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Digital Competence: A Pathway to Mitigating the Digital Divide

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Introduction

Teachers at this level are expected to possess advanced digital competencies to effectively implement innovative teaching practices and address the diverse needs of students. Moreover, faculty members must develop strong digital competence to effectively use educational technologies. Digital pedagogical competence ensures the effective delivery of appropriate e-content and supports curriculum design through the integration of suitable technologies and instructional methodologies. It also addresses ethical considerations in digital environments (Kirkwood & Price, 2020). To achieve these goals, higher education institutions must prioritise faculty training in innovative teaching methods and digital tools. Partnerships with industry can provide students with practical engagement, internships, and certifications that align with market needs (Anderson & Johnson, 2019). Additionally, digital equality can be achieved by investing in vigorous smart edtech infrastructure for each level of socioeconomic background, and they can also get a smart, quality education

Objectives of the Study

- To study the conceptual background of digital competence and digital divide.
- To explore the meaning of digital equity and its relevance in a globally interlinked society.
- To explore how far digital competence can mitigate the digital divide in the world.
- To know the association between social digital inclusion and digital competence, which makes it possible to improve digital equity.

Conceptual Perspective of Digital Competence

Digital competence, as defined in the previous section, consists of a set of knowledge, skills, attitudes and behaviours required by individual to engage, navigate and create in a digital world. Digital competence expressed as a construct is built beyond just the technical side of using tools, it involves not only the capacity to use and make sense of digital tools but the cognitive, social, and ethical dimensions of using them. The development of digital competence is essential to fostering equitable ways to participate in a digitally mediated society (Ferrari, 2013; Voogt et al., 2017).

Concept and Scope of Digital Competence

Digital competence is essentially perceived as: an individual's capacity to use digital technologies to access, evaluate, create, and communicate information. Digital competence requires many abilities, from technical skills like using a computer or smartphone, to cognitive and critical skills that allow individuals to analyse and interact with digital content. The European Commission's DigComp framework (Ferrari, 2013) describes digital competence across five (5) key areas.:

- Information and Data Literacy
- Communication and Collaboration
- Digital Content Creation
- Safety
- Problem-Solving

Fig.1.1 European Commission's DigComp framework (Ferrari, 2013)

(i). Information and Data Literacy

This area defines the ability to locate, evaluate, use and manage digital information in order to enable access to a sufficient body of information to be able to make informed decisions and evaluate the quality of online content (Ferrari, 2013).

(ii). Communication and Collaboration

This area is about how digital technologies are used to communicate, share information and collaborate, whether professionally or socially (Voogt et al., 2017).

(iii). Digital Content Creation

Digital content creation must be broadly defined; the digital society demands a person to know how to create, edit and share content, whether it be text, photography, video, and websites. This also includes awareness of intellectual property rights and copyright (Ferrari, 2013).

(iv). Safety

This area refers to having the wit to manage your digital technologies safely, whether it be issues surrounding privacy and data protection, or assuring online safety for your self and the community, particularly in the face of cyber threats (Ferrari, 2013; Helsper, 2021).

(v). Problem Solving

This area entails the ability to use digital tools to recognize and solve problems, which can include troubleshooting individual devices, adapting to new technologies, or finding solutions to particular digital challenges (Voogt et al., 2017).

Each of these five areas related to digital competence points to the number of different skills required to be able to operate in current digital society in which users must engage with content in a critical way, communicate in ways that promoted collaboration, create digital content that represents their ideas, navigate ethical and safety issues, and problem solve in very complex environments.

The Value of Digital Competence for Educators

Digital competence applies to education in the 21st century. While it means that educators not only use technology as a part of their teaching practice, but use requisite digital skills to support students in developing their digital skills. Sary, Dudija, and Moslem, (2023) claim that teachers who have a high level of digital competence engage in and enact more innovative teaching strategies, promote more innovative learning environments, and provide opportunities for critical thinking.

Digital competence is also an important part of a student's cognitive skill set for employment in today’s workforce. OECD (2019) Digital competence is now a requirement for participation in the global economy and no longer an option. Technology continues to change how we work across industries, and students need to develop competencies to make sense of digital environments, solve problems, and communicate effectively in a technological world.

Barriers and Challenges to Digital Competence

Digital competence is increasingly seen as necessary; however, there are considerable barriers to achieving it, especially in situations where there is limited access to digital technology and limited ability to learn how to use it. The digital divide, which can mean having no access to technology or your location not having access, is a key barrier to achieving digital competence (Helsper, 2021). In many areas, especially rural or impoverished areas, people have limited access to digital tools and the internet; limited access is a substantial barrier to developing digital skills.

Even in environments where people do have access to technology, there will be limited ability to access appropriate learning already structured to enable people to develop digital competencies; for instance, many places may have a few devices, but not enough to go around, with no training; therefore, despite technology being present, access to learning and knowing how to use it could be limited, and consequently not effective. Educators are no different when it comes to increasing their competence using technology, there may be limited professional development, limited digital infrastructure, and generally unwillingness to change motor habits (Zhao et al., 2020). The idea of digital competence is broad and multi-dimensional. It includes technical, cognitive, and ethical skills necessary to operate in a digital context. Digital competence has changed from basic computer literacy to a more urban understanding of when and how to critically engage, communicate and collaborate digitally, create digital media, stay safe, and problem-solve with technology. Digital competence is a criterion for all constituents of a digital society, and a transitory process that involves lifelong learning and an ever-evolving landscape of digital tools and practices.

Digital Divide: Meaning and Definitions

In the early 21st century, the concept of digital divide related to access and availability of the internet and digital devices. In the new phenomenon aspect of the digital divide, this concept is known as the multifaceted (Gorski, 2005) and multilevel (Van Deursen et al., 2017) in its nature and is recognised by cutting-edge societies. The digital divide occurs due to various factors like digital skills, digital competence, educational status, and socio-economic status, etc.

Here are several definitions of the *digital divide*, along with their references:

Graham (2019): The digital divide describes the disparities in access to digital technologies, particularly between the rich and poor, urban and rural areas, and between different regions of the world, leading to unequal opportunities in education, healthcare, and employment.

United Nations (2018): The digital divide refers to the gap between those who have or can afford access to modern information technologies and those who cannot due to economic, social, or other barriers. Further, in 2001, the OECD defined the digital divide as the differences between individuals, societies, communities, and occupations and countries in relation to the availability of ICT, access to these tools, uses of or knowledge and understanding of ICT.

OECD (2001): The digital divide refers to the disparity between individuals, communities, businesses, and countries in terms of their access to, use of, or knowledge of ICT. This divide hinders the potential to take full advantage of digital technologies for economic and social

development.

Digital Divide as a Reflection of Social Inequality

Newhagen and Bucy in 2004 outlined social inequalities between individuals who derive benefit from Internet access and those who are deprived of Internet availability and excluded from accessing advances in knowledge across the world. Digital divide is a relative term that has been developed as the knowledge base in relation to other inequalities that have been implicated in other divides has expanded. It includes access as well as the level of digital skill, motivation, and the way to use someone using internet to interact and develop digital content (Hargittai, 2001; Chen and Wellman, 2004; Goldfarb and Prince,2008). Van Dijk (2005), Selwyn (2006), and Willis and Tranter (2006) studied the digital divide produced by the internet, and other innovations have followed the existing division that lies among gender, class, and race. Witte and Mannon (2010) reflect in their study that the internet users' online behaviour is associated with the users' social, economic, and cultural aspects of personality, which they reflect in offline reality. In 2013, Pearce and Rice exhibited about the internet applications that differences found in personal attributes and social groups. Zhao, 2006 said about digital divide that it has multilevel dimensions, along with an endemic approach that conceptualizes the Internet as a magnifier of pre-existing social stratification. Thus, when equality in society disturb, the internet tries to amplify this approach (DiMaggio and Garip, 2012).

Digital Competence, Equity, and Social Inclusion

Report of Internet and Society (2023) revealed that 2.7 billion people remain deprived of being online; in other words, one-third of people are still not able to access internet facilities. This indicates that only about two-thirds of the population were able to benefit from the financial, educational, political, social, and health-related opportunities enabled by digital connectivity. Internet connectivity has diversified uses and functions that are transforming practices of inter-personal relations, social interaction and collective participation, and at the same time generating digital inequalities and exclusions that are the causes to generate digital social inequalities. Hence, it seems imperative to understand the factors related to the digital divide and increasing digital social inclusion. To enhance digital equality, need the spread digital skills among all the different socio-economic sectors of society. To meet the needs of an ever-changing society, various online education modes are ready to serve need-based educational facilities to the people who cannot go to school. The main purpose of this type of online learning material is to reduce the digital divide.

Challenges and Implications

Despite the advantages, the implementation of digital competence and innovations in educational systems can be challenged by elements within education, such as the digital divide, limited training, and resistance to change. To help address the challenges for innovations in education, systemic solutions must be put in place, including investment in infrastructural resources, professional development for educators and policies aimed at enabling equitable access to technology (Redecker, 2017).

Strategies to Mitigate the Digital Divide and Improve Digital Equity & Social Inclusion

- Long-term Infrastructure Advances with internet connectivity
- Community-Based Digital Literacy Short-Term Program
- Collaborative Program with affiliated colleges
- Partnership with Industry and academia to develop resources and connectivity
- Develop short-term need-based digital skill programs

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