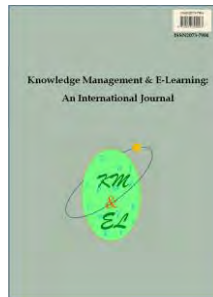

Connecting digital literacy in higher education to the 21st century workforce

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Connecting digital literacy in higher education to the 21st century workforce

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Abstract: The remarkable advancements in technology have affected the way people engage, work, and learn. Digital literacy, also known as virtual learning, has the potential to improve lifelong learning. Workplace skills evolve at such a rapid pace that no school system can keep up with the continual need to alter how we work and live. Most crucially, our society's profound changes require young people to acquire new abilities. Malaysia has a long-term vision that calls for sustainable and productivity-driven growth that can only be accomplished with digitally literate employees. Although to some extent Malaysia education system has been initiating, there is very limited research that focuses on what drives digital literacy. There is no proper framework or guidelines that can be used as a blueprint to prepare the young graduates in the 21st-century workforce. The purpose of the study is to examine the drivers of digital literacy that can be taught in higher institutions and apply in today's digital workplace. This research focused on young adults as a unit of analysis and a quantitative method was used to collect the data. A total of 300 young individuals responded through self-administered questionnaires. The finding of the research showed that critical skills, operational skills, visual learning style, collaborative learning style and learning system enhance digital literacy. Finding further recommend that digital literacy improve both academic performance and employability. From this research, solutions can be proposed

to both academicians and employers in achieving the digital literate graduates for the 21st-century workforce.

Keywords: Learning skills; Learning style; Learning system; Digital literacy; employability

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1. Introduction

Workplaces are gradually becoming more technologically oriented, with other advancements leading to the development of new jobs and the removal of old ones. The world of education is constantly evolving, just as the world of information has changed dramatically. Rather than merely "knowing," today's education demands that we focus on the development of soft skills, communication, creative thinking, and adaptability. As a result, we'll have to rethink how we approach this. The most preferred talent is not just related to the highest academic qualification, but their ability to analyse and apply. It is therefore important for the next generation to be prepared for the skills needed, as they will need to adapt to new ways of developing, communicating, and interacting (Dewi et

al., 2021). Higher-education institutions have full responsibilities to guide the students who can succeed in an era of digital information. Microsoft's Vice-President, Worldwide Education, Anthony Salcito said that to prepare the students for the 21st-century workforce, they are required to equip themselves with the necessary skills, particularly in critical and creative thinking, collaboration, communication, and computational thinking. As such, educators are encouraged to incorporate their current teaching approach with digital learning. Microsoft's survey also found that 91% of respondents assumed that students who are not prepared to meet evolving job demands and skills will not be able to adjust to a potential workforce with low digital literacy (Gay, 2019).

Learning is critical to economic achievement and social cohesion, particularly in the global digital economy and rapid technological change. Hence, increased participation and achievement in learning require open access to learning and education (Benlamri et al., 2016). Malaysia has a long-term vision that demands sustained and productivity-driven growth, which will be attainable only with a critical thinking and digitally literate workforce. Although to some extent Malaysia education system has been initiating, up to the author's knowledge there is very limited research explore possible drivers that enable young adults to become a digitally literate workforce. There is no proper framework or guidelines that can be used as a blueprint for the higher-education institutions to prepare the young graduates in the 21st-century workforce. Kispeter (2018) commented that researchers must investigate how an understanding of the range of skills that comprise digital literacy will be applicable to educational settings. Since there is no specific learning style (Hinrichsen & Coombs, 2013), Gomendio (2017) strongly recommended researchers and adult educators to continue undertakings to identify and share the learning practices that support the effective way to improve digital literacy. As our world has changed, educators need to reconsider not only the type of learning style and skills that students can follow but also to build learning environments that can prepare and excel each person for successful lifelong learning (Groff, 2013).

When the learning environment is not interesting enough, there is no way individuals can be digitally literate (Jongsermtrakoon & Nasongkhla, 2015). Kaeophanuek et al. (2018) call for further research to discover how to design a learning environment to improve learners' digital literacy. As a result, the study's goal is to look at the factors influence digital literacy that young people should learn in higher education and then apply in today's digital workplace. Research by Burning Glass Technologies has shown that approximately 8 out of 10 mid-skill workers now require a degree of digital competence. There is gap between demands and target users' skills and knowledge (Limaye et al., 2015). Employers have reported digital skills gap among the employees in today's society, which hinders economic productivity and growth in their respective sectors (Nair, 2021). From this study, it is anticipated that results can be proposed to both academicians and employers in achieving the digital literate graduates for the 21st-century workforce.

2. Literature review

Digital literacy is demanding in today's highly competitive markets. In reality, digital literacy has been seen as an important life skill (Morris, 2018). A digitally literate means one can create, manage and gather information with it, and turn that information into something useful. In the higher education sector nowadays, it is challenging to assure that their graduates are digitally literate (Frazel, 2010). Many employers acknowledge that higher education institutions are failing to adequately guide graduates in the area of digital literacy (Duggan, 2013). The reason behind this is that companies do not know

exactly what skills their workforce has or what skills the company needs to prioritise. As a result, they could not clearly communicate with higher-education institutions.

2.1. Antecedents of digital literacy

Digital literacy is a set of competencies that guides a person to use digital devices effectively in the digital age, such as easily accessing, evaluating, analysing, applying, and synthesising data, as well as creating new knowledge (Ferrari, 2012). In the same way, we can define digital literacy as the ability to utilise information and communication technologies (ICTs) to find, comprehend, evaluate, produce, and convey digital information (ALA's Literacy Clearinghouse, 2017). Currently, there aren't many studies that look at which factors influence digital literacy. Hence, researchers are interested in conducting studies on the elements that influence digital literacy skills (Fahrurrozi et al., 2021).

Learning skills – In the aftermath of the global pandemic, the necessity of digital skills has never been more apparent as digital technology will be crucial to future resilience and prosperity. According to UNESCO (2018), digital skills are a collection of abilities that allow people to use digital devices, networks and communication applications to create and exchange information, connect and collaborate, and solve problems to improve their lives, learning, work, and social activities. The terms "digital skills" and "digital literacy" are not interchangeable. What and how are the focus of digital skills and why, when, who, and for whom is the focus of digital literacy. Digital literacy builds on the skills that form the foundation in the form of functional literacy (Julien, 2016). Several things can contribute to the level of digital literacy. One of the factors is the individual skills that have a significant impact on digital literacy (Anisimova, 2020).

The rapid development of digital technologies necessitates the end user possessing an ever-expanding set of skills in order to use such technologies (Limaya et al., 2015). According to UNESCO (2018), digital literacy is more than just knowing how to use a computer. It includes fundamental skills as well as living skills that apply to all aspects of modern life. Hajkowicz et al. (2016) critiqued that computer programming skills can become important for a wide variety of occupations, but they remain silent on what other digital skills may entail. Past evidence suggests that many students lack critical skills for finding and evaluating information (Mather & Cummings, 2015). Besides, Machete and Turpin (2020) highlighted that most students nowadays are lack of ability to properly evaluate online information and they do not think that critical thinking skills are necessary for them. They just simply use available online information for current needs (Wang & Artero, 2005). Students are therefore required to be taught the importance of information skills as they will not obtain them by simply experience with information technologies (Eshet-Alkalai & Chajut, 2010). Based on previous researchers' recommendations, Deursen et.al (2014) introduced five sets of digital skills that enhance digital literacy. These are operational skills, information navigation skills, critical skills, social skills, and creative skills. He has urged future researchers to investigate these sets of digital skills that are required for individual learners.

Learning style – Learning styles are personal characteristics that influence a student's capacity to acquire information, connect with peers and the teacher, and participate in learning situations (Riechmann & Grasha, 1974). It also means the way how individuals learn the information in a unique way (Ozata & Ozdamar-Keskin, 2014). A digitally literate individual only understands the most effective and efficient methods

of obtaining the information he or she requires (Gilster, 1997). To be digitally literate, learners have to become active participants in selecting and using the information in a purposeful way. Stary (2016) highlighted that individual to be digitally literate, they must actively seek new information and also have ability to generate knowledge and share it in the workplace. According to a study conducted by Wang et al. (2006), learning style is a crucial element, particularly in web-based learning environments. There are very limited studies exploring the relationship between learning styles and digital literacy. Few researchers, such as Ozdamar-Keskin et al. (2015) look into digital literacy and habits of learners.

In the information age, individuals have turned using digital tools into proactive individuals (Sharkey & Brandt, 2008) and learner preferences are influenced by their learning style. Although several past studies have identified the different type of learning style, no research has yet to confirm which learning style enhance digital literacy (Hinrichsen & Coombs, 2013). Fleming and Mills (1992) identified 4 types of learning styles and these are visual, auditory, reading and kinesthetic. Alternatively, Grasha (1996) classified learning styles as avoidant or participant learning, competitive or collaborative learning and dependent or independent learning. Based on past research on different types of learning style, Ozdamar-Keskin et al. (2015), has developed five types of learning style as visual, dependent, auditory, collaborative, and reading-writing skills. However, Ozdamar called for further research to explore the reliability of the measurement of learning style to improve learners' digital literacy.

Learning system – A learning system provides a database of learning resources and a method for developing, storing and accessing learning resources (Silber, 1972). It also means any sort of learning aided by technology or instructional practice that makes appropriate use of technology. Digital technology is transforming how today's we learn (Coccoli et al., 2014) and digitally literate people with several literacies know how to use digital technology efficiently and successfully (Mohammadyari & Singh, 2015). According to Bawden (2008), digital literacy involves not only learning through a set of diverse skills but also the use of the right tools and technology. As digital technology is such an important part of learning, a certain level of digital literacy is required to have effective outcomes (Eshet, 2004). According to Coccoli et al. (2014), understanding technology is required in addition to having the appropriate abilities and attitudes for successful learning. Several studies have discovered a link between the style of learning and digital literacy (Dobler, 2012; Bruce & Casey, 2012).

Digital literacy education is an approach to respond to digital era challenges and also to overcome problems related to the improper use of digital technologies. Although knowledge and approach play a significant role for individuals to become digital literate persons, knowledge management must be embedded in the learning system to guide learners to achieve knowledge understanding and application. Jongsermtrakoon and Nasongkhla (2015) observed that when learning systems are not well structured, there is a very rare possibility that learners will become digitally literate. Besides, technology and learners demand are keep changing, it is important that the system evolve with learners' needs as well (Rupere & Jakovljevic, 2021). Miller et al. (2008) added that to achieve digital literacy, individuals must have adaptive abilities, participate fully in the learning process and engage in the premium cloud and located learning environments. Only then digital literacy can benefit them and open up new doors to innovation, creative expression, employment, and social participation.

2.2. Outcomes of digital literacy

Labour market transformations are taking place globally and existing jobs are being redesigned, and new jobs are being created, all of which require updated ICT knowledge and skills. Both educational and labour market outcomes can be greatly influenced by digital literacy. Quite unexpectedly, there is relatively little evidence available about the effects of digital literacy. While the effect of digital literacy on academic performance is in the argument stage, its impact on employment opportunities is still yet to explore.

Relationship between digital literacy and academic performance- Academic performance refers to a student's, teacher's, or institution's ability to meet their educational goals (Ward et al., 1996). Adolescents with a higher degree of digital informational literacy (i.e., who can find, search and access various information tools and who are informed about the background in which the information was generated) have improved their grades as well as their intellectual abilities (Leung & Lee, 2016). When students are digitally literate, classroom learning becomes more dynamic and engaging. Hence, digital literacy is crucial to students' academic progress in research on the critical topic of employing technology to increase student achievement (Illera & Kaechele, 2009). According to Thakur (2019), digital literacy boost learning efficacy and performance. In the same way, Lopez Islas (2013) has also found that improved conditions of access to ICT have a clear positive impact on academics' performance. However, a recent study by Argentin et al. (2014) discovered that digital skills do not improve much on students' educational performance.

Relationship between digital literacy and employability – Employability is defined as possessing the "skills required not only to obtain employment but also to advance within a business" (Department of Education, Science, and Training, 2004). Employability isn't just about getting a job; it's also about using associated skills like critical thinking and digital literacy in the workplace (The Open University, 2015). In today's workplace, highly competent professionals are required to do increasingly complicated and engaging jobs. Employees are required not only good in technical preparation but also must have the ability to adapt to changing workplace requirements (Ahmad et al., 2013). Digital literacy skills are related to the concept of employability, as digital literacy aims to improve employability (Vrana, 2016). Because not every employee attains the same degree of digital literacy, it is critical to identify any gaps and rectify them as soon as possible to increase productivity and inclusiveness (BasuMallick, 2019).

2.3. Research framework

Digital literacy is about the capacity of individuals to understand, work and excel in a digital workforce and society. Becoming a digital-literate individual involves developing skills and adapting the learning style to an interactive learning environment. Murray and Pérez (2014) argued that digital skills are essential for most educational disciplines and occupations. Besides, researchers such as Van Laar et al. (2020) and Van Laar et al. (2017) added that there are various factors including learning skills, learning approach and resources, influence digital literacy. At the OECD conference, one of the key issues highlighted was systemic problems that play a significant role in people's digital choices, including those that decide the quality of infrastructure (OECD Report, 2017). Based on previous researchers' comments and suggestions, the proposed framework and hypothesis are developed. Fig. 1 describes the proposed research framework of the study.

H1: Learning skills has significant impact on digital literacy.

H2: Learning style has significant impact on digital literacy.

H3: Learning system has significant impact on digital literacy.

H4: Digital literacy improve academic performance and employability.

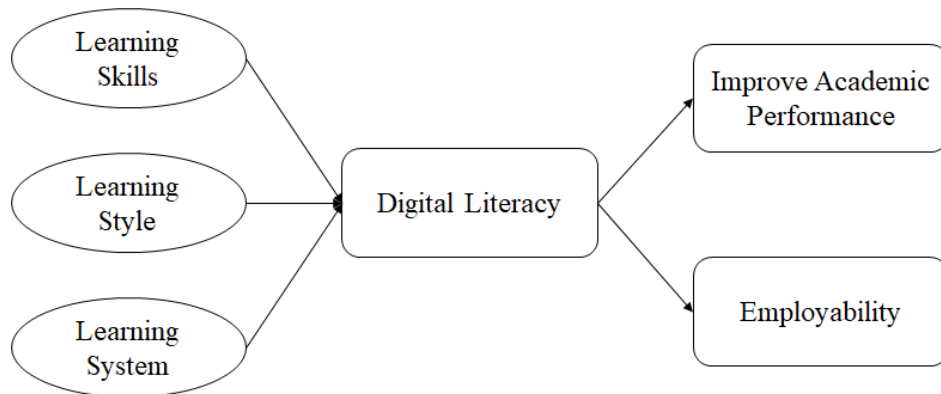


Fig. 1. Conceptual framework to enhance digital literacy

3. Method

The targeted population for this study was young adults who belong to the age between 18 and 32 years old who reside in Malaysia. The reason for choosing this age group is they are aware and have been exposed to digital technologies' tools and resources with a different background and experience (Son et al., 2017). This study has used the convenience sampling method to draw a sample from the targeted population and a survey questionnaire was used to collect the data. To investigate the measurement of digital literacy, a preliminary study with a focus group was conducted. A pilot study on approximately 30 responses was conducted before the field study. This helps to ensure the reliability and validity of the survey questionnaire. Using a face-to-face approach, standardised questionnaires were randomised to a set of 500 participants. As a rule of thumb, the minimum sample size should be at least five times the number of variables to be examined (Hair et al., 1998). Hence, this research targeted 500 samples, but 300 responses were returned and 283 qualified responses were to be used for this study. The survey was analysed using the Statistical Package for Social Sciences (SPSS) statistical software.

Regarding the operational measurement of the variables, learning skills were measured by 40 items and adopted from van Deursen et al. (2014). Whereas, learning style was measurement by 16 items and adopted from Ozdamar-Keskin et al. (2015). For the learning system, it was measured by 8 items and adapted from Wang et al. (2007), Hassanzadeh et al. (2012) and Jongsermtrakoon and Nasongkhla (2015). For the digital literacy measurement, assessment instruments that are currently available were created for a variety of goals. There is no one-size-fits-all assessment of digital competence that can be used for all purposes and contexts. Hence, this study adapts the 6 items of measurement for digital literacy from Morrin et al. (2014) as this measurement tested in the study was similar to the context of this study. Whereas for employability, 4 items were used and adapted from Keeffe (2016). He has suggested future researchers to test

his measurement in a different context of the study. Finally, for the measurement of academic performance, the causal effect of digital abilities on academic success is difficult to establish. Thus, this study has adapted 9 items of measurement for academic performance, which were adapted from Vrana (2004) and Pagani et al. (2016).

4. Data analysis

Out of 283 respondents, 57% percent are male and 43% are female. Among the respondents, 38% belong to 21 to 23 years old, 31% belong to 24 to 26 years old, 15% belong to 27 to 29 years old, 10% belong to 30 to 32 years old and 4% belong to 18 to 20 years old. When respondents were asked which type of technology they have used online, the majority of respondents said that they have experienced using all these types of technologies such as search engines to locate relevant information, use the online library catalogue, use online learning materials and use social networking websites. Only 12% of respondents said that they have used online learning materials and social networking websites. From this finding, this study confirmed that respondents in the study are aware and have some degree of digital literacy.

Table 1
Reliability analysis

Variables	Drivers	Number of items	Cronbach's α	Cronbach's α
Learning skills				.880
	Operational skills	10	.851	
	Information & navigation skills	8	.869	
	Critical skills	8	.822	
	Social skills	6	.814	
	Creative skills	8	.860	
Learning style				.852
	Visual learning style	4	.705	
	Audio learning style	4	.741	
	Dependent learning style	2	.777	
	Collaborative learning style	4	.410	
	Reading and writing style	2	.419	
Learning system		9		.883
Digital literacy		6		.910
Academic performance				.899
Employability				.896

Results in Table 1 show Cronbach's alpha values of all the variables which are all greater than 0.70. The Cronbach alpha coefficients for independent variables are as follows: learning skills with the value 0.880, learning style with the value 0.852, learning system with the value 0.883 and digital literate with a value of 0.910. Whereas Cronbach alpha values for dependent variables are as follows: academic performance with a value of .899 and employability with a value of .896. All the findings signify good reliability at the item level (Hair et al., 2019). Table 1 shows the reliability analysis of the variables. Results from Table 2 shows correlation between digital literacy and learning's skills ($r = .489, p < .000$), learning style ($r = .191, p < .05$) and learning system ($r = .290, p < .05$). Results also further show that there is a relationship between digital literacy and

employability ($r = .510, p < .000$) and academic performance ($r = .729, p < .000$). Therefore, learning skills, learning style and learning system have a significant positive relationship between digital literacy and consequently digital literacy has a significant positive relationship with employability and academic performance.

Table 2
Correlation analysis

		Digital literacy	Academic performance	Employability	Learning skills	Learning style	Learning system
Digital literacy	Pearson Correlation	1	.729**	.510**	.489**	.191*	.290**
	Sig. (2-tailed)		.000	.000	.000	.034	.001
Academic performance	Pearson Correlation		1	.500**	.621**	.228*	.301**
	Sig. (2-tailed)			.000	.000	.011	.001
Employability	Pearson Correlation			1	.347**	.159	.150
	Sig. (2-tailed)				.000	.080	.094
Learning skills	Pearson Correlation				1	.385**	.350**
	Sig. (2-tailed)					.000	.000
Learning style	Pearson Correlation					1	.396**
	Sig. (2-tailed)						.000
Learning system	Pearson Correlation						1
	Sig. (2-tailed)						

Note. **. Correlation is significant at the 0.01 level (2-tailed)

*. Correlation is significant at the 0.05 level (2-tailed)

4.1. Learning skills, learning style and learning system impact on digital literacy

When each independent variable is tested with the dependent variable, the finding shows that learning skills ($\beta = .489, p < 0.000$), learning style ($\beta = .191, p < 0.05$), and learning system ($\beta = .290, p < 0.05$) impact on digital literacy. The finding further from Table 3 shows that among 5 types of learning skills, operational skills ($\beta = .175, p < 0.05$) and critical thinking skills ($\beta = .368, p < 0.05$) impact on digital literacy. However, the results showed that not all learning styles impact digital literacy. Only visual learning style ($\beta = .189, p < 0.05$) and collaborative learning style ($\beta = .195, p < 0.05$) impact on digital literacy. In addition, the learning system ($\beta = .290, p < 0.05$) does impact digital literacy.

4.2. Digital literacy improves academic performance and employability

To analyse the extent to which digital literacy improves academic performance and employability, multivariate analysis was conducted. The result from Table 4 showed that digital literacy improves both academic performances ($\beta = .729, p < 0.05$), and employability ($\beta = .510, p < 0.05$). Further analysis showed that operational skills ($\beta = .236, p < 0.05$), critical thinking skills ($\beta = .594, p < 0.000$) and dependent learning style ($\beta = .207, p < 0.05$) enhance academic performance. On the other hand, operational skills ($\beta = .194, p < 0.05$), social skills ($\beta = .250, p < 0.05$), and collaborative learning style ($\beta = .263, p < 0.05$) improve employability.

Table 3
Regression analysis

Dependent variable	Independent variable	Measurement	Beta	t-value	Significance
Digital literacy	Learning skills	Operational skills	.175	2.117	.036*
		Information & navigation skills	-.066	-.894	.373
		Critical thinking skills	.368	3.481	.001*
		Social skills	.134	1.417	.159
		Creative skills	.089	.973	.332
	Learning style	Visual learning style	.189	1.786	.043*
		Audio learning style	-.057	-.539	.591
		Depend learning style	.074	.760	.449
		Collaborative learning style	.195	1.231	.021*
	Learning system	Reading and writing learning style	.083	.865	.389
			0.290	3.393	.001

Note. **. Correlation is significant at the 0.01 level (2-tailed)

*. Correlation is significant at the 0.05 level (2-tailed)

Table 4
Univariate analysis

Dependent variable	Independent variable	Measurement	Beta	t-value	Significance
Academic performance	Digital literacy	Operational skills	.236	2.106	.037*
		Information & navigation skills	-.044	-.750	.454
		Critical skills	.594	7.169	.000**
		Social skills	.139	1.879	.063
		Creative skills	.057	.797	.427
		Visual learning style	-.033	-.302	.763
		Audio learning style	.058	.554	.581
		Depend learning style	.207	1.921	.047*
		Collaborative learning style	.136	.407	.162
		Reading and writing learning style	-.078	-.825	.411
Employability	Digital literacy	Operational skills	.194	2.087	.032*
		Information & navigation skills	-.015	-.172	.864
		Critical skills	.108	.877	.383
		Social skills	.250	2.290	.004*
		Creative skills	.018	.159	.874
		Visual learning style	.153	1.407	.161
		Audio learning style	-.203	-.974	.141
		Depend learning style	-.035	-.341	.734
	Collaborative learning style	.263	2.761	.007*	
	Reading and writing learning style	.007	.086	.932	

5. Discussion and conclusion

In today's workplaces, digital transformation is a force to be reckoned with. While fears about automation may be unsubstantiated, the smaller impacts of technology are far more prevalent. While eight out of ten mid-level workers now require an elementary level of digital literacy at work, past research, however, criticise those employees are frequently unprepared to meet this need. The purpose of the study is to investigate the drivers of digital literacy that should be taught in higher education and later applicable in today's digital era workplace.

There is no research evidence to show that mere access to digital content and resources would guarantee individuals to be digitally literate and able to make efficient and enriching use of their contents and resources. Thus, it is necessary to investigate on what are the crucial factors in developing and implementing concepts of 'digital literacy' effectively. However, so far, there is no proper measurement to track the effectiveness of digital literacy implementation in the higher education sector in Malaysia. This research highlights future researchers to explore the measurements of crucial factors that contribute to the effectiveness of the implementation of digital literacy in Malaysia.

Finding from the study revealed that operation skills and critical skills are important drivers of digital literacy. As a result, this study strongly suggests that young people's ability to use and analyse electronic resources while integrating available technologies improves their involvement by increasing productivity, creativity, and growth. In the 21st century, the ability to interpret digital, visual and audio media is a type of literacy that is as fundamental as reading and writing skills. The result revealed that visual learning style and collaborative learning style, as well as a learning system, are the drivers of digital literacy. This study recommends that visual and collaborative learning styles are essential for learning and the workplace. The finding also suggests that the learning system should be a key component of science and technology education today.

Digital skills are increasingly essential to the effects of the labour market and social participation. Whether it does matter to academic success was not explored in the past studies. Finding revealed that operation skill, critical skill and dependent learning style are essential in enhancing academic performance. Higher education sectors and government have an important role to play in encouraging greater use of digital learning technology. Future learners should equip with the operation and critical thinking skills when using the technology and it should be a weapon for improving learning and outcomes for individuals. Besides, our finding concluded that individual learner prefers dependent learning style as they still desire for face to face learning and close guidance from the subject experts.

Nowadays, workplaces have a long list of digital skills that workers need to learn, which includes not only expertise with digital technologies but also the ability to build, represent, connect, collaborate and communicate efficiently through digital devices. The finding of the study discovered that operation skills, social skills and collaborative learning style are the keys contributor to employability. The study therefore strongly recommends that learners will be able to use digital technology to communicate, interact, and cooperate, as well as contribute to society through public and private digital services. In addition, learners must also be able to operate specialized digital devices to assess and evaluate information and digital contexts in a specific field to fit into the 21st-century digital workforce (Putnam & Sanchez, 2019).

6. Practical implications

As technology is becoming more prevalent in everyday life, it has a greater impact on the workforce and individual job requirements than anywhere else. Digital literacy has rapidly become an essential job skill across all levels of the company. Employers are looking for employees who are digitally literate because today's professions require digital producers, and using a computer is just the beginning. In a fast-changing and unstipulated environment, lifelong learning can aid individuals to adjust and become strong to external shocks. The widespread adoption of digital technology is changing people's working habits, leading to a rise in the demand for complementary skills.

Reflecting on the finding as critical thinking skills, operational skills, visual learning style and collaborative learning style as well as learning system are the drivers of digital literacy, the implication of the findings suggest that these skills should be developed in formal schooling and the workplace through on-the-job training, as well as through informal learning through leisure activities. A wide spectrum of government and non-governmental players must actively participate in the development of effective skills and policies. Only then will the government be able to develop programmes that will increase employment.

The research also implies that, as operational, critical thinking skills and dependent learning styles boost academic achievement, higher education institutions need to be supported with the finest available training to reap the benefits of new teaching and learning opportunities. Hence, academic administrators must explore how to improve their students' digital literacy to produce graduates who are competitive in today's workforce. Curriculum creation may include the use of computers and software, but it should also be understood and made evident in analytical and discursive activities. In addition, higher education institutions must create a learning system that includes self-centred learning programmes, up-to-date learning resources and activities that are accessible online, and regular collaboration and knowledge sharing.

Finally, because operational skills, social skills, and collaborative learning styles promote employability, organisations must assist individuals in developing the skills required to succeed in a digital workplace and a digitally transforming society. When the workplace becomes increasingly digitalized, employers are also searching for new employees to be technologically literate with soft skills such as teamwork, constructive communication, strategic thinking, innovation and problem-solving, and provide benefits such as flexibility to accommodate this form of desirable employee. Furthermore, organisations that want to achieve long-term goals must develop an effective lifelong learning system that adapts swiftly to labour market demands and provides opportunities.

To be competitive, workers will need to constantly learn new abilities, which will necessitate flexibility, a good attitude toward lifelong learning, and a sense of curiosity. While ICT expertise would be required, a skill set that allows workers to adapt to technological change will be even more crucial. Furthermore, educational programmes should emphasise the development of "fusion skills," which are a combination of creative, entrepreneurial, and technical abilities that enable workers to transition into new occupations as they emerge.

Author Statement

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