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HOME BROADBAND AND STUDENT ENGAGEMENT DURING COVID-19 EMERGENCY REMOTE TEACHING

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Home broadband and student engagement during COVID-19 emergency remote teaching[1]

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INTRODUCTION

In response to the COVID-19 pandemic, school buildings worldwide closed for often prolonged periods, necessitating a shift to emergency remote teaching. This study assessed the influence of high-speed broadband availability on second-level student engagement with distance learning during this period in Ireland. Employing data from a representative sample of second-level schools, we assessed the extent to which students were seen to engage with their learning and whether this varied across different types of schools and according to broadband coverage in schools' catchment areas. Other studies have highlighted that the use of, and access to, technology and digital media have been important factors in shaping the learning experience during the pandemic. However, our study is unique in that it identifies schools located in areas characterised by lower availability of high-speed broadband using objective information.

DATA AND METHODS

We invited all 723 second-level principals to participate in an online survey in May 2020 and received responses from almost 33%, which were broadly nationally representative in terms of geographic location and other school characteristics. School leaders were asked to rate the effect of the shift to remote teaching on student engagement with learning, student attendance in classes, and delivery of lesson content. By spatially linking each residence with the 2019 National Broadband Plan map, we calculated that high-speed broadband was available to less than 90% of residences in the catchment areas of over half of schools. We built statistical models to assess the relationship between the perceived impact on

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student engagement and availability of high-speed broadband in the catchment area. We controlled for key characteristics of schools, including type, size and social mix, and examined lesson delivery methods, including the prevalence of 'live' online classes.

RESULTS

We found that a reduction in student engagement, as perceived by school principals, was almost three times more likely among schools in areas characterised by lower coverage of high-speed broadband. This may be partly explained by our finding that a perceived reduction in engagement was less than half as likely among schools that employed live video teaching in most classes. It is plausible that the availability of broadband affected how distance learning was delivered, which in turn may have impacted student engagement. Overall, our results suggest that student engagement was better supported when distance teaching methods were more interactive and collaborative, and that this was best facilitated in areas where high-speed broadband was widely available. The results also show that schools which used individual student devices in the classroom prior to the pandemic may have been better equipped to rapidly shift to distance learning in emergency circumstances.

POLICY IMPLICATIONS

While the full costs, risks and benefits must be considered, our findings can be interpreted as one argument in support of the case for government intervention to provide greater equity in access to high-speed broadband. Where distance learning is required in future, teachers should be equipped to use live online teaching and collaborative approaches to better promote student engagement. Under the EU Recovery and Resilience Facility Ireland has prioritised digital education. This intends to provide digital infrastructure in schools, with the goal of equipping learners with digital skills and ensuring that learners have equal access to appropriate digital infrastructure. The findings from this study may also feed into the next *Digital Strategy for Schools*, currently being developed by the Department of Education.

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