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## The Disconnected: COVID-19 and Disparities in Broadband Access for Higher Education Students

In early 2020, the COVID-19 pandemic forced many higher education institutions (HEIs) across the world to cancel face-to-face teaching, close campus facilities, and displace staff and students to work and learn from home. Given the persistent nature of the pandemic, and the threat of further waves of the virus, many HEIs continued to deliver courses online and/or use a blended learning approach. While these modes of delivery have existed within the higher education sector for many years, the scale of such change is unprecedented and raises a number of important issues. One such issue is potential disparities in access to digital learning resources for students residing at home, including high-speed quality broadband. Within this context, this research considers higher education students in Ireland 'at risk' of poor access to high quality internet connectivity by combining national data on the domiciles of students enrolled in Irish HEIs with detailed spatial data on broadband coverage.

### Key Findings

Overall the research finds that one-in-six higher education students in Ireland come from areas with poor broadband coverage, with large differences by geography and by HEI. For example, while only 3.3% of IT Tallaght students come from poor broadband coverage areas, this is in stark contrast to St Angela's College, where 33.0% of students are classified as at risk. The corresponding proportion for NUI Galway is 22.1%. In addition, it is also important to note that disparities in broadband access is only one possible cause of the digital divide and some HEIs that have good access may face alternative challenges. Indeed, our analysis shows that there is considerable variation in the proportion of socioeconomically disadvantaged students by HEI. This could be associated with other issues around digital learning resources, including affordability of, and access to, appropriate computer equipment, suitable home learning environments, and/or digital literacy skills. Furthermore, our research also finds that students from areas with the lowest levels of broadband coverage are more likely to be socioeconomically disadvantaged on average.

### Policy Implications

From both a public policy and HEI management perspective, it is important to understand variation in the quality of home broadband connectivity and to identify groups of students that may be at risk in terms of a pedagogical digital divide. While it is difficult to identify the exact download speed that a student would need to be able to fully engage with all aspects of online learning, particularly synchronous interactive video sessions, it is highly likely that students using basic technologies will be impacted by connection issues. This would be exacerbated if there are multiple internet users in the same or neighbouring households, where contention and congestion can severely impact download speeds on technologies such as DSL. With continued uncertainty in relation to the pandemic, and the possibility that many students may have to continue to learn remotely, those with poor quality fixed or mobile broadband services will continue to be at a disadvantage. Indeed, this digital divide has the potential to create significant inequalities in education at many levels, particularly for students from lower socioeconomic backgrounds, who are more likely to experience issues in relation to access to, and affordability of, broadband services and appropriate equipment.