COMPUTING IN SOCIETY

CHAPTER TWO

Gender, Racial, and Socioeconomic Dimensions of Computing Access and Representation

Introduction

Significant disparities exist in access to technology and representation in the technology sector along gender, racial, and socioeconomic lines (Goode, 2010). This chapter will explore the underlying factors driving these digital divides and their implications.

Gender Digital Divide

While computer usage has grown significantly among both genders, studies consistently find that males demonstrate greater technology access, skills, and self-efficacy compared to females (Hargittai & Shaw, 2015; Ritzhaupt et al., 2013). A national survey showed just 17% of female respondents reported being expert internet users versus 31% of males (Smith, 2014). These gaps begin early, with classroom research indicating boys dominate technology use and demonstrate more computing interest and confidence (Sáinz & Eccles, 2012).

Socio-cultural expectations and structural barriers contribute to the gender digital divide. Parents may encourage more technology exploration in boys and purchase computers for them more often (Hohlfeld et al., 2017). Mass media also lack diverse female technology role models. In schools, gendered computer science enrollment and culture can inhibit girls despite having equal capabilities (Cheryan et al., 2013). Workplace biases including pay gaps, discrimination, and harassment also disadvantage women in technology fields (Burke & Mattis, 2007).

Racial Digital Divide

Similarly, studies document lower rates of internet access and technology adoption among ethnic minority groups compared to Whites (File & Ryan, 2014; Brown et al., 2011). Pew Research (2021) found just 71% of Black Americans reported owning a desktop or laptop versus 82% of Whites. Discrimination in educational opportunities from an early age contributes to these racial digital disparities (Reich & Ito, 2017). Further, lower incomes among minority populations limit

technology purchasing power. However, smartphone access is bridging some digital divides. Among youth, Black and Hispanic social media usage now equals or exceeds White rates (Anderson & Jiang, 2018).

Socioeconomic Digital Divide

Household income strongly predicts technology access and digital skills (van Deursen & van Dijk, 2019). One study found just 52% of low-income students had home computer access versus 92% of higher income peers (Mardis et al., 2019). Public access can help address affordability barriers. However, low-income schools often lag in computer resources impeding skills development (Gorski, 2009). Among adults, lower education and incomes are linked to less frequent and less diverse internet use (Hargittai & Dobransky, 2017). These socioeconomic disparities exacerbate inequalities.

Representation in the Technology Sector

Mirroring broader access divides, women, minorities, and those from lower socioeconomic backgrounds remain underrepresented in technology careers (Ashcraft et al., 2016). Women comprise just 25% of computing professionals (Kirkpatrick, 2017). African Americans and Hispanics make up 9% and 7% respectively, though total over 24% of the workforce (Davidson, 2016). Class barriers like unpaid internships and elite university recruitment limit socioeconomic diversity. Implicit biases, discrimination, and non-inclusive work cultures contribute to low representation and high turnover among marginalized groups in tech (Scott et al., 2017).

Conclusion

While technology has expanded opportunity, it has not equally benefited all groups. Ongoing efforts to address digital divides along gender, racial, and socioeconomic lines remain critical to creating an equitable and inclusive computing landscape.

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