

Widening the divide: the impact of school closures on primary science learning

School closures due to the Covid-19 crisis may magnify existing inequalities in access to science education and careers, according to a new study from researchers at the University of Central Lancashire.

Children from poorer families are known to suffer learning loss during normal summer holidays, and the current closures are likely to magnify these. However new research shows that science learning for these groups may see a particularly severe reversal, undoing strenuous efforts to widen participation in the field.

Initial results of a study conducted with UK parents and teachers of primary-age children suggest that:

- In many cases, less science and a narrower range of topics are being taught during the closure period.
- Teachers report a great deal of difficulty in translating the science curriculum for home learning. Respondents cited concerns about availability of resources, access to the internet and parents' ability to support science learning as limiting the science that they could set.
- These difficulties and concerns were reported more frequently by teachers working in areas of higher deprivation, suggesting that families in these areas are likely to be disproportionately impacted by changes in school science provision.
- While almost all parents reported that their children were participating in school maths and English, only 58% per cent had done school science. Many had also participated in home-generated science activities, but one-fifth of parents reported that their child had done no science whatsoever.
- Some families, however, were enjoying science in lockdown, engaging with a wide range of activities and supported by access to relevant resources, technology, and individuals with expertise. Parents with post-compulsory science qualifications were much more confident in supporting their child's science learning.

These findings suggest the emergence of two lockdown groups. The science 'haves' are able to supplement reduced school science with sophisticated extracurricular activities and technology. Meanwhile the 'have-nots' may lack the confidence and resources to support any science activity at all. It is probable that the first group's children will emerge from lockdown with an even greater science advantage than they likely started with.

Young people going into science are still more likely to be from affluent households and those where they are exposed to scientific influences. School science may be the only point of access to future study and careers for young people from less-advantaged groups. It is therefore concerning that, due to valid anxieties about resources, these families may have even less access to school science activity than they usually do. Moreover, those with limited resources and scientific knowledge are likely to struggle to compensate with other activities.

SUMMARY OF FINDINGS

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The report states: “We know that science attitudes and motivations are set at a young age, and so the gap that looks likely to have been widened by the effect of the closures must be addressed swiftly in order to reverse negative impacts on efforts to widen participation in science.”

Suggestions for action include curriculum flexibility to cover missed topics, a co-ordinated approach at local authority level and extra funding for science enrichment activities, particularly in areas of greater deprivation. Those working in widening participation are urged to focus their efforts on areas of the science curriculum that may have been neglected during the closures.

The working paper, *Widening the divide: the impact of school closures on primary science learning* by Cherry Canovan and Naomi Fallon, can be found at doi.org/10.31235/osf.io/98rd5. The paper details the results of phase 1 of this ongoing study; phase 2, which will explore impacts on science learning in more depth, is planned for autumn 2020.

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