

Theorizing the digital divide: Information and communication technology use frameworks among poor women using a telemedicine system [☆]

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Abstract

In this paper, we argue that reconceptualizing the “digital divide” from the perspective of those with the least access requires that the policy concern shift from disparities in access to computers and the Internet toward an examination of how Internet information resources are differentially accessed and used. Drawing on an archive of clinical narrative descriptions documenting training sessions related to eight African American, low-income women involved in a clinical trial of a telemedicine system intervention for monitoring cardiovascular disease risk factors implemented at Temple University; we illustrate the shortcomings of a limited conceptualization of access. Rather, we propose a model that depicts information and communication technology (ICT) access in terms of four interrelated elements: (a) information delivery approaches (how information is shared, disseminated and accessed through the use of e-communication technologies), (b) technology use contexts (what are the specific settings in which technology is accessed), (c) social networks (what is the role of social networks in shaping access to and use of ICTs) and (d) the social policies and institutional mechanisms regulating technology access (specifically targeted to ICT use as well as more generally). This model highlights the embeddedness of ICT use in the geography of people’s daily lives and suggests a number of policy concerns related to how ICTs may mitigate or exacerbate economic and political inequalities in the United States.

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1. Overview

Information and communication technologies (ICTs) are radically changing the way that healthcare in the United States is delivered, with the advancement of telemedicine among the most prevalent changes. Telemedicine involves using ICTs to provide health care to patients in

settings that are geographically discontinuous from the locus of health care institutions. As such, telemedicine can be seen as an inherently geographic technology. In fact, geographers (and others) have suggested that there is an urgent need to analyze critically the effects of telemedicine systems on health care delivery and outcomes (Cutchin, 2002; Crampton, 1999; Andrews and Kitchin, 2005). Many people studying telemedicine primarily focus on its potential benefits (Cutchin, 2002). Yet as Crampton (1999) argues, all technologies have both totalizing and democratizing tendencies. A number of researchers note the transformative effects of ICTs for reorganizing institutionalized health care services and health care provider roles while simultaneously creating new cyberspace

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arrangements that comprise new realms of care (Cutchin, 2002; Halford and Leonard, 2006; Andrews and Kitchin, 2005). Cutchin (2002, p. 12) argues that the “geography of virtualization” raises ethical concerns related to access and connectivity. In particular, Kim (2005) suggests that there are ethical concerns raised by the potential for telemedicine to widen health disparities given that there are also disparities in people’s access to ICTs.

We reflect on these ethical concerns by considering the issue of how society weighs the tensions between the right of people to health care, the costs and benefits of providing care, and people’s right to privacy. Specifically, we argue that this issue can not be adequately addressed without reframing the “digital divide” from the perspective of some of those who not only experience the least access to information and communication technologies, but also experience significant health care disparities – both of which are due to their wider economic, political and social marginalization. The gap between those with the most and those with the least access to information and communication technologies (ICTs) is commonly referred to as the “digital divide.” The digital divide is most associated with other indicators of inequality such as income, gender, race/ethnicity and geographic location. The larger societal concern is that lack of access to the computers and the Internet as well as related information flows will exacerbate other forms of social, economic, and political marginalization.

The conceptualization of the digital divide has expanded from an earlier, more limited focus on differential access to computers and the Internet to a broader understanding of access in terms of infrastructure, usage, and information flows (see van Dijk, 2005; DiMaggio et al., 2001; Hargittai, 2003; Lenhart and Horrigan, 2003; Jackson et al., 2003; De Haan, 2004). However, Servon (2002) notes that policy makers have continued to focus on ICTs in terms of lack of access to infrastructure by concentrating on finding the means to provide individuals and communities with computers and Internet service as well as training in basic computer literacy.

But this research is limited in its ability to produce nuanced policy prescriptions because of a lack of geographic analysis. For example, while scholars have agreed that limiting the concept of access to equate solely with location and quality of ICT infrastructure is insufficient (Hargittai, 2002), the geographic dimensions of ICT and social inequality are largely unexamined (Andrews and Kitchin, 2005). A number of geographers have begun to reconceptualize the digital divide in terms of people’s embeddedness in places as well as by exploring how digital divides are uneven across multiple scales (Crampton, 2003; Warf, 2001). Geographers have also considered the implications of virtual communications for reconfiguring geographies of everyday life (Adams, 1997, 1998; Dodge, 2001; Dodge and Kitchin, 2005a,b; Hillis, 1998). This growing body of work, however, does not focus specifically on how people challenge and alter their strategies with respect to their own purposes for using ICTs. In order to

get at these geographic issues, a different scale of analysis is needed. Gilbert and Masucci (2004, 2006) have shown that examining individual perspectives of poor women who are navigating institutions to gain educational, economic, and health services needed for survival gives insight about their self-efficacy with respect to using geographic information specifically and ICTs more generally. This work underscores the need to differentiate among groups of poor women, whose frameworks are inextricably intertwined with their highly localized circumstances and social contexts (Gilbert and Masucci, 2006, p. 758).

In this paper, we intend to explore the spatiality of the digital divide from the perspective of low-income racialized minority women living in inner cities – many of whom are elderly. This is a group that is typically characterized as being the most negatively impacted by the digital divide (NTIA, 2002). Specifically, we want to understand these women’s frameworks for ICT use – that is how their daily experiences, interests, and knowledge shape how they do or would like to use ICTs and the related information flows. Our focus on their use of a telemedicine system reflects the societal trend for many poor, racialized women to encounter ICTs as a part of their negotiation of education, health and social services as well as for elderly women to first encounter ICTs in the context of changing modalities of the delivery of health care (Kreps, 2005).

We will draw on an archive of clinical narrative descriptions documenting training sessions related to eight women (ages 37–71) involved in a clinical trial of a telemedicine system intervention for monitoring cardiovascular disease risk factors implemented at Temple University in 2004 (for further discussion see Masucci et al., 2006; Kashem et al., 2006). The archive of clinical narratives comprises part of the study record for a digital divide sub-study connected with a larger clinical investigation related to the use of an Internet Telemedicine System that monitors risk factors for patients with cardiovascular disease. The objective of the sub-study was to assess the effectiveness of an ICT training process to provide a foundation in basic computer skills and training in the use of the telemedicine system for users with little prior ICT experience. We will examine perspectives related to ICTs found in narrative descriptions of a small cohort of trainees consisting of the poorest and least experienced users in the sub-study to examine the digital divide beyond the facets of access to computers and the Internet and differential usage. We will draw on the archive of clinical narratives among the women to outline an alternative model building on geographical conceptualizations of the digital divide that depicts ICT access in terms of the interconnections among four elements: (a) information delivery approaches (how information is shared, disseminated and accessed through the use of e-communication technologies), (b) technology use contexts (what are the specific settings in which technology is accessed), (c) social networks (what is the role of social networks in shaping access to and use of ICTs) and (d) the social policies and institutional mechanisms regulating technology access

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