected in lower earnings for already disadvantaged children for decades to come. The rise in educational inequality is so far hidden from view, because children's education is not reflected in GDP and educational testing is suspended in many countries. But in the final assessment, the long-term economic impact of rising learning gaps may well exceed the direct economic cost of the downturn.

How to address this challenge is an open question that has seen little discussion so far. Opening schools as quickly and safely as possible is certainly part of the solution; but to make up for losses already incurred, new educational programs will have to be developed that go much beyond resuming business-as-normal. The earlier policymakers confront this issue, the better the prospects of undoing at least some of the profound damage to the prospects of the next generation that is now being done.

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