Unpacking contrary conceptions of digital literacy across a higher education landscape

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The higher education sector is changing, driven by a post-pandemic push to a more digital focused model of delivery. Whilst this change was coming before the pandemic, COVID-19 has put the need for a better understanding of digital approaches in stark relief, as individuals could no longer meet face-to-face. And yet, our perceptions of digital literacy (competency and skills) remains limited, with literature suggesting that even the use of the term 'digital literacy' is diverse. This paper aims to conduct a review that positions these terms more clearly with their associated stakeholders. Using a defined systematic review methodology based on Lateral, this paper identifies a disconnect between stakeholder perceptions, particularly academics and their students, as well as influences felt by the pandemic. Through this work, we aim to lay a foundation for future research in the educational technology domain, understanding these contrary conceptions and how they may be resolved.

Keywords: Digital Safety, Digital Literacy, Digital Wellbeing, Digital Relationships

Introduction

The higher education learning landscape is being redefined as we navigate the digitally-related changes that emerged due COVID-19 while simultaneously managing the proliferating influence of artificial intelligence (AI) (Crawford et al, 2023). Amidst these profound shifts, digital literacy has emerged as an indispensable pillar, upholding the academic edifice and reconfiguring pedagogical schemas (Chugh et al, 2023). A nebulous term that encapsulates an array of competencies and skills, digital literacy has evolved to be more than just the ability to use digital tools—it now encompasses the critical faculties required to navigate, analyse, and create information within the digital space (Orlando, 2021). This shift in conceptualisation of the term has significant relevance to higher education teaching and learning.

This shift has irrevocably changed the face of education, but its full impact can only be understood by delving deep into the perspectives of those at its heart – the students. By integrating their voices, their visions, and their interpretations of digital literacy, this review aims to bring forth a comprehensive understanding of digital literacy's role in shaping higher education for our technologically entwined present and future. In this ever-expanding digital learning landscape, understanding the learners' perspectives can not only inform teaching practices but can also shed light on the multilayered dimensions of digital literacy itself.

This literature review hence embarks on a scholarly exploration of this critical inquiry, delving into the students' perspective on digital literacy, its characteristics, and their visions for the future of digital learning, answering the research question: "What characteristics of digital literacy do higher education students identify as key to their success as students?". In addition, this review will illuminate the discrepancies between the students' interpretations of supportive digital literacy skills/knowledge and those of the academics shaping their educational journey, answering a second research question, ""To what extent the discrepancies between the students' interpretations of digital literacy and those of the academics shaping their educational journey?". As we tread through the realm of higher education in the digital age, such potential disconnects and conflicts call for a thoughtful reflection, fostering a dialogue between students and educators.

Defining digital literacy

Successfully completing their studies now requires students: a) effectively engage digitally for learning and; b) for communication and relationship building with academics, peers, the university community and with information provided by the university as well as other sources that will support them as students (Sturgess, Cowling, & Gray, 2016). Indeed, it's very clear, especially post COVID-19, that a broad range of digital literacy skills is needed for this to occur. Yet despite this, the embedding of digital literacy development for higher education students is generally weak, as there is an implicit assumption and expectation for students to be digitally competent (e.g., Oliver, 2013; Sim, 2018). Students face several challenges in terms of this new normal

for digital learning and their digital literacy is becoming increasingly influential for their academic success (Hong & Kim, 2018). The transition from face-to-face to online discussion, for example, may not be seamless as it is commonly found that students have difficulty engaging in online discussions at a critical level in this medium (Koh, Herring, & Hew, 2010). Within the literature, digital literacy is generally conceptualised in terms of a set competencies or skills that are needed to engage online safely and competently. As Castañeda and Selwyn (2018) argued, it is important that "We have an active commitment to 'think otherwise' about how digital technologies might be better implemented across higher education settings" (p. 8). However, relatively little is known about the digital literacies that higher education students need to be efficient and effective in their use of digital technologies. Some of the digital literacy knowledges and skills students need are obvious (such as the need to be competent with word processing, or information search, for example), however, it cannot be assumed that this is the complete picture (Davey, Elliott & Bora, 2019). Post COVID-19, student engagement digitally is distinct, and the digital literacy needs of our students are not always visible and should be explored. This project aims to examine the digital literacy strengths and needs of students, specifically in their university-related engagement.

Methodology

To conduct this literature review, a systematic and comprehensive search strategy was employed, aimed at capturing the most relevant studies in the field of digital literacy in higher education. The methodology consisted of several steps, as outlined below, with the purpose of providing a rigorous and transparent approach to reviewing the existing literature.

Search strategies and databases

A comprehensive search of electronic databases, including Dimensions, Elicit, Semantic Scholar, and Google Scholar, was conducted to identify peer-reviewed journal articles published between 2010 and 2023. This year range was chosen to represent the rapid changes in the use of digital technologies in the 21st century over the last 10 years, whilst also including the COVID-19 years of 2020 – 2022. Similarly, the choice of databases ensured a wide coverage of the literature, capturing articles from various disciplines and geographical locations. The search was performed using the keywords "digital literacy", "higher education", "skills," "factors," and "expectations." Synonyms were also included for these words including for example, "digital skills", "online learning", "university", and "knowledge". This combination of keywords aimed to capture the broad spectrum of research on digital literacy, from its conceptualisation to its practical implications in higher education settings. In particular, the review included both empirical research and conceptual papers.

Inclusion criteria and screening process

The inclusion criteria for this literature review were studies that focused on the characteristics of digital literacy students considered key to their success as students in higher education. To ensure the relevance and quality of the selected articles, the search was limited to peer-reviewed journal articles. After the initial search, duplicates were removed, and the remaining articles were screened based on their titles and abstracts to determine their eligibility for inclusion in the review. Articles that did not meet the inclusion criteria were excluded from further analysis.

Data extraction and analysis

Articles that met the search criteria (n=16) were then uploaded to Lateral, a text-analysis tool that facilitated the filtering of content based on concepts related to "definition of digital literacy," "students," "skills," and "pandemic effects." This process helped to identify specific sections of the literature that covered these topics, making it easier to identify research commonalities and differences, as well as to summarise the articles. Each article was thoroughly reviewed, and relevant information was extracted and emphasised, focusing on the research questions, methods, findings, and implications for the field of digital literacy in higher education.

Limitations

It is important to note that this literature review was conducted at the onset of the AI revolution, which implies that much of the terms, theories, and practices in the existing literature are expected to change drastically in the coming years. As a result, some of the findings and conclusions drawn from this review may become outdated or less relevant as the field evolves. Moreover, the search strategy and inclusion criteria may have inadvertently excluded some relevant studies or perspectives, limiting the comprehensiveness of the review. Nonetheless, this

literature review provides a solid foundation for understanding the current state of digital literacy in higher education and offers valuable insights for educators, institutions, and researchers as they navigate the rapidly changing landscape of technology and education.

Results & discussion

Results from the literature review were subsequently grouped into two categories, addressing each of the two research questions. Themes are reported below, with relevant studies highlighted in support.

Characteristics of digital literacy

Overall, in answering the first research question, this literature review revealed a lack of clarity surrounding the term 'digital literacy'. This is unsurprising, as a comparative review of publications conducted by Pangrazio, Godhe, and Ledesma (2020) found that the definitions of 'digital literacy' vary across countries and languages, reflecting differing cultural contexts and priorities. The authors also emphasized the need to continuously evaluate digital literacy definitions as technologies used in education rapidly evolve (Pangrazio, Godhe, & Ledesma, 2020). However, within these broad and often conflicting definitions, the literature revealed a division of characteristics that was interesting, especially in the way it divided amongst students and other stakeholders. Firstly, the review clearly showed that digital literacy encompasses a wide range of skills, including information seeking, evaluation, creation, communication, and problem-solving in digital environments (Gutiérrez-Ángel et al., 2022). Studies have highlighted the importance of self-regulated learning strategies, such as planning, monitoring, and reflection, in fostering digital literacy for sustainable lifelong learning (Anthonysamy, Koo, & Hew, 2020). However, these studies do not always account for the diverse learning needs and preferences of students, which may limit the generalizability of their findings. Addressing this, Chan, Churchill, and Chiu (2017) advocate for the use of digital storytelling as an effective approach to enhance digital literacy learning in higher education, but more research is needed to explore the scalability and adaptability of this approach across different contexts and disciplines (e.g., digital pedagogies). Secondly, the review showed that students have their own ideas about how digital learning should look in the future. Miranda, Isaías, and Pífano (2018) found that students desire more interactivity, flexibility, and personalisation in their digital learning experiences. Similarly, Hong and Kim (2018) developed a Digital Readiness for Academic Engagement (DRAE) scale to assess college students' preparedness for engaging in digital learning environments. Their findings suggest that students value seamless access to digital resources, digital collaboration, and effective communication through digital channels. However, the DRAE scale may not capture all dimensions of digital readiness, and further research (e.g., diverse people) is needed to refine and validate this tool.

Disconnects and conflicts between students and university academics

In answering the second research question, the literature also reveals potential disconnects and conflicts between students' and university academics' interpretations of digital literacy. Coldwell-Neilson (2017) discovered that Australian universities often assume students possess certain digital literacy knowledge, without explicitly communicating these expectations. This misalignment between assumed and actual digital literacy skills may hinder students' academic success. Bacalja, Beavis, and O'Brien (2022) further discussed the shifting landscapes of digital literacy and emphasised the importance of educators staying updated on the latest digital trends and technologies. However, more research is needed to investigate the specific factors that contribute to these disconnects and identify strategies for addressing them in practice, such as cultivating a deeper partnership between teachers and students. Further, the review showed that a holistic understanding of digital literacy characteristics important to students can influence approaches taken by university staff in designing and delivering digital education. Davey, Elliott, and Bora (2019) argued that learning designers and subject matter experts need to collaborate to address pedagogical challenges in the shift from face-to-face to fully online learning. Monteiro and Leite (2021) suggested that digital literacies should be integrated into higher education curricula, with an emphasis on developing students' critical thinking, creativity, and collaboration skills. To make these recommendations more actionable, educators and institutions might consider offering professional development opportunities focused on digital literacy, creating interdisciplinary teams to design and implement digital learning experiences, and regularly evaluating the effectiveness of their digital literacy initiatives.

Finally, the COVID-19 pandemic has further highlighted the significance of digital literacy in higher education, as students and educators were forced to adapt to remote learning environments (Kasimoğlu, Bahcelerli, & Çelik, 2022; Dadaczynski et al., 2021; Inan Karagul, Şeker, & Aykut, 2021; Tejedor et al., 2020). Studies on digital literacy during the pandemic revealed the need for increased support for both students and educators in order to overcome challenges and ensure quality education (Pawlicka et al., 2022; Williams et al., 2022; Wigati

& Fithriyah, 2022). While these studies offered valuable insights into the challenges faced during the pandemic, more research is required to explore the long-term implications of the pandemic on digital literacy development and the ways in which higher education institutions can adapt and innovate in response to future crises. After all, we need to make sure our education is moving forward and is ready for a possible 'next wave' of the pandemic.

Conclusion

Understanding the characteristics of digital literacy important to students can provide valuable insights for educators and institutions seeking to design and deliver effective digital learning experiences. By addressing the alignments, disconnects, and conflicts between students' and academics' interpretations of digital literacy, higher education can better prepare students for success in an increasingly digital world. The future of digital education must prioritize interactivity, flexibility, personalisation, and effective communication in order to meet students' needs and expectations. Moreover, as the landscape of digital literacy continues to evolve, it is crucial for educators and institutions to stay updated on the latest trends and technologies, and to integrate digital literacies into their curricula. The COVID-19 pandemic has underscored the importance of digital literacy in higher education and serves as a reminder of the need for ongoing support and adaptation in the face of unprecedented challenges. The ongoing AI technology revolution presents another layer of complexity and uncertainty to the development of digital literacy. As AI-driven tools and platforms become increasingly integrated into educational settings, the ways in which students and educators interact with digital content may change dramatically, potentially reshaping our understanding of digital literacy itself. Preparing students for this rapidly changing environment will require continuous adaptation and the development of new skills and competencies. Ultimately, a comprehensive understanding of digital literacy characteristics is important to students as it can lead to a more engaging and effective digital learning experiences, better preparing students for their future careers and lifelong learning. By incorporating the suggestions mentioned earlier, such as offering professional development opportunities, creating interdisciplinary teams, and evaluating the effectiveness of digital literacy initiatives, higher education institutions can work towards creating a more inclusive and dynamic learning environment that empowers students to thrive in the digital age and adapt to the emerging AI-driven landscape. In short, unpacking contrary conceptions of digital literacy across a higher education landscape is one of the core steps to realise pedagogically sound digital education for our students.

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