

# NAVIGATING THE DIGITAL LANDSCAPE: A CONCEPTUAL FRAMEWORK LINKING DIGITAL LITERACY, STRESS REDUCTION AND WELL-BEING OUTCOMES

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**Abstract:** *In an era characterized by unprecedented digital transformation, individuals are confronted with the paradoxical challenge of harnessing technology's. This conceptual paper aims to review a comprehensive framework that elucidates the relationships among digital literacy, well-being outcomes, and stress reduction. In reviewing recent studies conducted between 2020 and 2025, this research finds that there are two related paths through which digital literacy shapes health: Relationship between digital literacy and stress reduction and Digital literacy's direct and indirect effects on well-being. The critical theoretical significance of the developed integrated framework includes its ability to clearly distinguish between digital competency and digital dependency, where focusing on emotional regulation. There are implications on how this integrated framework should be supported across education sectors, healthcare, and public policies, where digital literacy should not only include technical competencies but also emotional regulation and health-related competencies.*

**Keywords:** *Digital literacy; Health; Stress reduction; Well-being*

## Introduction

The advent of a global economy through digital literacy, well-being, and stress reduction has a critical area of academic and practical focus to investigate. The phenomenal spread of digital technology has significantly altered the behavior and patterns of communication, work, learning, and interaction with the environment (Büchi, 2024). As societies around the world are faced with expanding digital environments, the digital competencies differ in their psychological impact and are now highly important for contributing to healthy technology use and effective digital practices (Chen et al., 2025). The COVID-19 pandemic has now accelerated digital technology in every life aspect and amplified an even greater need to investigate and explore how individuals should tap digital technology for improving their well-being rather than working against it (Ting et al., 2025).

Digital literacy, as the capacity to effectively and critically navigate, evaluate, and produce information using digital technology, was historically conceptualized and accepted as a basic technical competency; however, in recent times, it has been considered a complex type of competency in terms of its cognitive, social, and affective features (Yuan et al., 2025). In recent times, the notion of digital literacy has been considered beyond technical competency in current conceptual frameworks that focus on critical thinking, awareness, and self-regulation in online contexts (Palalas & Doran, 2023). On the other hand, there has been a growing focus on the notion of digital well-being in current times as researchers and scholars are faced with the challenge of understanding how technology influences psychological well-being, social relationships, and overall life (Büchi, 2024). Digital well-being refers to the positive experiences of technology, balanced usage, and the capacity to harness technology for deriving benefits while minimizing risks (John & Shibi, 2023).

Digital literacy serves as a significant safety net in protecting individuals from experiencing digital stress. It provides individuals with mental and technical capabilities that are necessary for coping with complex environments in a digital world (Marangell & Randall, 2025; Tinmaz et al., 2022). Digital literacy enables individuals to critically analyze media and differentiate between authentic information and stressors like misinformation and "doomscrolling" (Machete & Turpin, 2020; Molina et al., 2021). In addition, it enables individuals to self-regulate their screen time, which directly helps in preventing burnout (Mubango & Ngirande, 2024; Saboor et al., 2024). When individuals are able to understand the algorithms and social factors involved in a digital world, they are able to move from being passive to being active users, thus reducing their stress levels (Ribeiro-Silva et al., 2022; Tarafdar et al., 2015).

The link between digital engagement and stress remains a complex area where different types of stress induced by technology, such as technostress, information overload, and digital burnout, have been established (Berger et al., 2024). Surprisingly, digital involvement can yield negative psychological consequences, but intelligent and effective technology use can play a protective role, implying that it is important to look beyond digital involvement quantity to quality of life (Chen et al., 2025).

However, recent data from 2024 and 2025 indicates that the world is in a mental health crisis that is heavily correlated with digital media use (World Health Organization (WHO), 2025). In terms of the above assertion from WHO (2025), it is evident that the global economic burden is huge, as depression and anxiety disorders result in a loss of productivity to the tune of US\$ 1 trillion. Recent research from OECD (2025), which involved 14 nations, indicates that people who spend more than five hours a day on screen for personal reasons are more likely to

experience poor well-being. This is further complicated by the rise in stress levels. In this regard, it is evident that approximately 62% of people from 31 nations reported that stress has impacted their daily life, as revealed in the research from Ipsos (2024).

Despite increased connectivity, individuals from various groups face challenges in their digital lives. There are documented cases of digital stress, which include a sense of being overwhelmed and inundated at all times because of connectivity, fear of missing information, and time and boundary issues separating online from offline lives (Alhasani & Orji, 2025). These issues have been noted to occur at very acute levels for special groups, for instance, the elderly and their inability to keep up with new technology (Xin et al., 2025). This also included the students, who were undergoing pressure as a result of the digital classrooms (Yuan et al., 2025). Young social activists, for instance, and their exposure to excessive digital engagement and mental health issues (Supa et al., 2024).

The paradox of digital technology potential threat to mental health, raises important questions for the teaching, political, and mental health communities (Babu, 2025). The problem for organizations across the globe is how they will overcome the problem of the effect of technostress and digital burning out of their workers. For the institutions of education, the problem is educating students in digital citizenship in a way that doesn't contribute to the already existing levels of stress and anxiety of technology use (Barbashova et al., 2025). The growing use of digital mental health services is promising but has not been shown to be effective (Alhasani & Orji, 2025).

This conceptual paper aims to review a comprehensive framework that elucidates the relationships among digital literacy, well-being outcomes, and stress reduction. This paper provides a range of important contributions to the ever-changing debate on digital health and well-being.

### Conceptual Background

With the rapidly increased digitalization of society, there has been an emerging need for digital literacy as one of the determinants of health and well-being for the 21st century, moving beyond its conceptualization as only a technical proficiency with more psychological and social undertones (Arias López et al., 2023; Uslu, 2025). Digital literacy, described as the ability to access, evaluate, create, and communicate information through digital technology, has turned out to be one of the primary requirements that shape one's ability to effectively deal with the complex technologic environment and keep their psychological balance (Büchi, 2024; Yuan et al., 2025). There also seems to be an emerging body of concerns related to technologically induced stress, which includes technostress, digital burnout, and information overload, with the ability potentially moving beyond the well-being it originally aims for (Ballangan et al., 2024; Berger et al., 2024).

Some studies have shown the correlational relationship between digital literacy and well-being outcomes but the gaps remain in the literature with regard to understanding the complex mechanisms and pathways by which psychological health is mediated through digital competencies. Current research into the area predominantly takes a one-sided look either at the darker sides of technology use, such as addiction and stress, or the bright positive potential of digital tools, without integrative frameworks that take into account this duality. According Büchi (2024), a few critical gaps remain:

Firstly, the existing conceptual frameworks are unclear both in relation to the differential contribution of various dimensions of digital literacy towards overall well-being, and in relation to the distinction between the various dimensions of digital competency and dependency (Chen et al., 2025). Secondly, although studies on the reduction of digital-related stress are common, a clear framework of various components of the intervention towards decreasing the symptom rather than the influencing the resilience level of the intervention target has not been established (Alhasani & Orji, 2025). Thirdly, typically, the existing conceptual frameworks of digital literacy or well-being are driven by a monocausal approach without addressing the simultaneous relationship of the various dimensions of competencies, practices, or the various dimensions of psychology (Büchi, 2024).

Moreover, it has become increasingly clear from empirical studies that digital literacy also provides a protective role above and beyond basic computer skills. There is evidence that increased levels of digital literacy improve eHealth literacy and self-efficacy for seniors (Xin et al., 2025). It was found that for college students, digital literacy exerts a positive effect on learning outcomes by providing supportive digital environments and improving technology self-efficacy (Yuan et al., 2025). On the other hand, for women in developing countries, it was found that digital literacy exerts a positive effect on digital resiliency and mitigates risks on the Internet (Akyüz et al., 2025). Nonetheless, these studies apply to diverse bodies of research and do not demonstrate empirically supported views to describe why and how digital literacy can provide increased well-being and stress relief.

There is an obvious need for understanding the relationship between digital literacy and well-being in more diverse global settings where technological growth is juxtaposed with ongoing digital divides. For many countries in Southeast Asia, the level of digital literacy remains disparate while infrastructure growth leadsSource dōiahead of preparedness for operational use (Kusumastuti and Nuryani, 2020). In developing countries in various regions such as Asia, Africa, and Latin America, challenges related to growth potential from technological advancements face constraints from minimal infrastructure bases that include cultural as well as socio-economic realities (Adel, 2024; Ameen and Gorman, 2009). In these environments, technological growth indicates both positive and negative aspects for affected global groups who experience stress emanating from technological advancements for which they lack proper underpinnings or foundational knowledge for adaptation (Sharma et al., 2016).

Additionally, particular sub-groups also need to be understood in context. Gen Z students possess highly developed technical abilities yet fail to carefully regulate their digital well-being, especially concerning the emotional aspects of social media (Mulawarman et al., 2025). Educators also feel tech-stress as they cope with technological change in their learning environments (Zivi et al., 2025). Senior citizens encounter challenges in their inclusion in digital health information and building and sustaining their social relationships (Xin et al., 2025).

### **Selection of Literature**

In this literature review, it is necessary to investigate complex links between digital literacy, well-being, and stress reduction to answer a primary research question: What is the role of digital literacy as a protective factor in psychological well-being outcomes and in stress management generated from technology? The analysis covered this literature review focuses on empirical, theory-based, and intervention studies published between 2020 to 2025. Specifically, to provide a deep dive into more, either quantitative or qualitative, research that

investigates the links between content, process, or other factors that might interact with this relationship. The inclusion criterion picks studies specifically focuses on digital literacy, well-being and stress reduction applying strict methodology to filter out studies that are purely technological with no psychological.

The present study utilized a systematic selection of literature that aimed to address the gap between technical competence and psychological outcomes through academic contributions. The selection of literature was conducted through Scopus databases utilizing primary keywords related to "digital literacy" "stress reduction" and "well-being." The selection of literature was restricted to peer-reviewed articles in English between January 2020 and 2025. The selection of literature was based on its ability to provide empirical data on the prevalence of mental health issues, particularly in the global and Malaysian contexts. The selection of literature was restricted to articles that focused on mediating factors of digital literacy, including self-efficacy, social support, and cognitive regulation.

### **Conceptual Framework**

Now it is divided into three broad sections to present a scope of exploration of this review:

#### **1. Theories and Concepts Foundations and the Evolution of Digital Well-Being Frameworks**

The theoretical developments in the field of digital literacy and well-being have progressed from simple linear approaches to more complex and intricate models in an attempt to capture the complex and reciprocal associations between digital literacy and well-being. Büchi (2024) has contributed to the theoretical developments in digital well-being by suggesting a more intricate approach in understanding digital practices as mechanisms in which beneficial or harmful effects are created through the socio-technical conditions. This has shifted the theoretical perspective away from solely focusing on potential digital risks, as in earlier models, and recognizes the potential for empowerment and growth offered by technologies (John & Shibi, 2023).

The DW-FOLD framework created by Palalas and Doran in 2023: "Understanding Digital Well-being through an Integrative Framework: DW-FOLD," can be considered an excellent example in this regard, listing intentional technology use and online learning principles to facilitate holistic well-being. More importantly, to address this gap, Chen et al. in 2025 had introduced an important and novel distinction between digital competency and digital dependency using network analysis, thereby identifying that it's the regulation and adaptive skills of emotional coping and not just digital engagement that distinguishes digital well-being from dependency.

Moreover, new paradigms are starting to acknowledge the multi-dimensional nature of digital literacy, not limited to its operational but also to its critical evaluation, emotional regulation, as well as its capacity to engage meaningfully with social interactions using the technology (Sarzhanova et al., 2025; Uslu, 2025). Theoretical underpinnings are crucial to grasp the role of digital literacy as a protective component, while important conceptual uncertainties continue to exist in the dimensions of digital literacy that are most relevant to the different Well-being outcomes.

## 2. Link Between Digital Literacy, Well-Being, Stress Reduction



**Figure 1: Digital Literacy, Stress Reduction and Well-being Outcomes Link**

### Paragraph 1: Relationship Between Digital Literacy and Stress Reduction

Figure 1 show digital literacy acts as a basic protective factor against stress that might arise from technology because of its ability to equip people with the skills and abilities to interact with the digital world with confidence and efficacy. The link between digital literacy and stress management is mediated by a number of psychological processes, with self-efficacy identified as the key mediator. Since those who are skilled in the digital world are better placed to cope with the demands of the digital world and thus are less stressed about using technology (Sadat & Shafi, 2025; Wang et al., 2021).

A four-country comparative study carried out by Kumpikaitė-Valiūnienė et al. (2021) showed that digital competency has been found to have a considerable effect on stress and burnout perceptions among students, and that increased levels of digital literacy skills are related to decreased perceptions of stress, even in times of extreme learning situations like those posed by teaching during the COVID-19 pandemic. This stress-buffering function of digital literacy skills works because, according to Chen et al. (2025), the most important distinction between digital competency and digital dependency is this: those who possess real digital competency skills are able to use adaptive and effective techniques to manage digital-related stressful situations, whereas those who lack these skills tend to be at risk of becoming digitally dependent.

In addition, the health literacy component of digital literacy provides a unique ability to search, assess, and use health-related information in an effective and beneficial way. This is because health-related anxiety is diminished by health literacy (Sadat & Shafi, 2025). The anxiety reduction component is a very important step in creating an explanation of the impact of digital literacy on physical health. It has been recognized that stress and anxiety can be a potential cause of serious health problems related to the physical body (König et al., 2024). This complements the importance of having mental health or equilibrium.

## Paragraph 2: Digital Literacy's Direct and Indirect Effects on Well-Being

The relationship between digital literacy and physical health is mediated in both direct and indirect ways, and empirical findings have shown that as levels of digital literacy increase, levels of physical health improve. Through their examination of the Chinese General Social Survey, Wei and Jia (2025) established that physical health is significantly improved by digital health literacy, with this relationship still significant after controlling for sociodemographic and health-related variables ( $\beta = 0.146$ ,  $p < 0.05$ ).

Yang et al. (2025) shed more light on these processes by finding various pathways through which digital literacy impacts health in the Chinese context, such as better health information seeking, better health decision-making abilities, and better employment quality, with employment quality as a mediator between digital literacy and physical health. The direct relationship between digital literacy and physical health is likely due to the improved ability of people to access evidence-based information on healthcare, the ability to access and use online healthcare services such as telemedicine and healthcare tracking applications, and the ability to access and participate in online healthcare forums that offer social support and healthcare-related guidance (Cheng et al., 2025; König et al., 2024).

Using mediation analysis, Cheng et al. (2025) found that in particular, digital health literacy shapes physical health by facilitating physical activity participation. Li et al. (2023) found among community-dwelling older adults that the effects of digital literacy on health-related quality of life are mediated through health-promoting lifestyle behaviors, suggesting that at least some digital competencies enable people to adopt and maintain healthier behavioral patterns. König et al. (2024) found that digital health literacy is positively associated with multiple health behaviors (including physical activity and preventive health screenings, eating a balanced diet) that cumulatively contribute to superior physical health status. These converging lines of evidence suggest that digital literacy influences physical health not merely through information access but through facilitating the behavioral and environmental changes necessary for health maintenance and disease prevention.

## Discussion

This literature review synthesizes extensive evidence showing that digital literacy has been found to be a complex protective factor, enhancing well-being and reducing technology-related stress through its multiple mediating pathways, such as self-efficacy enhancement, emotional regulation, social capital development, and improved access to health resources. Sometimes, the development of the view of digital literacy from a purely technical competency toward an integrated set of cognitive, emotional, and social capabilities presents a serious theoretical step forward.

Empirical research confirms the hypothesis that increased digital literacy is paralleled by better psychological outcomes across different populations: from older adults in managing health information (Xin et al., 2025), students dealing with educational demands (Feng & Liu, 2024; Yuan et al., 2025), to women facing online risks (Akyüz et al., 2025). The intervention research goes one step further to show practical applications: the integrated approaches, which link psychological support, pedagogical strategies, and the development of digital skills, seem promising in trying to promote well-being in digital learning environments (Barbashova et al., 2025; Palalas & Doran, 2023; Ting et al., 2025).

However, there are some gaps that future studies should look at, including: First, the field needs longitudinal studies that can establish time precedence and a causal direction, because current evidence is based primarily on cross-sectional designs that cannot determine with certainty whether it is digital literacy that causes improvements in well-being or if psychologically healthy individuals more easily acquire digital competencies. Second, theoretical models need to develop much clearer specifications regarding the conditions under which digital literacy extends protective benefits versus when it may prove insufficient or even counterproductive—for example, when technostress overwhelms individual competencies or when excessive digital engagement undermines wellbeing despite high literacy levels.

Third, studies exploring the differences in variations in terms of cultures and contexts have been very limited, and what little research has been conducted has largely focused on either Western or East Asian studies on how the relationship between digital literacy and well-being appears in different cultures (Ameen & Gorman, 2009; Kusumastuti & Nuryani, 2020). Fourth, the challenge of measurement standardization has continued to evolve, as the measurement of digital literacy has appeared in different studies in a non-standardized way (Arias López et al., 2023). The final issue is that intervention studies need to be improved in the application of randomized controlled studies to determine what is the best component of the intervention of teaching people digital literacy in terms of well-being and stress relief (Alhasani & Orji, 2025; Indra et al., 2024).

## Conclusion

This paper review found the relationship between digital literacy, well-being, and stress reduction. This integrative framework offers a theoretical basis to build evidence-based interventions to capitalize on digital literacy as an effective. This is because it is very essential and crucial in society.

Application of the issue in practical terms would be inclusive of various fields. Educational institutions need to incorporate digital literacy skills that would not only include technological skills but would also include emotional control, critical assessment, and health behaviors. The healthcare system needs to understand digital literacy as a determinant of health, which is a factor they need to address for the purpose of health equality. The policymakers need to develop digital literacy, especially among the aforementioned groups.

Despite these achievements, some major limitations need to be mentioned. First, the model primarily utilizes cross-sectional findings which reveal correlations but cannot show directional causation. Second, this conceptual model must be confirmed by intervening studies conducted through the use of randomized controlled trials regarding whether digital literacy can improve stress levels, health-related behaviors, or physical health. Third, the model must explore some aspects of digital literacy that remain largely understudied. Fourth, standardizing measurements can be troublesome due to variations in digital literacy measurements. Fifth, instead of reaching specific boundaries or effects of digital literacy, perhaps digital competency improvements after reaching optimal levels become less useful. Sixth, instead of casting the spotlight only on individuals in relation to digital literacy factors that affect well-being performance, the model must focus on how factors from organizations to society construct individual digital competency. Finally, with new technologies like artificial reality or virtual reality changing the digital environment.

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