Digital Literacy the Prerequisite of Blended Learning: A Literature Review

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EDLD 5305: Disruptive Innovation in Technology

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November 11, 2023

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The post COVID era has challenged the way public education utilizes technology. Solahudin et al. (2022) suggest that technology in education has now become the new normal due to the circumstances of the pandemic. In the United States alone, for every five students there is one Chromebook for that student and the United States is spending billions of dollars each year to fund technology and digital content (Kaur, 2020). This topic brings stakeholders to an important conversation surrounding preparation for students in the new normal and the future of digital learning, such as blended learning, and student digital literacy levels.

The purpose of this literature review is to explore the research done surrounding the definition of blended learning, the definition of digital literacy, digital literacy levels of both students and teachers, and the impact of digital literacy with the COVA (choice, ownership, voice, & authentic learning) approach. Research discussed will date no further back than 2012 to ensure that literature discussed is pertinent and relevant to the last decade of education.

Literature Review

Blended Learning

Databases that share scholarly written academic articles will contain varying definitions surrounding blended learning. The first main idea and definition surrounding blended learning is that there is no set definition that truly describes what blended learning entails (Cronje, 2020). Whereas, Hrastinski (2019) suggests that blended learning may entail two different definitions that have notable similarities being cited over 3,000 times. The two descriptions of blended learning describe that blended learning must include face-to-face instruction and online instruction or learning (Hrastinski, 2019). Tang and Chaw (2015) support that blended learning requires a flexible approach from face-to-face instruction where online instruction is accessible anytime and anywhere for digital resources, tests, and digital tools. Tang and Chaw (2015) also identified that blended learning contains various models, such as rotation, flex, self-blend, and enriched-virtual (Tang & Chaw, 2015).

When blended learning is discussed academically there are many synonymous terms utilized throughout scholarly literature to describe blended learning. Terms used to describe blended learning synonymously with each other may include; computer mediated and online, instruction and learning experience, or hybrid learning and blended learning (Hrastinski, 2019). In conclusion blended learning will require a selection of traditional face-to-face classroom environments and online content, curriculum, and resources (Hrastinski, 2019).

Digital Literacy

To be digitally literate an individual will require the ability to search and find information online, understand and manage information from different digital resources, and examine and merge digital information (Tang & Chaw, 2016). Furthermore, digital literacy shouldn't just involve the accumulation of digital knowledge and skills but the ability to also master ideas (Tang & Chaw, 2016). Many skills are not explicitly taught to students, thus shedding a spotlight on the importance of digital literacy skills and how students can safely utilize the internet and digital tools provided (Erwin & Mohammed, 2022).

Digital illiteracy poses a jeopardizing prospect for students both primary and older. Not knowing which websites are trusted sources, not understanding how to evaluate who the author is, or not knowing how to identify bias versus fact-based information poses risk to credibility (Erwin & Mohammed, 2022). Research over time has shown that digital literacy skills should be taught to lead students towards a solid foundation of understanding for further lifelong learning and exploration in the digital world (Erwin & Mohammed, 2022).

Student Literacy Levels

A study projected upon seniors in high school studied four various digital literacy skill levels: knowledge assembly, content evaluation, internet searching, and hyper textual navigation (Perdana et al., 2019). Students within the study were given limited direction, no time limit to complete the task, and the tasks were given independently. The study found that each skill level tested low or very low in the students' knowledge of the aspect (Perdana et al., 2019).

Interestingly, the study suggested that students tested low to very low in each skill due to English language skills, inability to create content because students do not reflect on media experience in everyday life, and because students find it difficult to use computer equipment and online software (Perdana et al., 2019).

A second study done with no grade level specification analyzing digital literacy levels among 410 students at random (Solahudin et al., 2022). The study examined communication and collaboration, digital content creation, safety, and problem solving. In conclusion, it was noted that students based on age, years in school, and knowledge of skills mattered when it pertains to literacy levels (Solahudin et al., 2022). Solahudin et al. (2022) suggested that from their study it is essential to increase the knowledge of educators in digital literacy in order to transfer knowledge and educate K-12 students in mastering 21st century competencies.

Teacher Literacy Levels and Perceptions

A study conducted on one hundred twenty-six K-12 teachers in northeast Texas and southwest Arkansas found that roughly 70% of educators agree they are learner centered teachers (An & Reigeluth, 2012). Yet, the majority of the same participants felt that learner centered classrooms were challenging but rewarding (An & Reigeluth, 2012). An & Reigeluth (2012) also found that the majority of teacher participants within the study held positive attitudes towards technology, teachers believed in incorporating the usage of technology in the classroom, and teachers felt that it was their assigned duty to incorporate technology into the classroom curriculum. The teachers within this study were self-motivated to strengthen their skills.

A separate second study that was conducted on teacher literacy levels found that teachers were performing at a low intermediate level when assessed on teacher digital literacy skills (Sánchez-Cruzado et al., 2021). Teacher choice, noted by the authors, is just as important as student choice and when their choice is valued, teachers will choose to learn, strengthen,

and improve their knowledge of digital literacy skills through varied programs that will provide a curriculum to learn about the skills needed (Sánchez-Cruzado et al., 2021).

Impact of Digital Literacy: Choice, Ownership, Voice, & Authentic Learning (COVA)

Tang & Chaw (2015) agree that the impact of digital literacy is great, relating that in order for students to successfully adapt to blended learning environments they need to be digitally literate. Roughly 70% of students in Tang & Chaw's findings found online resources, such as eBooks, to be more effective than physical resources, such as physical books (Tang & Chaw, 2015). In relative nature to how impactful digital literacy can be there's also emphasis on a growing approach termed COVA (choice, ownership, voice, & authentic learning) that is able to strengthen digital literacy. The COVA approach is based on constructivist principles that lay into interactive learning, connection, choice and ownership in learning in reflective ways (Thibodeaux et al., 2019).

Choice

When students have choice they are organizing, structuring, and presenting their ideas and when students have choice they are choosing how the world sees those ideas (Harapnuik & Thibodeaux, 2023). Effective choices will lead students to learning opportunities as a result (Harapnuik & Thibodeaux, 2023). Choice in essence is agency of learning, autonomy of the mind, self-empowerment, and self-efficacy (Harapnuik & Thibodeaux, 2023).

Ownership

Under the teacher's guidance, students can express ownership of their projects and work. Not only this, but ownership provides space for students to engage in their own learning with the motivation to seek solutions to the questions and problems they have (Harapnuik & Thibodeaux, 2023). This is relevant towards digital literacy because students may seek out how to own their ability to maneuver and understand their Chromebook. As students find ownership and have agency over what they've learned and created they develop a voice (Harapnuik & Thibodeaux, 2023).

Voice

Having a voice is the student's ability to share their work and ideas with others (Harapnuik & Thibodeaux, 2023). Students may share ideas, knowledge of what they've learned through specific content mastery (think TEKS for Texas public schools), and what they have created through writing online discussions. Voice provides students with a security of purpose and more personal significance to their life and interests (Harapnuik & Thibodeaux, 2023).

Authentic Learning

When participating in authentic learning, students are allowed opportunities to select various opportunities that allow them to make connections and realizations in their own world (Harapnuik & Thibodeaux, 2023). In order for authentic learning to take place there must be engagement from the student in solving their own questions and problems (Harapnuik & Thibodeaux, 2023). The creation of authentic learning deepens the student's ability to take what they have learned within the classroom and take it beyond to the real world in which they'll become stronger citizens (Harapnuik & Thibodeaux, 2023).

Conclusion

Digital literacy is the prerequisite to blended learning in the post COVID era, because students in the United States are experiencing a roll out of billions of dollars' worth of digital software, tools, and hardware each year both inside and outside of the classroom. The importance of digital literacy evolves each and every day resulting in varying degrees of literacy levels amongst both students and teachers. There's a growing emphasis on digital literacy skills needed by prospective teachers to educate their students and create a learner-centered classroom that can successfully and effectively utilize blended learning. Studies show that literacy levels are low amongst students, but average for educators.

Digital literacy can be quite impactful inside the classroom once curriculum, programs, and approaches such as the COVA approach are utilized. Students value having choice, ownership of learning, voice in learning, and students value authentic learning opportunities to

take advantage of what they've learned inside the classroom and use their knowledge in the real world. It will be the duty of the education system to understand the importance of digital literacy and how it will impact the ideas of blended learning.

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