Technology and student achievement bibliography

KewalRamani, A., Zhang, J., Wang, X., Rathbun, A., Corcoran, L., Diliberti, M., and Zhang, J. (2018). *Student Access to Digital Learning Resources Outside of the Classroom* (NCES 2017-098). U.S. Department of Education. Washington, DC: National Center for Education Statistics. Retrieved [date] from https://nces.ed.gov/pubsearch/pubsinfo.asp?pubid=2017098

Hampton, K. N., Fernandez, L., Robertson, C. T., & Bauer, J. M. (2020) Broadband and Student Performance Gaps. James H. and Mary B. Quello Center, Michigan State University. https://doi.org/10.25335/BZGY-3V91

> *We find that students who do not have access to the Internet from home or are dependent on a cell phone alone for access perform lower on a range of metrics, including digital skills, homework completion, and grade point average. They are also less likely to intend on completing a college or university degree. A deficit in digital skills compounds many of the inequalities in access and contributes to students performing lower on standardized test scores, such as the SAT, and being less interested in careers related to science, technology, engineering, and math.*

Caldarulo, M., Mossberger, K., Howell A., (2023). *Community-wide broadband adoption and student academic achievement.* Telecommunications Policy 47 (2023) 102445

Daoud, R., Starkey, L., Eppel, E., Vo, T. D., & Sylvester, A. (2021). The educational value of internet use in the home for school children: A systematic review of literature. Journal of Research on Technology in Education, 53(4), 353–374. https://doi.org/10.1080/15391523.2020.1783402

> *Annotation: Overall, there were significantly more positive correlations or outcomes reported. We conclude that there is educational value in home Internet use and the value is influenced by the nature of online activities.*

Hampton, K. N., Robertson, C. T., Fernandez, L., Shin, I., & Bauer, J. M. (2021). How variation in internet access, digital skills, and media use are related to rural student outcomes: GPA, SAT, and educational aspirations. Telematics and Informatics, 63. https://doi.org/10.1016/j.tele.2021.101666

> *We found that Internet access is indirectly related to academic achievement through higher rates of homework completion and interest in school (H1). Although students with broadband access at home leave homework incomplete less often and are generally more interested in school, the relationship to GPA is relatively trivial. However, the relationship between having better home Internet access and performance on a pen-and-paper, nationally standardized, skills assessment - the SAT Suit - was more substantive. Because of lower interest in school and less success at homework completion, students with poorer access to the Internet tend to perform lower on the SAT. This was true of all students who did not have home broadband but was especially pronounced for those who were dependent on a cell phone for home Internet access.*

National Forum on Education Statistics. (2022). *Forum Guide to Digital Equity* (NFES 2022098). U.S. Department of Education. Washington, DC: National Center for Education Statistics.

> *Use of the Council for Chief State School Officers data elements to track digital equity.*

Hampton, K. N., Hales, G.E., & Bauer, J. M. (2023). Broadband and Student Performance Gaps After the COVID-19 Pandemic. James H. and Mary B. Quello Center, Michigan State University. https://doi.org/10.25335/r71b-c922

> *This report builds on the findings of a study on Broadband and Student Performance Gaps released in the weeks before the start of the COVID-19 pandemic (Hampton et al., 2020). That report highlighted the low levels of broadband access by rural Michigan students and the detrimental impact from a lack of access on their academic performance, educational aspirations, career choices, and general well-being. In 2022, we returned to the same schools that we first surveyed in 2019. We asked students about their experience with Internet technologies and with learning from home during the pandemic.*

Katz, V., Rideout, V. (2021). Learning at Home While Under-connected. Education Policy Program and New America Foundation, Washington, D.C. https://www.newamerica.org/education-policy/reports/learning-at-home-while-underconnected/

> *Families' and students' unequal access to broadband and digital devices have concerned educators and policymakers for years. But when the pandemic shifted schooling into remote learning, a stable internet connection and functional digital device were no longer part of a quality education; they became the only way for families with school aged children to continue learning at home. As remote learning stretched from weeks, to months, and then to whole school terms, it became clear that digital inequality was disproportionately affecting the ability of students in lower-income families to remain engaged in school virtually. Some of these families' digital equity issues have been well documented, but there is still much more that policymakers and educators need to know about their experiences learning at home during the pandemic, and their priorities for school next year.*