

# Bridging the 21st Century Digital Divide

Sylvia E. Rogers<sup>1</sup>

Published online: 30 March 2016

© Association for Educational Communications & Technology 2016

Over the last year, AECT's Graduate Student Assembly (GSA) has sponsored several webinars on a variety of topics such as gaming, creativity, medical education, and the digital divide. This column was inspired by one of those webinars titled *Perspectives on the Digital Divide and Global Citizenship* by Heggart and Subromony (2015). It discusses the current state of the digital divide and provides two successful exemplars of programs discussed in the webinar that could narrow the gap as well as a call for continued research on this issue.

## An Extremely Brief History of the Digital Divide

The digital divide is an important issue for social justice in the twenty first century. It was originally defined during the Clinton administration as inequitable access to computers and the Internet. The term was coined by Allan Hammond, then a law professor at New York Law School and Larry Irving, a member of the National Telecommunications and Information Administration (NTIA) in 1995 (see: <http://www.edutopia.org/digital-generation-divide-connectivity>). Now twenty years later, the digital divide has evolved beyond access to technology and has expanded to include inequalities in technology skills and how it is used. In essence, there is a gap related to the control of digital production tools and the

appropriate context to use those tools. This gap exists for people of color, the economically disadvantaged, and other marginalized groups (Schradié 2011; Subramony 2007, 2014).

## Technology is Power

We live in an age where information and computing technologies (ICT) are considered to be a primary means of production. ICT can be a positive influence for individuals. Skills in technology can be instrumental for individuals to increase their social position and capital. On the other hand, lack of access and skills in ICT can further disenfranchise already marginalized groups (Subramony 2007, 2011, 2014). Therefore, developing skills in technology is vital for students in K-12 and beyond. Educators need to consider the moral, social, and cultural implications of teaching technology to diverse groups of learners.

## Production Skills versus Consumption Skills

In reference to the current digital divide, scholars refer to differences between consumption and production skills in ICT (Hargittai 2003; Schradié 2011; Selwyn. 2004; Subramony 2014). Consumption skills primarily refer to browsing Internet sites, and reading content. Production skills, however, focus on the creation of new content. For example, individuals with ICT production skills could write a blog, create a database, code a website, or produce video using software (Schradié 2011; Subramony 2014).

---

✉ Sylvia E. Rogers  
sylviaerogers@southalabama.edu

<sup>1</sup> University of South Alabama, Mobile, AL, USA

## The Virtuous Spiral and the Vicious Circle

The Virtuous Spiral (Subramony 2014), as illustrated in Fig. 1, depicts how access to technological means of production (MoP) can lead to increased opportunity to develop skills for the information age. This in turn leads to the increased professional development and the raising of an individual's socio-economic status.

Unfortunately, access to technology does not always lead to improved technology skills among many marginalized learners. Rather, increased technology use is mediated by a variety of contextual factors, such as gender, cultural traditions, perception of need, and economic class (Schradie 2011; Subramony 2007).

The opposite of the Virtuous Spiral is the Vicious Circle (Subramony 2014). The Vicious Circle, as represented in Fig. 2, illustrates what happens when technology alienates. Traditionally inclusive technology discourse has not always been mainstream (MS). As a result, lack of engagement can occur when educators do not practice inclusive strategies in teaching technology. Alienation can be further exacerbated by a lack of exemplars and role models. Learners could no longer be interested in learning technology because it is not part of their self-identity (Subramony 2014).

### Bridging the Gap

As research continues on inequality in the use of ICT, hopefully more programs will be developed to narrow this gap. Two excellent examples are Australia's *Justice Citizens* civic education program and *Code.org* from the United States.

**Justice Citizens** Justice Citizens demonstrates the empowering role of technology. This program was implemented to increase active citizenship for students at a high school in Western Sydney, Australia, where students struggled to be engaged in learning (Heggart 2015). The goals for this program were to give students a choice about what they

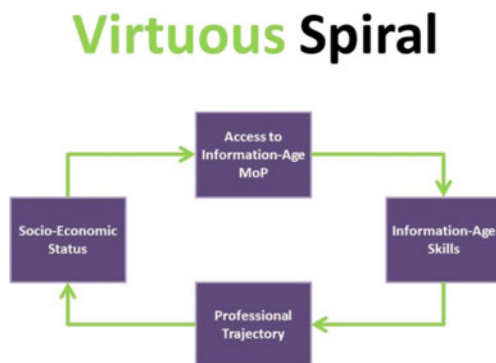


Fig. 1 The virtuous spiral (used with permission of the author)

## Vicious Circle

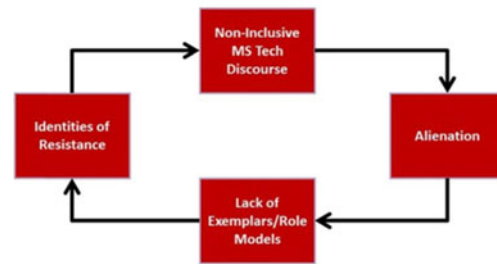


Fig. 2 The vicious circle (used with permission of the author)

should learn, be able to participate in a wider community, and have the opportunity to make meaningful decisions (Heggart 2015). The students created short films on community issues and the finished videos were displayed at a neighborhood film festival.

This program was successful in large part because students were empowered to choose their own projects. Furthermore, because of their increased engagement, they learned a variety of ICT production skills such as blogging, and the shooting and editing of video (Heggart 2015).

**Code.org** Code.org (<https://code.org>) is a non-profit organization founded in 2013 by brothers, Ali and Hadi Partov, to increase access and promote computer science in classrooms throughout the United States. The founders of Code.org want to increase participation by women and people of color in the computer science fields. In 2013, they sponsored the “Hour of Code” to promote computer science throughout the United States (Code.org 2015).

This has been an effective initiative because of the focus on production skills and an inclusive approach for participation. According to co-founder, Hadi Partov in his 2014 TEDx talk, “Computer science is not just vocational for getting a job, but in this day and age, computer science is fundamental for any job you want to have for the next 20–30 years” (Partov 2014).

### Call for Research

Research should continue to examine the digital divide as it evolves. For instance, Degennaro and Brown (2009) examined how adolescents of color became engaged in learning technology in an after school web design class by Project HOME in North Philadelphia (<https://projecthome.org/>). They found that history and culture mediated the developing identity of technology users. In order for youth to develop an identity as a technology user, they have to be able to create and learn with technology (Degennaro and Brown 2009). More studies of this type are necessary to see how to narrow this gap.

## Conclusion

Technology has the power to be a force for positive change for all learners, but if non-inclusive strategies are used to teach technology skills, it could facilitate the continued marginalization of economically challenged and culturally diverse learners. Educators need to pay close attention to the characteristics, cultural perspectives, needs, and attitudes of students.

## References

- Code.org. (2015). Retrieved from <https://code.org/>
- Degennaro, D., & Brown, T. L. (2009). Youth voices: connections between history, enacted culture and identity in a digital divide initiative. *Cultural Studies of Science Education*, 4(1), 13–19. doi:10.1007/s11422-008-9108-y.
- Hargittai, E. (2003). The digital divide and what to do about it. In D. C. Jones (Ed.), *New economy handbook* (pp. 821–839). Bingley, United Kingdom: Emerald Group.
- Heggart, K. (2015). Contesting young peoples' participation and citizenship at the start of the 21st century. In P. Kelly & A. Kamp (Eds.), *A critical youth studies for the 21st Century* (pp. 460–476). Leiden: Brill.
- Heggart, K. & Subramony, D.P. (AECT 2015). Perspectives on the digital divide and global citizenship. In *AECT Webinar Series: Accelerate Learning*. Retrieved from <https://vimeo.com/130771002>.
- Partovi, A. (TEDxRainier, 2014). Computer science is for everyone. In *TEDxRainier*. Retrieved from <https://www.youtube.com/watch?v=m-U9wzC9xLk>.
- Schradie, J. (2011). The digital production gap: the digital divide and Web 2.0 collide. *Poetics*, 39, 145–168.
- Selwyn, N. (2004). Reconsidering political and popular understandings of the digital divide. *New Media & Society*, 6, 341–362.
- Subramony, D. P. (2007). Understanding the complex dimensions of the digital divide: lessons learned in the Alaskan artic. *Journal of Negro Education*, 76(1), 57–67.
- Subramony, D. (2011). Socio-cultural issues in educational technology integration. *Colleagues*, 6(1), Article 10. Retrieved from <http://scholarworks.gvsu.edu/colleagues/vol6/iss1/10>.
- Subramony, D.P. (2014) *Reframing the digital divide within a 'Flat World' Context: The McJulien Lecture*. Paper presented at the Association for Educational Communications and Technology (AECT) International Convention 2014, Jacksonville, FL.