Why lockdown and distance learning during the COVID-19 pandemic are likely to increase the social class achievement gap

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Abstract

The COVID-19 pandemic has forced teachers and parents to adapt quickly to a new educational context: distance learning. Teachers developed online academic material while parents taught the exercises and lessons provided by teachers to their children at home. Considering that the use of digital tools in education has dramatically increased during this crisis, and it is set to continue, there is a pressing need to understand the impact of distance learning. Taking a multidisciplinary view, we argue that by making the learning process rely more than ever on families rather than on teachers, and by getting students to work predominantly via digital resources school closures exacerbate social class academic disparities. To address this burning issue, we propose an agenda for future research and outline recommendations to help parents, teachers, and policymakers to limit the impact of the lockdown on social class based academic inequality.

The widespread effects of the COVID-19 pandemic that emerged in 2019–2020 have drastically increased health, social and economic inequalities (1-2). For more than 900 million learners around the world, the pandemic led to the closure of schools and universities (3). This exceptional situation forced teachers, parents and students to adapt very quickly to a new educational context: distance learning. Teachers had to develop online academic materials that could be used at home in order to ensure educational continuity while ensuring the necessary physical distancing. Primary and secondary school students suddenly had to work with various kinds of support, usually provided online by their teachers. For college students, lockdown often entailed returning to their hometowns while staying connected with their teachers and classmates via video conferences, email, and other digital tools. Despite the best efforts of educational institutions, parents, and teachers to keep all children and students engaged in learning activities, ensuring educational continuity during school closure – something that is difficult for everyone – may pose unique material and psychological challenges for working-class families and students.

Not only did the pandemic lead to the closure of schools in many countries, often for several weeks; it also accelerated the digitalization of education and amplified the role of parental involvement in supporting the schoolwork of their children. Thus, beyond the specific circumstances of the COVID-19 lockdown, we believe that studying the effects of the pandemic on academic inequalities provides a way to examine more broadly the consequences of school closure and related effects (e.g., digitalization of education) on social class inequalities. Indeed, bearing in mind that (a) the risk of further pandemics is higher than ever (i.e., we are in a "pandemic era", 4-5), and (b) beyond pandemics, the use of digital tools in education (and thus the influence of parental involvement) has dramatically increased during this crisis, and it is set to continue, there is a pressing need for an integrative and comprehensive model that examines the consequences of distance learning. Here we propose

such an integrative model that helps us to understand the extent to which the school closures associated with the pandemic amplify economic, digital, and cultural divides which, in turn, impact the psychological functioning of parents, students and teachers in a way that amplifies academic inequalities. Bringing together research in social sciences, ranging from economics and sociology to social, cultural, cognitive, and educational psychology, we argue that by getting students to work predominantly via digital resources rather than direct interactions with their teachers, and by making the learning process rely more than ever on families rather than teachers, school closures exacerbate social class academic disparities.

First, we review research showing that social class is associated with unequal access to digital tools, unequal familiarity with digital skills, and unequal uses of such tools for learning purposes (6-7). We then review research documenting how unequal familiarity with school culture, knowledge, and skills can also contribute to the accentuation of academic inequalities (8-9). Next, we present the results of surveys conducted during the 2020 lockdown, showing that the quality and quantity of pedagogical support received from schools varied according to families' social class (e.g., 10-12). We then argue that these digital, cultural, and structural divides represent barriers to the ability of parents to provide appropriate support for children during distance learning (Fig. 1). These divides also alter parents and children's levels of self-efficacy, thereby impacting their engagement in learning activities (13-14). In a final section, we review preliminary evidence for the hypothesis that distance learning widens the social class achievement gap, and propose an agenda for future research. In addition, we outline recommendations that should help parents, teachers, and policymakers to use social science research to limit the impact of school closure and distance learning on the social class achievement gap.

Insert Fig. 1

The Digital Divide

Unequal Access to Digital Resources

Although the use of digital technologies is almost ubiquitous in developed nations, there is a digital divide such that some people are more likely than others to be numerically excluded (15, see Fig. 1). Social class is a strong predictor of digital disparities, including the quality of hardware, software, and Internet access (16-18). For example, in 2019, in France, around 1 in 5 working-class families did not have personal access to the Internet, compared to less than 1 in 20 of the most privileged families (19). Similarly, in 2020, in the UK, 20% of children who were eligible for free school meals did not have access to a computer at home, compared to 7% of other children (20). In 2021, in the United States, 41% of working-class families do not own a laptop or desktop computer and 43% do not have broadband, compared to respectively 8 and 7% of upper/middle-class Americans (21). A similar digital gap is also evident between lower and higher-income countries (22).

Second, simply having access to a computer and an Internet connection does not ensure effective distance learning. For example, many of the educational resources sent by teachers need to be printed, requiring access to printers. Moreover, distance learning is more difficult in households with only one shared computer, compared to those where each family members has their own (23). Furthermore, upper/middle-class families are more likely to be able to guarantee a suitable workspace for each child than their working-class counterparts (24).

In the context of school closures, such disparities are likely to have significant consequences for educational continuity. In line with this idea, a survey of approximately 4,000 parents in the UK confirmed that, during lockdown, more than half of primary school children from the poorest families did not have access to their own study space, and were less well equipped for distance learning than higher income families (10). Similarly, a survey of around 1,300 parents in the Netherlands found that during lockdown, children from working-class families had fewer computers at home and less room to study than upper/middle-class children (11).

Data from non-western countries highlight a more general digital divide, showing that developing countries have poorer access to digital equipment. For example, in India in 2018, only 10.7% of households possessed a digital device (25); in Pakistan in 2020, 31% of higher-education teachers did not have an Internet access and 68.4% did not have a laptop (26). In general, developing countries lack access to digital technologies (27-28), and these difficulties of access are even greater in rural areas (e.g., 29). Consequently, school closures have huge repercussions for the continuity of learning in these countries. For example, in India in 2018, only 11% of the rural and 40% of the urban population above 14 years old could use a computer and access the Internet (25). Time spent on education during school closure decreased by 80% in Bangladesh (30). A similar trend was observed in other countries (31), with only 22% of children engaging in remote learning in Kenya (32), 50% in Burkina-Faso (33). In Ghana, 26 to 32% of children spent no time at all on learning during the pandemic (34). Beyond the overall digital divide, social class disparities are also evident in developing countries, with lower access to digital resources amongst low parental educational level households (vs. high parental educational level households, e.g., 35 in Nigeria; see also 31 for Ecuador).

Unequal Digital Skills

In addition to unequal access to digital tools, there are also systematic variations in digital skills (36-37, see Fig. 1). Upper/middle-class families are more familiar with digital tools and resources and therefore are more likely to have the digital skills needed for distance learning (38-40). These digital skills are particularly useful during school closures, both for students and for parents, for organizing, retrieving, and using correctly the resources provided by the teachers (e.g., sending or receiving documents by e-mail, printing documents, using word processors, etc.).

Social class disparities in digital skills can be explained in part by the fact that children from upper/middle-class families have the opportunity to develop digital skills earlier than working-class families (41). In OECD countries, only 23% of working-class children had started using a computer at the age of 6 or earlier, compared to 43% of upper/middle-class children (42). Moreover, because working-class people tend to persist less than upper/middle-class people when confronted with digital difficulties (23), the use of digital tools and resources for distance learning may interfere with parents' ability to help children with their schoolwork.

Unequal Use of Digital Tools

A third level of digital divide concerns variations in digital tool use (18; 43, see Fig. 1). Upper/middle-class families are more likely to use digital resources for work and education (6; 41; 44) whereas working-class families are more likely to use these resources for entertainment, such as electronic games or social media (6; 45). This divide is also observed among students: working-class students tend to use digital technologies for leisure activities, whereas their upper/middle-class peers are more likely to use them for academic activities (46) and to consider that computers and the Internet provide an opportunity for education and training (23). Furthermore, working-class families appear to regulate their

children's digital practices less (47) and are more likely to allow screens in children's and teenagers' bedrooms without setting limits on times or practices (48).

In sum, inequalities in terms of digital resources, skills, and use have strong implications for distance learning because they make working-class students and parents particularly vulnerable when learning relies on extensive use of digital devices, rather than on face-to-face interaction with teachers.

The Cultural Divide

Even if all three levels of digital divide were closed, upper/middle-class families would still be better prepared than working-class families to ensure educational continuity for their children. They are more familiar with the academic knowledge and skills that are expected and valued in educational settings, as well as with the independent, autonomous way of learning that is valued in the school culture and becomes even more important during school closure (Fig. 1).

Unequal Familiarity with Academic Knowledge and Skills

According to classic social reproduction theory (8; 49), school is not a neutral place in which all forms of language and knowledge are equally valued. Academic contexts expect and value culture-specific and taken-for-granted forms of knowledge, skills, and ways of being, thinking, and speaking that are more in tune with those developed through upper/middle-class socialization (i.e., *cultural capital*; 8; 50-53). For instance, academic contexts value interest in arts, museums, and literature (54-55), a type of interest that is more likely to develop through socialization in upper/middle-class families than in working-class socialization (54; 56). Indeed, upper/middle-class parents are more likely than working-class parents to engage in activities that develop this cultural capital. For example, they possess more books and cultural objects at home, read more stories to their children, and visit museums and libraries more often (e.g., 51; 54-55). Upper/middle-class children are also

more involved in extra-curricular activities (e.g., playing a musical instrument) than working-class children (55-57).

Beyond this implicit familiarization with the school curriculum, upper/middle-class parents more often organize educational activities explicitly designed to develop their children's academic skills (57-59). For example, they are more likely to monitor and reexplain lessons or use games and textbooks to develop and reinforce academic skills (e.g., labeling numbers, letters, colors; 57; 60). Upper/middle-class parents also provide higher levels of support and spend more time helping children with homework than working-class parents (e.g., 61-62). Thus, even if all parents are committed to the academic success of their children, working-class parents have fewer chances to provide the help that children need to achieve homework (63) and homework is more beneficial for children from upper-middle class families than for children from working-class families (64-65).

School Closures Amplify the Impact of Cultural Inequalities

The trends described above have been observed in 'normal' times, when schools are open. School closures, by making learning rely more strongly on practices implemented at home (rather than at school), are likely to amplify the impact of these disparities. Consistent with this idea, research has shown that the social-class achievement gap usually widens greatly during school break—a phenomenon described as *summer learning loss* or *summer setback* (66-68). During holidays, children's learning tends to decline, and this is particularly pronounced in children from working-class families. Consequently, the social class achievement gap grows more rapidly during the summer months than it does in the rest of the year. This phenomenon is partly explained by the fact that during the break from school, social class disparities in investment in activities that are beneficial for academic achievement (e.g., reading, traveling to a foreign country, museum visits) are more pronounced.

Therefore, when they are out of school, children from upper/middle-class backgrounds may continue to develop academic skills, unlike their working-class counterparts, who may stagnate or even regress. Research also indicates that learning loss during school breaks tends to be cumulative (66). Thus, repeated episodes of school closure are likely to have profound consequences for the social class achievement gap. Consistent with the idea that school closure could lead to similar processes as those identified during summer breaks, a recent survey indicated that during the COVID-19 lockdown in the UK, children from upper/middle-class families spent more time on educational activities (5.8 hours a day) than those from working-class families (4.5 hours per day, 7; 69).

Unequal Dispositions For Autonomy and Self-regulation

School closure has encouraged autonomous work among students. This "independent" way of studying is compatible with upper/middle-class students' family socialization, but does not match the interdependent norms more commonly associated with working-class contexts (9). Upper/middle-class contexts tend to promote cultural norms of independence whereby individuals perceive themselves as autonomous actors, independent of other individuals and of the social context, able to pursue their own goals (70). For example, upper/middle-class parents tend to invite children to express their interests, preferences, and opinions during the various activities of everyday life (54-55). Conversely, in working-class contexts characterized by low economic resources, where life is more uncertain, individuals tend to perceive themselves as interdependent, connected to others and members of social groups (53; 70-71). This interdependent self-construal fits less well with the independent culture of academic contexts. This cultural mismatch between interdependent self-construal common in working-class students and the independent norms of the educational institution has negative consequences for academic performance (9).

Once again, the impact of these differences is likely to be amplified during school closure, when being able to work alone and autonomously is especially useful. The requirement to work alone is more likely to match the independent self-construal of upper/middle-class students than the interdependent self-construal of working-class students. In the case of working-class students, this mismatch is likely to increase their difficulties in working alone at home. Supporting our argument, recent research has shown that working-class students tend to underachieve in contexts where students work individually, by comparison with contexts where students work with others (72). Similarly, during school closure, high self-regulation skills (e.g., setting goals, selecting appropriate learning strategies, maintaining motivation; 73) are required to maintain study activities and are likely to be especially useful for using digital resources efficiently. Research has shown that students from working-class backgrounds typically develop their self-regulation skills to a lesser extent than those from upper/middle-class backgrounds (74-76).

Interestingly, some authors have suggested that independent (versus interdependent) self-construal may also affect communication with teachers (77). Indeed, in the context of remote courses, working-class families are less likely to respond to teachers' communication because their "interdependent" self leads them to respect hierarchies, and thus to perceive teachers as an expert who "can be trusted to make the right decisions for learning." Upper/middle class families, relying on "independent" self-construal, are more inclined to seek individualized feedback, and therefore tend to participate to a greater extent in exchanges with teachers. Such cultural differences are important because they can also contribute to the difficulties encountered by working class families.

The Structural Divide: Unequal Support from Schools

The issues reviewed thus far all increase the vulnerability of children and students from underprivileged backgrounds when schools are closed. To offset these disadvantages, it

might be expected that the school should increase its support by providing additional resources for working-class students. However, recent data suggest that differences in the material and human resources invested in providing educational support for children during periods of school closure were—paradoxically—in favor of upper/middle-class students (Fig. 1). In England, for example, upper/middle-class parents reported benefiting from online classes and videoconferencing with teachers more often than working-class parents (10). Furthermore, active help from school (e.g., online teaching, private tutoring, or chats with teachers) occurred more frequently in the richest households (64% of the richest households declared having received help from school) than in the poorest households (47%). Another survey found that in the UK, upper/middle-class children were more likely to take online lessons every day (30%) than working-class students (16%; 12). This substantial difference might be due, at least in part, to the fact that private schools are better equipped in terms of online platforms (60% of schools have at least one online platform) than state schools (37%, and 23% in the most deprived schools) and were more likely to organize daily online lessons. Similarly, in the UK, in schools with a high proportion of students eligible for free school meals, teachers were less inclined to broadcast an online lesson for their pupils (78). Interestingly, 58% of teachers in the wealthiest areas reported having messaged their students or their students' parents during lockdown, compared to 47% in the most deprived schools. In addition, the probability of children receiving technical support from the school (e.g., by providing pupils with laptops or other devices) is, surprisingly, higher in the most advantaged schools than in the most deprived (78).

In addition to social class disparities, there has been also less support from schools for African-American and Latinx students: During school closures in the US, 40% of African-American students and 30% of Latinx students received no online teaching, compared to 10% of white students (79). Another source of inequality is that the probability of school closure

was correlated with social class and race: In the United States, for example, school closures from September to December 2020 were more common in schools with a high proportion of racial/ethnic minority students, who experience homelessness, and are eligible for free/discounted school meals (80).

Similarly, access to educational resources and support was lower in poorer (as compared to richer) countries (81). In sub-Saharan Africa, during lockdown, 45% of children had no exposure at all to any type of remote learning. Of those who did, the medium was mostly radio, TV, or paper, rather than digital. In African countries, at most 10% of children received some material through the internet. In Latin America, 90% of children received some remote learning; but less than half of that was through the internet – the remainder being via radio and TV (81). In Ecuador, high-school students from the lowest wealth quartile had fewer remote learning opportunities, such as Google class/Zoom, than students from highest wealth quartile (31).

Thus, the achievement gap and its accentuation during lockdown are due not only to the cultural and digital disadvantages of working-class families, but also to unequal support from schools. This inequality in school support is not due to teachers being indifferent to or even supportive of social stratification. Rather, we believe these effects to be fundamentally structural. In many countries, schools located in upper/middle-class neighborhoods have more money than those in poorest neighborhoods. Moreover, upper/middle-class parents invest more in their children's schools than working class parents (e.g., 82) and schools have an interest in catering more for middle- and high-SES families than for working-class families (83). Additionally, teachers' expectations may be lower for working-class children (84). For example, they tend to estimate that lower class students invest less effort in learning than their upper/middle-class counterparts (85). These differences in perception may have influenced teachers' behavior during school closure, such that teachers in privileged neighborhoods

provided more information to students because they expected more from them, in term of efforts and achievement. The fact that upper/middle-class parents are better able than working-class parents to comply with teachers' expectations (e.g., 55; 86) may have reinforced this phenomenon. These discrepancies echo data showing that working class students tend to request less help in their schoolwork than upper/middle-class ones (87), and may even avoid asking for help because they believe that such requests could lead to reprimands (88). During school closure, these students (and their families) may in consequence have been less likely to ask for help and resources. Jointly, these phenomena have resulted in upper/middle-class families receiving more support from schools during lockdown than their lower-class counterparts.

Psychological Effects of Digital, Cultural, and Structural Divides

Despite being strongly influenced by social class, differences in academic achievement are often interpreted by parents, teachers, and students as reflecting differences in ability (89). As a result, upper/middle-class students are usually perceived—and perceive themselves—as smarter than working-class students, who are perceived—and perceive themselves—as less intelligent (90-92) or less able to succeed (93). Working-class students also worry more about the fact that they might perform more poorly than upper/middle-class students (94-95). These fears influence academic learning in important ways. In particular, they can consume cognitive resources when children and students work on academic tasks (96-97). Self-efficacy also plays a key role in engaging in learning and perseverance in the face of difficulties (13; 98). In addition, working-class students are those for whom the fear of being outperformed by others is the most negatively related to academic performance (99).

The fact that working-class children and students are less familiar with the tasks set by teachers, and also less well equipped and supported, makes them more likely to experience feelings of incompetence (Fig. 1). Working-class parents are also more likely than their

upper/middle-class counterparts to feel unable to help their children with schoolwork. Consistent with this, research has shown that both working-class students and parents have lower feelings of academic self-efficacy than their upper/middle-class counterparts (100-101). These differences have been documented under 'normal' conditions but are likely to be exacerbated during distance learning. Recent surveys conducted during the school closures have confirmed that upper/middle-class families felt better able to support their children in distance learning than did working-class families (10) and that upper/middle-class parents helped their children more and felt more capable to do so (11-12).

Pandemic Disparity, Future Directions, and Recommendations

The research reviewed thus far suggests that children and their families are highly unequal with respect to digital access, skills, and use. It also shows that upper/middle-class students are more likely to be supported in their homework (by their parents and teachers) than working-class students, and that upper/middle-class students and parents will probably feel better able than working-class ones to adapt to the context of distance learning. For all these reasons, we anticipate that, as a result of school closures, the COVID-19 pandemic will substantially increase the social class achievement gap. Because school closures are a recent occurrence, it is too early to measure their effects on the widening of the achievement gap with precision. However, some recent data are consistent with this idea.

Evidence for a Widening Gap During the Pandemic

Comparing academic achievement in 2020 with previous years provides an early indication of the effects of school closures during the pandemic. In France, for example, first and second graders take national evaluations at the beginning of the school year. Initial comparisons of the results for 2020 with those from previous years reveal that the gap between schools classified as "priority schools" (those in low-income urban areas) and

schools in higher-income neighborhoods – a gap observed every year – is particularly pronounced in 2020, in both French and mathematics (102).

Similarly, in the Netherlands, national assessments take place twice a year. In 2020, they took place both before and after school closures. A recent analysis compared progress during this period in 2020 in math/arithmetic, spelling, and reading comprehension for 7- to 11- year-old students with the same period in the three previous years (103). Results indicate a general learning loss in 2020. More importantly, for the 8% of working-class children, the losses were 40% greater than they were for upper/middle-class children.

Similar results were observed in Belgium among students attending the final year of primary school. Compared to students from previous cohorts, students affected by school closures experienced a significant decrease in their math and language scores, with children from more disadvantaged backgrounds experiencing greater learning losses (104). Likewise, oral reading assessments in more than 100 U.S. school districts showed that the development of this skill among children in second and third grade significantly slowed between Spring and Fall 2020, but this slowdown was more pronounced in schools from lower achieving districts (105).

It is likely that school closures have also amplified racial disparities in learning and achievement. For example, in the United States, after the first lockdown, students of color lost the equivalent of three to five months of learning, whereas white students were about one to three months behind. Moreover, in the Fall, when some students started to return to classrooms, African-American and Latinx students were more likely to continue studying at distance, despite being less likely to have access to the digital tools, internet access, and live contact with teachers (106).

In some African countries (e.g., Ethiopia, Kenya, Liberia, Tanzania, and Uganda) the COVID crisis has resulted learning loss ranging from 6 months to more one year (107) and

394 this learning loss appears to be greater for low-SES children (i.e., those attending no-fee
395 schools) than for middle-SES children (108).

396 These findings show that school closures have exacerbated achievement gaps linked to
397 social class and ethnicity. However, more research is needed to address the question of
398 whether school closures differentially affect the learning of students from working- and
399 upper/middle-class families.

400 **Future Directions**

401 First, in order to assess the specific and unique impact of school closures on student
402 learning, longitudinal research should compare student achievement at different times of the
403 year, before, during, and after school closures, as has been done to document the summer
404 learning loss (66; 109). In the coming months, alternating periods of school closure and
405 opening may occur, presenting opportunities to do such research. This would also make it
406 possible to examine whether the gap diminishes a few weeks after children return to in school
407 or whether, conversely, it increases with time, because the foundations have not been
408 sufficiently acquired to facilitate further learning (110).

409 Second, the mechanisms underlying the increase of social class disparities during
410 school closures should be examined. As discussed above, school closures result in situations
411 for which students are unevenly prepared and supported. It would be appropriate to seek to
412 quantify the contribution of each of the factors that might be responsible for accentuating the
413 social class achievement gap. In particular, distinguishing between factors that are relatively
414 "controllable" (e.g., resources made available to pupils) and those that are more difficult to
415 control (e.g., parents' self-efficacy in supporting their children's schoolwork) is essential to
416 inform public policy and teaching practices.

417 Third, existing studies are based on general comparisons, and very few provide
418 insights into the actual practices that took place in families during school closure and how

these practices impacted the achievement gap. For example, research has documented that parents from working-class backgrounds are likely to find it more difficult to help their children to complete homework and to provide constructive feedback (63; 111), something that could in turn have a negative impact on their children's continuity of learning. In addition, it seems reasonable to assume that, during lockdown, parents from upper/middle-class backgrounds encouraged their children to engage in practices that, even if not explicitly requested by teachers, would be beneficial to learning (e.g., creative activities, reading). Identifying the practices that best predict the maintenance or decline of educational achievement during school closure would help to identify levers for intervention.

Finally, it would be interesting to investigate teaching practices during school closures. The lockdown in the spring of 2020 was sudden and unexpected. Within a few days, teachers had to find a way to compensate for the school closure, which led to highly variable practices. Some teachers posted schoolwork on platforms, others sent it by email, some set work on a weekly basis while others set it day by day. Some teachers also set up live sessions in large or small groups, providing remote meetings for questions and support. There also have been variations in the type of feedback given to students, notably through the monitoring and correcting of work. Future studies should examine in more detail what practices schools and teachers used to compensate for the school closures and their effects on widening, maintaining, or even reducing the gap, as has been done for certain specific literacy programs (112) as well as specific instruction topics (e.g., ecology and evolution, 113).

Practical Recommendations

We are aware of the debate about whether social science research on COVID-19 is suitable for making policy decisions (114), and we draw attention to the fact that some of our recommendations (see Table 1) are based on evidence from experiments or interventions carried out pre-COVID, while others are more speculative. In any case, we emphasize that

these suggestions should be viewed with caution and be tested in future research. Some of our recommendations could be implemented in the event of new school closures, others only when schools reopen. We also acknowledge that while these recommendations are intended for parents and teachers, their implementation largely depends on the adoption of structural policies. Importantly, given all the issues discussed above, we emphasize the importance of prioritizing, wherever possible, in-person learning over remote learning (115) and where this is not possible, of implementing strong policies to support distance learning, especially in disadvantaged families.

Where face-to face teaching is not possible and teachers are responsible for implementing distance learning, it will be important to make them aware of the factors that can exacerbate inequalities during lockdown and to provide them with guidance about practices that would reduce these inequalities. Thus, there is an urgent need for interventions aimed at making teachers aware of the impact of children's and families' social class on (a) access to, familiarity with, and use of digital devices; (b) familiarity with academic knowledge and skills; and (c) preparedness to work autonomously. Increasing awareness of the material, cultural, and psychological barriers that working-class children and families face during lockdown should increase the quality and quantity of teachers' support and thereby positively impact working-class students' achievement.

In addition to increasing teachers' awareness of these barriers, teachers should be encouraged to adjust the way they communicate with working-class families, due to differences in self-construal compared to upper/middle-class families (77). For example, questions about family (rather than personal) well-being would be congruent with interdependent self-construals. This should contribute to a better communication and help to keep a better track of students' progress during distance learning.

It is also necessary to help teachers to engage in practices that have a chance of reducing inequalities (53; 116). Particularly important is that teachers and schools ensure that homework can be done by all children, for example by setting up organizations that would help children whose parents are not in a position to monitor or assist with their children's homework. Options include homework help groups and tutoring by teachers after class. When schools are open, the growing tendency to set homework through digital media should be resisted as far as possible, given the evidence we have reviewed above. Moreover, previous research has underscored the importance of homework feedback provided by teachers, which is positively related to the amount of homework completed and predictive of academic performance (117). Where homework is web-based, it has also been shown that feedback on web-based homework enhances students' learning (118). It therefore seems reasonable to predict that the social class achievement gap will increase more slowly (or even remain constant or be reversed) in schools that establish individualized monitoring of students, by means of regular calls and feedback on homework, compared to schools where the support provided to pupils is more generic.

Given that learning during lockdown has increasingly taken place in family settings, we believe that interventions involving the family are also likely to be effective (119-121). Simply providing families with suitable material equipment may be insufficient. Families should be given training in the efficient use of digital technology and pedagogical support. This would increase parents' and students' self-efficacy, with positive consequences for achievement. Ideally, such training would be delivered in person, in order to avoid problems arising from the digital divide. Where this is not possible, individualized online tutoring should be provided. For example, studies conducted during the lockdown in Botswana and Italy have shown that individual online tutoring targeting either parents or middle school

492 students directly has a positive impact on students' achievement, particularly for low-SES
493 students (122; 123).

494 Interventions targeting families should also address the psychological barriers faced by
495 working-class families and children. Some interventions have already been designed and been
496 shown to be effective in reducing the social class achievement gap, particularly in math and
497 language (124-126). For example, research showed that an intervention designed to train low-
498 income parents in how to support their pre-kindergarten children's mathematical development
499 (including math classes and access to a library of math kits to use at home) increased the
500 quality of parents' support, with a corresponding impact on the development of their
501 children's mathematical knowledge. Such interventions should be particularly beneficial in
502 the context of school closure.

503 Beyond its impact on academic performance and inequalities, the COVID-19 crisis has
504 shaken the economies of countries around the world, casting millions of families around the
505 world into poverty (127-129). As noted earlier, there has been a marked increase in economic
506 inequalities, bringing with it all the psychological and social problems that such inequalities
507 create (130-131), especially for people who live in scarcity (132). The increase in educational
508 inequalities is just one facet of the many difficulties that working-class families will encounter
509 in the coming years, but it is one that could seriously limit the chances of their children
510 escaping from poverty by reducing their opportunities for upward mobility. In this context, it
511 should be a priority to concentrate resources on the most deprived students. A significant
512 proportion of the poorest households do not own a computer and do not have personal access
513 to the Internet, which has important consequences for distance learning. During school
514 closures, it is therefore imperative to provide such families with adequate equipment and
515 Internet service, as was done in some countries in spring 2020. Even if the provision of such

516 equipment is not in itself sufficient, it is a necessary condition for ensuring pedagogical
517 continuity during lockdown.

518 Finally, after prolonged periods of school closure, many students may not have
519 acquired the skills needed to pursue their education. A possible consequence would be an
520 increase in the number of students for whom teachers recommend class repetitions. Class
521 repetitions are contentious. On the one hand, class repetition more frequently affects working-
522 class children, and is not efficient in term of learning improvement (133). On the other hand,
523 accepting lower standards of academic achievement or even suspending the practice of
524 repeating a class could lead to pupils pursuing their education without mastering the key
525 abilities needed at higher grades. This could create difficulties subsequent years and, in this
526 sense, be counterproductive. We therefore believe that the most appropriate way to limit the
527 damage of the pandemic would be to help children catch up rather than allowing them to
528 continue without mastering the necessary skills. As is being done in some countries—
529 systematic remedial courses (e.g., summer learning programs) should be organized and
530 financially supported following periods of school closure, with priority given to pupils from
531 working-class families. Such interventions have genuine potential, in that research has shown
532 that participation in remedial summer programs is effective in reducing learning loss during
533 summer (134-136). For example, in one study, 438 students from high-poverty schools were
534 offered a multiyear summer school program including various pedagogical and enrichment
535 activities (e.g., science investigation, music) and were compared to a no-treatment control
536 group (137). Students who participated in the summer program progressed more than students
537 in the control group. A meta-analysis of 41 summer learning programs (i.e., classroom- and
538 home-based summer interventions), involving children from kindergarten to Grade 8 showed
539 that these programs had significantly larger benefits for children from working-class families
540 (138). Although such measures are costly, the cost is small compared to the price of failing to

fulfil the academic potential of many students simply because they were not born into upper/middle-class families.

Insert Table 1

Conclusion

The unprecedented nature of the current pandemic means that we lack strong data on what the school closure period is likely to produce in terms of learning deficits and the reproduction of social inequalities. However, the research discussed in this article suggests that there are good reasons to predict that this period of school closure will accelerate the reproduction of social inequalities in educational achievement.

By making school learning less dependent on teachers and more dependent on families and digital tools and resources, school closures are likely to greatly amplify social class inequalities. At a time when many countries are experiencing second, third or fourth waves of the pandemic, resulting in fresh periods of local or general lockdowns, systematic efforts to test these predictions are urgently needed, along with steps to reduce the impact of school closures on the social class achievement gap.

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909 **Declaration of Competing Interests**

910 The authors declare no competing interests.

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914

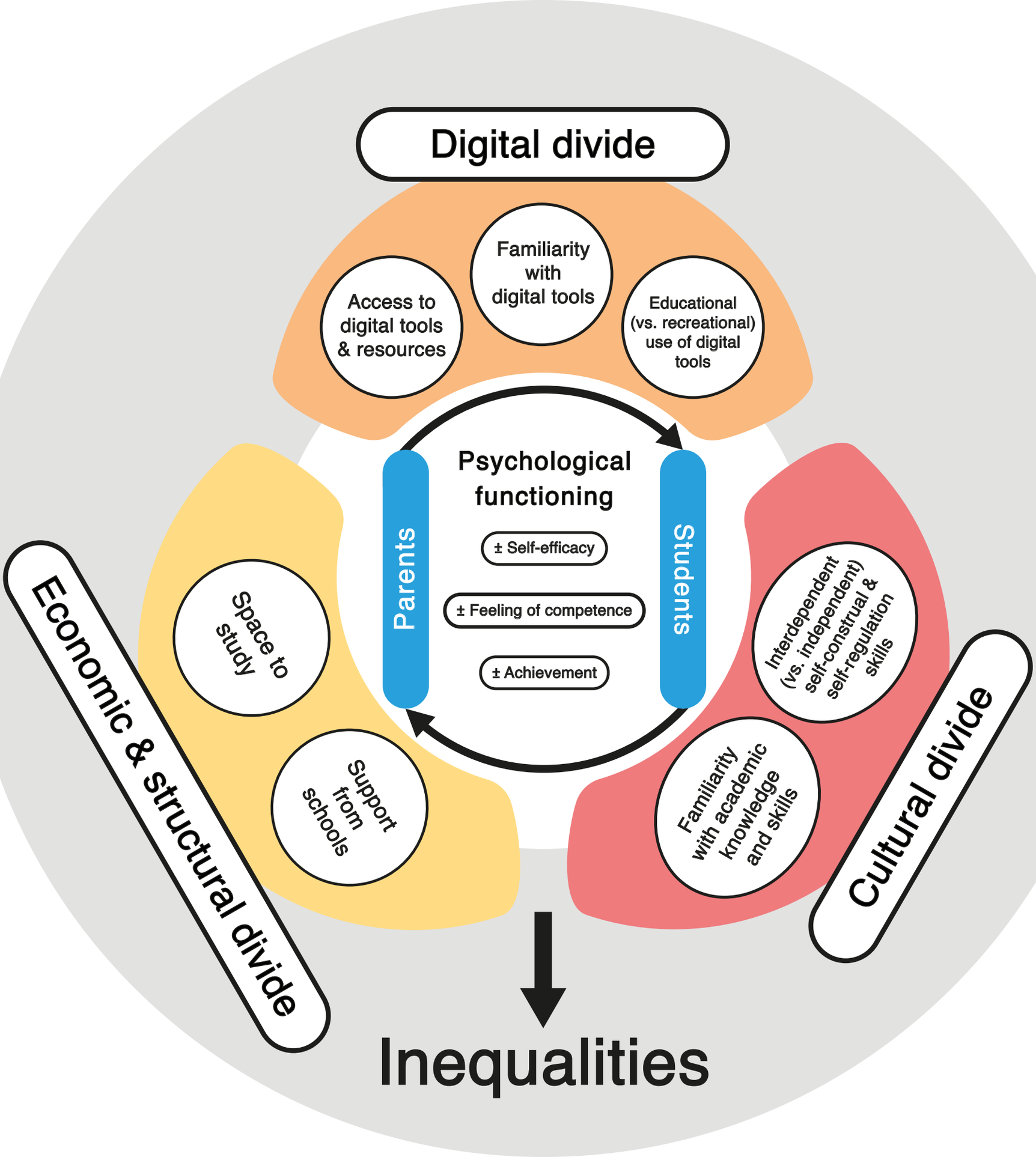
915 Fig. 1. Social inequalities processes during school closure: economic, structural, digital and
916 cultural divides influence parents and students' psychological functioning in a way that
917 amplify inequalities.

918

919 Table 1. Synthesis of practical recommendations

Goal	Recommendations
Improve teachers' support	Increase awareness of material, cultural, and psychological barriers faced by working-class children and families during lockdown. Encourage adjusted communication strategies. Encourage the use of practices and evidence-based interventions that have a chance of reducing inequalities.

	Encourage individualized monitoring of students (e.g., provide appropriate homework feedback).
Helping students and their families handling the lockdown situation	Train families and students in efficient use of digital technology. Implement evidence-based interventions focused on family support (e.g., reading programs, homework help).
Enhancing targeted policies	Prioritize, wherever possible, in-person learning over remote learning. Concentrate resources on the most deprived students (e.g., provide adequate equipment and Internet service to low-income families). Provide financial support for systematic remedial courses (e.g., summer learning programs)


Digital divide
Access to digital tools & resources
Familiarity with digital tools
Educational (vs. recreational) use of digital tools
Psychological functioning
± Self-efficacy
± Feeling of competence
± Achievement
Parents
Students
Space to study
Support from schools
Interdependent (vs. independent) self-construal & self-regulation skills
Familiarity with academic knowledge and skills
Economic & structural divide
Cultural divide
Inequalities