Chapter 11

Digital Literacy Concepts and Definitions:
Implications for Educational Assessment and Practice

Patricia Boechler
University of Alberta, Canada

Karon Dragon
University of Alberta, Canada

Ewa Wasniewski
University of Alberta, Canada

ABSTRACT

This article presents a scan of the concept of "digital literacy" and discusses issues encountered in the literature, including: a) challenges in the research base for conceptualizing digital literacy, b) the multiplicity of frameworks which attempt to situate digital literacy but lack sound theoretical origins, and c) wide disagreement among stakeholder disciplines, including education, media studies, library information studies and computing/ICT studies as to what specific skills or knowledge should fall under the umbrella term of digital literacy. The review focuses on the field of education and briefly examines the inconsistent local, national, and international curriculum standards used to both instruct and assess students. It concludes with a presentation of a brief assessment tool, the Software Recognition Test, which preliminary research suggests has predictive validity for educational use and could, with further development, be used for low stakes assessment of digital literacy for K-12 or post-secondary settings.

1. INTRODUCTION

Learners possess a wide variety of skills, experiences, interests, attitudes and comprehension about digital tools, information systems and content (Covello, 2010). Instructional designers, teachers and researchers may desire information on learner competence/knowledge in the area of digital literacy prior to engaging them in instruction or educational research.

This article presents a scan of the concept of "digital literacy" and discusses a number of issues encountered in the literature, including: a) challenges in the research base for conceptualizing digital literacy, b) the multiplicity of frameworks and models which attempt to situate digital literacy but lack sound theoretical origins, and c) wide disagreement among stakeholder disciplines, including education, English and media studies, library information studies and computing/ICT studies as to what specific skills, knowledge and understandings should fall under the umbrella term of digital literacy.

Considering the importance of this issue for preparing individuals to be competitive in increasingly digital global markets, our investigation focuses on the field of education and briefly examines the inconsistent local, national, and international curriculum standards used to both instruct and assess students. We conclude with a presentation of a brief assessment tool, the Software Recognition Test, which our preliminary research suggests has predictive validity for educational use and could, with further development, be used for low stakes assessment of digital literacy for K-12 or post-secondary settings.

2. THE EVOLUTION OF DIGITAL LITERACY TERMINOLOGY

Although the definitions of digital literacy share some common elements, at present, there is no overall consensus on the skill sets or knowledge base that might fully characterize the overall scope of digital literacy. The term and concepts related to digital literacy have emerged from prior conceptualizations and terms such as computer literacy, information literacy, and network literacy. Currently, the term digital literacy is being applied to, e-literacy, digital competency and multimodal literacy which all describe different aspects of fluency within reading and navigation of digital materials (Beetham, 2010). Figure 1 presents a chronological depiction of the evolution of terms and definitions intended to capture the essence of learners' capacities to interact with diverse technologies in a variety of contexts. This is followed by a more detailed description of each term.

2.1. Computer Literacy

According to Childers (2003), the first article on computer literacy was published in the late 1970's with the use of the term peaking in the mid 1980's, followed by a steady decline until the late 1990's. Computer literacy was traditionally defined as the ability to use tools to manipulate data and write small codes (Leahy & Dolan, 2010). Koehler and Mishra, (2009) shifted, "…beyond traditional notions of computer literacy to require that persons understand information technology broadly enough to apply it productively at work and in their everyday lives, to recognize when information technology can assist or impede the achievement of goals, and continually adapt to changes in information technology" (p. 64). The ongoing changes in information technology make defining the skills and knowledge in computer literacy a moving target. Simonson, Maurer, Montag-Torardi and Whitaker [30] defined computer literacy as 'an understanding of computer characteristics, capabilities and application, as well as an ability to implement this knowledge in the skillful and productive use of computer application'"(Ferrari, Punie & Redecker, 2012, p. 81). When computers were less common in everyday life, computer literacy was defined as being able to write computer programs. This definition now has moved away from specific computer skills and towards a more general understanding of being able to use computer applications to solve everyday problems (Barthomew, 2004).

2.2. Information Literacy

Information literacy originally stemmed from the field of library and information studies. "In general

Related Content

Residential Electricity Consumption Prediction Method Based on Deep Learning and Federated Learning Under Cloud Edge Collaboration Architecture

Wei Wang, Xiaotian Wang, Xiaotian Ma, Ruifeng Zhaoand Heng Yang (2024). *International Journal of Gaming and Computer-Mediated Simulations (pp. 1-19).*

www.irma-international.org/article/residential-electricity-consumption-prediction-method-based-on-deep-learning-and-federated-learning-under-cloud-edge-collaboration-architecture/336846

Serious Games Applications for Cultural Heritage: Benefits and Main Design Issues

Paola Falcone (2022). *Handbook of Research on Promoting Economic and Social Development Through Serious Games (pp. 311-333).*

www.irma-international.org/chapter/serious-games-applications-for-cultural-heritage/300634

Flip-Game Engineering and Technology Methodology

Milagros Huerta Gómez de Merodio, Juan Manuel Dodero, Nestor Mora Núñezand José Mª Portela Núñez (2023). *Research Anthology on Game Design, Development, Usage, and Social Impact (pp. 839-871).*

www.irma-international.org/chapter/flip-game-engineering-and-technology-methodology/315519

Strategies to Teach Game Development Across Age Groups

Lakshmi Prayaga, James W. Coffeyand Karen Rasmussen (2011). *International Journal of Gaming and Computer-Mediated Simulations (pp. 28-43).*

www.irma-international.org/article/strategies-teach-game-development-across/54349

Space, Perception, Action

 (2018). *A Simplex Approach to Learning, Cognition, and Spatial Navigation: Emerging Research and Opportunities (pp. 1-12).*

www.irma-international.org/chapter/space-perception-action/187749