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COMMENTARY



What it means to be “under-connected” in lower-income families

Vikki S. Katz

Department of Communication, Rutgers University, New Brunswick, NJ, USA

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Constrained access to the internet and devices that connect to it, or *digital inequality*, is more complex than the binary framing of a “digital divide” can possibly capture. If connectivity is a continuum along which all technology users are placed (Livingstone & Helsper, 2007), then it stands to reason that some users are “under-connected,” (Rideout & Katz, 2016), relative to how connected they would like to be. I argue that scholars need to prioritize understanding the realities of being under-connected, adjusting their research methods accordingly, if we are to fully account for how digital inequality impacts both children and adults.

I will also argue that scholars need to consider digital inequality in context of social relationships, not as individualized experiences. In the case of children, family context is especially crucial to how digital inequality is experienced. Children’s constrained access to technology is never entirely independent; after all, they rely on parents to purchase devices, prioritize monthly payments for internet access, or get them to libraries if the family doesn’t have internet at home. Less obviously, children depend on parents and siblings as sources of support for learning with technology. As a result, family interactions are fundamental to understanding digital inequalities among children, and to identifying potential pathways for resolving these social disparities.

I primarily base my comments on a study I led between 2013 and 2016 to investigate how low-income U.S. parents and their school-age children make decisions about adopting the internet and related devices, and how they integrate those technologies into everyday routines. I was particularly interested in how families responded to national, state, and local policy initiatives that target them with subsidized technology offers to empirically assess how well those digital equity programs are addressing families’ needs.¹

My team and I began by conducting in-depth, qualitative interviews with 170 Mexican-heritage parents and their focal child in grades K to 8 ($N = 336$) who qualified for reduced-cost school meals² in three school districts in Arizona, California, and Colorado (see Katz & Gonzalez, 2016a, 2016b). With the Joan Ganz Cooney Center at Sesame Workshop and Vicky Rideout, we developed questions for a national survey informed by the interview findings, thereby ensuring that we covered key issues for families and not just what we as researchers thought was important. In early 2015, we deployed a nationally representative telephone

survey of 1191 lower-income³ U.S. parents with a child in the same grades (Rideout & Katz, 2016). Our study is unusual for two key reasons: First, the robust quality of our formative qualitative research strengthens our ability to triangulate and interpret survey findings. Second, by limiting our samples to lower-income parents and children, we were able to focus directly on the specific contours of digital inequality and how they impact families' technology experiences.

Beyond access: conceptualizing “under-connectedness”

In other publications, Carmen Gonzalez and I have defined *meaningful digital connectivity* as possessing “the requisite technical skills to engage new communication technologies and mobilize information resources to address a broad range of everyday goals and concerns” (Katz & Gonzalez, 2016a, p. 238). Fundamental to that definition is having meaningful access to the internet and devices that enable connection to it.

We found that researchers can no longer rely on simple yes/no questions to assess whether families have access; the quality and consistency of connectivity are critical to interpreting what access can actually offer. Almost all (94%) parents who took the survey reported that their families had some kind of internet access (e.g., via a computer at home or a mobile device with a data plan). The same was true for families who participated in the qualitative interviews; only eight of 170 families were going online for the first time through the subsidized internet offers introduced in their district (Katz & Gonzalez, 2016b; Rideout & Katz, 2016).

Had we stopped at basic access questions, we would have missed that the majority of interviewed and surveyed families are under-connected in one or more ways. Among surveyed parents with internet access through a computer (i.e., *home access*), 52% said their internet was too slow, 26% that too many people share the computer to have enough time on it, and 20% had had their service disconnected in the last year due to non-payment. And among the one-quarter (23%) of surveyed parents who only access the internet through a smartphone or tablet (i.e., *mobile-only access*), 29% had hit their plan data limits in the past year, 24% had had their service disconnected in the last year due to non-payment, and 21% that too many people share the device to have enough time on it. These findings reflect what Amy Gonzales (2016) has called the “dependable instability” of low-income Americans' internet connectivity.

Identifying who is under-connected (and how) also requires differentiating between the affordances of devices that they have available to get online. Our findings demonstrate that mobile-only connectivity should also be treated as a form of under-connectedness. Families who only have access via a smartphone or tablet use the internet less frequently, and for a narrower set of activities, than families who go online via a computer at home.

These differences are not trivial. Mobile-only parents were significantly less likely to shop online (36%, vs. 66% with home access), use online banking or bill-paying (49%, vs. 74%), and apply for jobs or services online (42%, vs. 56%). Online shopping can save parents money, online banking can save them time, and applications for many services and jobs are now exclusively online. As such, mobile-only parents and children are likely less connected to opportunities that help families to get by and to get ahead. Likewise, children in mobile-only families were significantly less likely to use the internet daily (31%, vs. 51% with home access)

or to seek information online about things they are interested in (35%, vs. 52%; Rideout & Katz, 2016). Daily use is positively associated with digital skill development (Livingstone & Helsper, 2007), and “interest-driven learning” experiences are associated with greater motivation and learning confidence in children (Barron, Gomez, Pinkard, & Martin, 2014). Our findings therefore suggest that even relative to their lower-income peers, children with mobile-only access are experiencing more acute digital inequality.

Family learning environments and children’s digital inequality

Parents and children can be under-connected due to inconsistent and low-quality internet connectivity, limited functionality of devices or opportunities to use them, or by having mobile-only access. All of these dimensions of under-connectedness affect how meaningful digital connectivity is to children’s and parents’ everyday lives and access to social resources. Children’s interactive exchanges with parents and siblings as they use technology together are at the core of what makes their digital connectivity meaningful because they frequently scaffold each other’s digital skills development (Katz, Moran, & Gonzalez, *under review*). The relational context of technology use is therefore critical to explaining variations in under-connectedness among lower-income children – and can be a resource for efforts to resolve such challenges.

Our survey results reinforced our interview findings with regard to how intergenerational collaborations around technology enable both parents and children to gain confidence, new skills, and to accomplish goals online. Among surveyed families where the parent and focal child both use the internet, 77% of parents have helped their children use technology; 53% say their children have helped them to do the same. Among families with more than one 6- to 13-year-old and a computer in the home, 81% of siblings help each other learn about computers or mobile devices either “sometimes” or “often.” These family dynamics are related. We find that the nature of parent–child interactions around technology predicts the activities that school-age siblings do together (Katz et al., *under review*). Parental mediation is therefore only one part of the family technology story; children are guided by parents, but they are also actively brokering their parents’ and siblings’ technology experiences. Fluid exchanges of expert and learner roles during joint technology engagement can facilitate powerful learning experiences for all family members (Clark, 2011; Katz, 2014; Takeuchi, 2011).

For families often defined by their deficits – in income, parental education, and so forth – their frequent and intense technology engagement should be treated as an asset for efforts to reduce digital inequality. For example, local organizations can expand on families’ existing technology practices by providing relevant opportunities for technical support or further skill development (Helsper & van Deursen, 2017; Katz & Levine, 2015). These sorts of possibilities for addressing under-connectedness emerge by moving beyond a binary framing of the digital divide to a spectrum of possible connectivity. By researching digital inequality in ways that more closely match the lived experiences of children and families, scholars are also better positioned to contribute to policy and program initiatives that support families in developing meaningful digital connectivity.

Notes

1. See www.digitalequityforlearning.org for more information on the project design and findings.
2. The income threshold to qualify for digital equity initiatives is often tied to eligibility for subsidized school meals; e.g., www.everyoneon.org/about/c2c/.
3. “Lower income” was defined as living below the median income for U.S. families with one or more children, which was slightly under \$65,000 (i.e., \$63,767); see www.census.gov/hhes/www/cpstables/032015/faminc/toc.htm.

Disclosure statement

No potential conflict of interest was reported by the author.

Notes on contributor

Vikki S. Katz is associate professor in the Department of Communication and affiliate graduate faculty in the Department of Sociology, at Rutgers University. She is also a senior fellow at the Joan Ganz Cooney Center at Sesame Workshop. Her research focuses on technology adoption and engagement in low-income and immigrant families; learn more about her work at vikkikatz.com and digitalequityforlearning.org.

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