International Journal of Teaching and Learning (INJOTEL) e-ISSN: 3025-8308
Vol. 3 No. 4, April 2025, pages: 383~397

DESIGNING THE FUTURE: DIGITAL SKILLS AND INTELLIGENCE IN HOLISTIC EDUCATION

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Abstract

In today's digital era, digital skills and intelligence have become an important element in education. This study aims to analyse the importance of digital skills integration in the concept of holistic education with the aim of preparing students for future challenges. The research method conducted in this study uses the literature research method. The results found that the integration of digital skills into holistic education enriches the learning process by adding critical and interactive dimensions. Students not only acquire technical knowledge, but also digital intelligence that includes an understanding of cybersecurity, ethics in the use of technology, and critical thinking in searching for information. These results confirm that digital skills help students adapt to the ever-changing professional environment and enhance their active participation in a knowledge-based society.

Keywords: Digital Skills, Holistic Education, Digital Intelligence, Information Literacy, Educational Technology.

Introduction

In this digital era of globalisation, the challenges and needs of society are changing rapidly. The development of information and communication technology has changed many aspects of life, including in the field of education (Sitopu et al., 2024); (Guna et al., 2024). Digital skills and intelligence are now essential for anyone to survive and thrive in the future. This calls for an educational approach that not only focuses on academic knowledge, but also holistic skills development that can prepare individuals to face the challenges of the times (Adeoye, 2023).

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Holistic education, which views education as a process of fully developing individuals intellectually, emotionally, socially, physically, artistically, creatively and spiritually, provides the framework needed to integrate aspects of digital skills and intelligence in the learning process (Allen & Zygouris-Coe, 2020). Thus, holistic education in the digital age is becoming increasingly important as it ensures that individuals not only gain technical knowledge, but also develop broader capabilities to navigate the complexities of this ever-evolving world (Atay & Vafadar, 2023). In this context, education must go beyond knowledge transfer and focus on fostering critical thinking, creativity, empathy and adaptability in collaboration with digital intelligence. These dimensions help students not only to become competent in using technology, but also to utilise it ethically and responsibly in their daily lives (Aumgri & Apirating, 2023). Therefore, a holistic education that embraces values, ethics and interpersonal skills, along with digital skills, provides a strong foundation for students to contribute and thrive in a digitalised society (Aysu, 2023).

While technology continues to change the landscape of careers and social interactions, a holistic education that integrates digital skills allows students to develop the abilities they need to succeed in the often unpredictable future work environment (AYYILDIZ, 2023). This approach prepares students with a growth mentality, helping them learn how to learn and therefore embrace innovation, adapt to change, and become versatile problem solvers (Tubagus et al., 2023). The emphasis on holistic education in the digital age not only gives them the tools for economic success, but also underpins their development as resilient, informed and socially responsible global citizens using technology (Aslan & Shiong, 2023). Thus, holistic education is a vital investment for a more dynamic, inclusive and sustainable future of individuals and societies.

However, the biggest challenge is how to design and integrate the learning of digital skills and intelligence into a holistic education system, so that it does not just add to the learning burden on students, but actually integrates and becomes part of the students' overall self-development process (Ballano et al., 2022).

The ability to adapt, think critically, collaborate and communicate in a digital environment is crucial. However, in reality, many current education systems are still focussed on conventional teaching that leaves little room for the development of these digital skills and intelligence (Beisenbayeva et al., 2024). An effective holistic education system should embrace technology, not just as a tool, but as an integral part of the learning process that promotes students' personal and professional growth (Boie et al., 2023).

In this context, the related research 'Designing the Future: Digital Skills and Intelligence in Holistic Education' is highly relevant. It aims to identify, analyse and provide insights into how holistic education can effectively integrate digital skills and intelligence in its curriculum and teaching methods. Through this research, it is expected

to provide strategic recommendations for policy makers, educators, and other stakeholders in designing an education system that is responsive to future needs.

Research Methods

The study conducted in this research uses the literature research method. The literature research method, often referred to as a literature study or literature review, is a research approach conducted by collecting, examining, and analysing scholarly publications such as books, journal articles, theses, and other written source materials. The aim is to gain an in-depth understanding of a topic, identify trends and gaps in existing research, and establish a theoretical basis for further research. (Thwe & Kalman, 2024); (Teixeira & Carvalho, 2024).

Results and Discussion

Concept of Holistic Education

Holistic education is an approach to education that aims not only to enrich students' academic knowledge, but also to foster their spiritual, emotional, social and physical growth. It focuses on the whole person, recognising the importance of developing an individual's full potential, not just intellectual intelligence (Boie et al., 2023). Holistic education aims to connect learning to real life, and promotes awareness of the interconnectedness among various disciplines as well as their connection to the global world. It emphasises the importance of meaningful learning experiences that influence the way students see the world and interact in it (Falloon, 2020).

The main principles of holistic education include student-centred learning, where the teacher acts as a facilitator who helps each student find his or her own path in learning. This principle emphasises exploring personal experiences that influence the way students learn and interact with materials (Horvath, 2020). The second principle is learning through collaboration, which encourages interaction and discussion among students to strengthen understanding and develop interpersonal skills. In addition, holistic education also supports continuing education that goes beyond the classroom walls, encompassing learning about the environment, sustainability and social responsibility. This forms individuals who are not only academically smart, but also sensitive and responsive to the issues around them (Kee et al., 2024).

In the current context, where the world faces major challenges such as climate change, inequality, and rapid global integration, the importance of holistic education becomes even more evident. This is because holistic education prepares students not only with technical knowledge and skills, but also with ecological awareness, social empathy, and cross-cultural competence that are essential for navigating and solving complex problems in this interconnected world (Sriwisathiyakun, 2023). This inclusive approach to learning prioritises critical thinking, creativity and emotional intelligence, all of which are crucial in developing individuals' full potential and enabling them to contribute positively to a sustainable and just society. As such, holistic education acts as

a bridge between individual progress and collective progress, ensuring that future generations are equipped not only to succeed personally but also to contribute to the well-being of humanity as a whole (YIĞ & SEZGİN, 2021).

Skills and Digital Intelligence

Digital skills refer to the ability to make effective use of information and communication technologies (ICT) to search for, evaluate, use, share and create content using digital devices such as computers, smart phones and tablets (Carl & Worsfold, 2021). This covers a wide range of aspects from basic device and software operation capabilities, such as the use of office applications and the internet, to more complex capabilities such as programming, graphic design and data analysis. Digital skills enable individuals to interact with the digital world on a daily basis, whether for personal, educational or professional purposes, giving them access to vast information sources, communication tools and economic opportunities (Çetin, 2021).

The components of digital skills can be divided into several key domains. The first is information and media literacy, which includes the ability to find, assess and use information effectively from a variety of digital sources. Second is digital communication and collaboration, referring to the ability to interact productively through digital tools, both individually and in groups, including sharing information and working together on online projects (Chen, 2023). Third is digital content creation, which includes the ability to create and edit digital materials such as text, images and videos. Fourth is digital safety and security, referring to awareness of and action on potential digital risks and management of privacy and personal data (Chung & Yoo, 2021). Finally, digital problem solving and critical thinking, which concerns the ability to use digital technologies to solve complex problems and make decisions based on data analysis. All of these components work together to form digitally competent individuals, preparing them for the challenges and opportunities of this ever-evolving technological era (Churchill, 2020).

Digital intelligence, often referred to as "DQ" (Digital Intelligence), plays an important role in education and everyday life by giving individuals the ability to use and understand technology responsibly, safely, and efficiently (Dangprasert, 2023). In education, DQ not only improves access to rich and varied learning resources but also helps students develop important skills such as problem-solving, critical thinking, and collaboration that utilise digital tools. In everyday life, DQ equips people with the ability to navigate the digital world intelligently, keep themselves safe online, manage their digital identity, and interact and participate in digital communities (DeHart, 2021). By understanding digital ethics, online rights and responsibilities, and developing digital resilience, individuals of all ages can reap the benefits of seamless connectivity while also protecting themselves from the risks inherent in an ever-changing digital environment (DeWaard, 2022).

The Relationship Between Holistic Education and Digital Skills

The integration of digital skills in holistic education offers a holistic approach that prepares students for the modern world, where technology plays an important role in almost all aspects of life. Holistic education, where the core of learning centres on shaping all aspects of a student's personhood - intellectual, social, emotional and physical - takes on a new dimension with the embedding of digital skills (Nurdiana et al., 2023). This enables learning that is more dynamic, interactive and relevant to the needs of the times. Through the integration of digital skills, students not only learn about the technology itself but also how to apply it for creative and innovative solutions to global problems. This ranges from basic technology use skills such as computer literacy, to more complex understandings of digital safety, online ethics and digital leadership (Dou & Zhao, 2023).

Thus, holistic education integrated with digital skills promotes adaptive and flexible learning, where students can learn according to their own rhythm and interests, and develop curiosity and self-learning abilities. The education process becomes less about remembering information and more about understanding how to use that information to make informed and responsible decisions (EROGLU & OKUR, 2021). This strengthens students' preparation for the future, not only in the context of careers but also in becoming thoughtful global citizens, with the ability to address challenges with critical and collaborative thinking. It also supports equity in education by providing access to a wide range of learning resources for all students, regardless of their socio-economic background, as well as opening up opportunities for inclusive and sustainable teaching and learning (Erwin & Mohammed, 2022).

The Role of Digital Skills and Intelligence in Holistic Education

Digital skills have become the key to unlocking contextualised and relevant learning, allowing educators and learners to connect learning materials to the real world around them. By using digital tools, learning is no longer limited to book texts and classrooms; instead, technology opens up opportunities for in-depth exploration, research and analysis of a range of issues and phenomena occurring at both local and global levels (Falloon, 2020). For example, through research-based projects that use data from the internet, students can investigate and understand relevant environmental, economic, or social issues, and then use digital platforms to present their findings. This not only develops their digital skills but also teaches them how to apply this knowledge in making good and responsible decisions in real life (Fernández, 2020); (Fickenscher & Pagliaro, 2021).

In addition, digital skills enrich the learning experience by facilitating personalised and differentiated learning. Digital tools and online learning resources allow students to learn according to their own pace, learning style and interests, making

learning more engaging and effective (Sarmila et al., 2023). Teachers can use technology to customise learning materials, provide different tasks to meet students' individual needs, and use interactive educational applications to support the concepts being taught. This helps to ensure that learning is not only relevant to students' needs and interests but also gives them a sense of ownership and involvement in their own learning process (Haddar et al., 2023). Digital skills, therefore, are not just about mastering technological tools, but about how to use those technologies as tools to create learning that is more immersive, contextualised and relevant to students' lives (Tuhuteru et al., 2023); (Aslan & Pong, 2023); (Astuti et al., 2023).

Digital intelligence, which includes the ability to use technology effectively and ethically, has great potential in developing critical thinking and problem-solving skills among students. In a world increasingly dominated by fast and vast information, digital intelligence helps students not only to access and process information but also to evaluate its credibility and relevance (Fu, 2023). It encourages them to think critically about the source and content of information, distinguish between facts and opinions, and develop the ability to make good arguments supported by verifiable evidence. Through activities such as online debates, discussion forums, and research assignments using digital sources, students learn to ask the right questions, analyse data, and synthesise information from multiple sources to produce a comprehensive and mature understanding (Glass & Hickman, 2020).

In addition, digital intelligence also enhances students' ability to find effective solutions to complex problems. Through the use of analytics software, modelling tools and simulation technologies, students can experiment with different scenarios and see the outcomes of certain activities or decisions without significant risk (Gómez-Trigueros, 2023). It is not just about learning technology, but rather using technology as a tool to dig deeper, see causal relationships, and innovate solutions. Students, thus, learn to apply knowledge in a practical setting, enhance their creativity, and build confidence in their problem-solving abilities. Digital intelligence, in this way, serves not only to arm students with the necessary tools to face the future but also encourages them to become adaptive and innovative thinkers (Gu & Ding, 2022).

Implementation of Digital Skills and Intelligence in Curriculum

Integrating digital skills into the curriculum requires a strategic and structured approach to be effective. The first step is to design the curriculum to include technology-based learning early on. This can be done by aligning learning standards with relevant technologies, so that students not only learn curriculum content but also how to use digital tools to support their understanding (Gündüzalp, 2021). Teachers need to be actively involved in this process, receiving adequate training to use digital tools in both teaching and assessment. By equipping teachers with technological skills, they can design learning materials that integrate the use of apps, educational software, and

online platforms to increase student interactivity and participation (Hashish & Alnajjar, 2024).

Furthermore, the use of technology-based projects is an effective way to make learning more relevant and contextualised for students. These projects can involve tasks that require students to conduct online research, use digital tools for data analysis, or collaborate virtually with their peers (Horvath, 2020). For example, students could be invited to develop multimedia presentations, create vlogs, or participate in online simulations that encourage them to use their digital skills in practical settings. Through such projects, students not only strengthen their understanding of the subject matter but also develop digital competencies that will be useful in their further education and future workplace (Hurlbut et al., 2020). With this strategy, the integration of digital skills into the curriculum not only supports pedagogical objectives but also prepares students to be active and competent participants in a digital society (Imjai et al., 2024).

One of the main challenges in implementing digital skills into the curriculum is the limited access to up-to-date technology and adequate infrastructure, especially in resource-limited areas. Students and teachers may not have the necessary devices, or schools may lack sufficient internet bandwidth to support the use of large amounts of technology (James, 2020). To address this, schools can seek support from stakeholders, including governments, technology companies and non-profit organisations, to provide the necessary devices or improve internet infrastructure. In addition, the utilisation of existing technology in creative ways, such as the use of student mobile devices or free software, can help reduce this burden while maintaining technology integration (Katunga et al., 2023).

The second challenge is the need for continuous professional development for teachers, so that they feel confident and competent in implementing and managing technology in their teaching. Without proper support, teachers may feel overwhelmed and hesitate to adopt these new methods. For this reason, educational institutions need to provide intensive and thorough training programmes for teachers, which not only aim to improve their digital skills but also to show how technology can be integrated pedagogically (Kee et al., 2024). Collaboration and sharing of best practices between teachers is also very important. The development of professional learning communities where teachers can discuss, experiment and get feedback on their technology-based learning approaches can be a valuable source of support and inspire innovation in teaching practices (Keengwe & Onchwari, 2020).

In conclusion, the integration of digital skills into education curricula is a complex but important task that requires strategic and collaborative action to overcome a series of significant challenges. These include limited access to technology and infrastructure, professional development needs for teachers, variability in students' technological abilities, and the importance of parental and community engagement (Khulwa & Luthfia, 2023). Addressing these requires investing in technology resources, building

effective teacher training programmes, implementing differentiated learning strategies to accommodate student diversity, and strengthening cooperation between schools, families and communities (Konovalenko et al., 2020).

A holistic and adaptive approach to digital education, which recognises and responds to diverse needs and conditions, is key to effectively integrating digital skills into the curriculum. As such, it is important for all stakeholders to work together to provide a conducive learning environment where students can develop the digital skills essential for their future success (Lo, 2024); (Widjaja & Aslan, 2022).

Conclusion

In an increasingly connected and technology-dominated global context, the adoption of digital skills and intelligence is crucial in the future concept of holistic education. Holistic education not only involves cognitive aspects, but also develops students' social, emotional and technological capabilities. Digital skills, including information literacy, digital critical thinking and cybersecurity, prepare students for an increasingly digital world of work and support them in utilising technology responsibly and productively. The integration of these digital skills increases students' opportunities to collaborate, innovate and communicate on a global scale, making them active participants capable of contributing to a rapidly changing society.

In addition, digital intelligence includes the ability to use digital technologies, communication tools and/or networks to access, manage, integrate, evaluate and create information in an ethical manner. Through a holistic education that incorporates digital skills and intelligence, students are not only equipped with the tools to deal with an ever-evolving world, but also with the framework to think critically about the implications of technology on ethics, privacy and social impact. This fuels the creation of the next generation who are not only technologically proficient, but also wise in their use, ready to lead and shape the future responsibly.

In conclusion, adopting digital skills and intelligence in the holistic education of the future is not just important, but essential, to prepare the younger generation for the challenges and opportunities in an increasingly digitised world. This integration allows students to not only hone their technical abilities, but also develop a deep understanding of the ethical, social and personal implications of technology in everyday life. Thus, providing a comprehensive education that encompasses digital skills and intelligence will equip students with the tools needed to succeed academically, professionally and personally, while making them responsible global citizens who actively contribute to the betterment of society.

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