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Using Digital Literacy Components to Develop ESL Learners' Digital Mastery

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Abstract

The capacity to locate, assess, and communicate information via keyboards or digital media platforms is known as digital literacy. Utilizing information and communication technology to produce, assess, and distribute information requires a combination of technical and cognitive skills. Some ESL learners are still struggling when they are using the media online to search for articles and journals. In addition, there are still a lot of students that are unsure about how to use digital technology for their education. ESL learners must be proactive and digitally knowledgeable in this age of technology to successfully choose and organize their search results. Without these digital abilities, ESL Malaysian students would not be able to utilize a variety of ICT platforms for information access and processing for academic needs, as well as subsequently for career needs, specifically to fulfil the demands of the Industrial Revolution 4.0 (IR 4.0). This study explores the development of digital mastery using the digital literacy components. The study employed a survey research design. An online questionnaire was distributed to ESL learners in a selected university. A cluster sampling was used in selecting the samples. A sample of 186 university students were involved in this study. Descriptive and inferential statistics were used to analyze the quantitative data collected. Data was analyzed using SPSS version 27 for the questionnaire. In brief, the study contributes to a new model related to digital mastery for ESL students in higher education.

Introduction

Technology and education are inherently intertwined and cannot be easily separated as it has become a useful tool to facilitate learning. From the introduction of interactive smart boards in classrooms to online courses, search engines, educational apps, and Artificial Intelligence, technology has expanded the horizons of education. Therefore, students from primary school until university need to be digitally literate to use the tools for their learning. While most university students currently rely on the Internet as their main tool for accessing various articles online, some still find it challenging to comprehend the information they come across. This difficulty is particularly evident among ESL university students who struggle to use online media to search for articles and journals. Additionally, there remains a significant number of students who lack familiarity and expertise in utilizing digital technology for their academic studies (Alakrash et al., 2022).

ESL university students must be proactive and must be digitally literate so that they are able to select and categorize their search results effectively as the main part of being digitally literate involves utilizing digital technologies to discover, arrange, comprehend, assess, and scrutinize information (Yugay,2023).

Without these digital skills, the students will not be able to cope with diverse ICT modes to access and process information for academic needs, and later for employment purposes specifically to meet the demand of Industrial Revolution 4.0 (IR 4.0). The Fourth Industrial Revolution (IR4.0) has brought about a dire need for highly skilled workers in technical fields (Karim & Mustapha, 2022). The current study investigates the issue of digital literacy among ESL students within Malaysian context since a review of literature reveals a scarcity of this area of the studies.

Literature Review

Digital Literacy

Digital literacy refers to the ability to use digital tools and technology to access, evaluate, create and communicate information effectively (Martin, 2006). Widana (2020) defines digital literacy as "the ability to use and create technology-based content, including finding and sharing information, answering questions, and interacting with others and computer programming" (p. 2). Digital literacy is increasingly vital for academic success as it enhances research, communication, and information processing skills (Zhao et al., 2021). It aids ESL university students in accessing online resources, collaborating with peers, and developing their language abilities (Turan, 2019).

In a study conducted by Eshet-alkalai (2004), digital literacy includes cognitive and technical aspects. For ESL students, this involves not only navigating technology but also effectively uitlising it for language development. Digital literacy in education encompasses various skills. For example, students must have specific skills when reading online text that may contain embedded resources such as hyperlinks, audio clips, graphs, or charts that require students to make choices. this knowledge needs to be updated as digital media evolves constantly in both form and function, from text, images, hyperlinked documents, and interactive video (the 'form' part) to communicating, curating, duplicating, citing, attributing, grouping, and sharing (the 'function' part).

Understanding the nuance of individual platforms–and how they work together to serve various needs and opportunity constitute digital and media literacy. Digital Literacy is about being able to make sense of digital media. This occurs through meaningful and sustainable consumption and curation patterns that improve an individual potential to contribute to an authentic community. This includes the ability to analyze, prioritize, and act upon the countless digital media 21st century citizens encounter daily. According to Figure 1 (Modern Learning Strategies: 6 Channels of 21st Century Learning) by Teachthought (2023), media literacy is one of the six channels of 21st century skills.

This includes the ability to analyze, prioritize, and act upon the countless digital media 21st century citizens encounter on a daily basis. Assessing students' perception of their digital literacy skills ensures we are preparing them for life beyond the classroom. Educators must assist with closing the digital divide between subpopulations

of students to ensure adequate equity and to provide them with the opportunity to compete on a global scale post-secondary education. Young people's confidence can be misleading when applying digital literacy skills to research tasks and when completing projects (Hague & Payton, 2011). Educators cannot take for granted that youth are well versed in digital literacy because they can use social media platforms and navigate through software with little to no assistance.

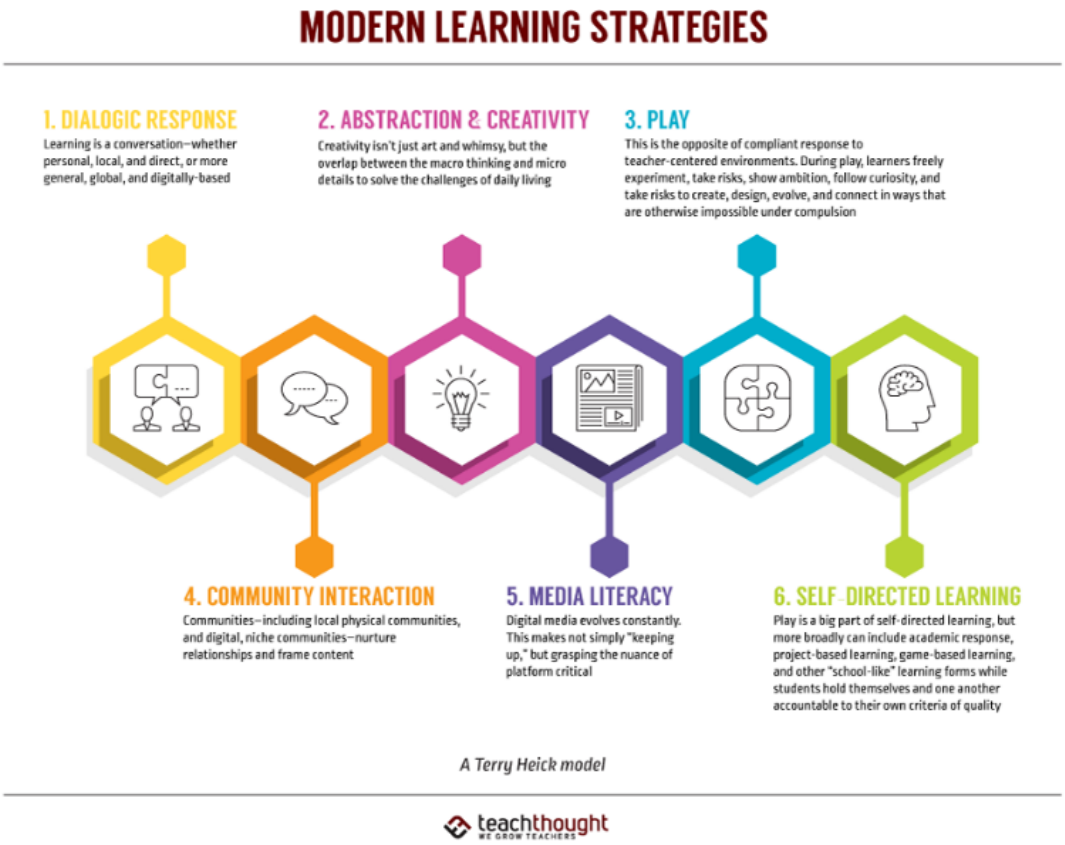

Figure 1. Modern Learning Strategies: 6 Channels of 21st Century Learning

Digital Mastery

Digital mastery is the activation of change that moves and supports education towards a genuine, transformative, learner focused paradigm that influences every day, new education workflows and industrial tools (McClean,2020). Digital mastery does not only include the use of applications and software such as Google Meet and Moodle, it enables learners to generate ideas, explore, build confidence, develop and demonstrate higher order thinking skills . The issue of education and digital literacy and mastery is now on the rise especially with teachers and students are conducting teaching and learning virtually.

Digital mastery goes beyond literacy and involves advanced proficiency in using digital tools and platforms, including a deep understanding of their potential and limitations. Digital mastery is crucial for ESL students to compete in a globally connected world where digital communication and competence are essential (Seldon et al., 2018). Research by Selwyn (2016) emphasizes the importance of not just using technology but also critically evaluating and manipulating it, which aligns with digital mastery. An analysis by Anderson and Ronnkvist (2015)

highlights that digital literacy often serves as a foundational step towards digital mastery, and ESL students who are digitally literate may have an easier transition towards mastering digital tools.

Objectives of the Study

The study's aim is to explore the development of digital mastery using the digital literacy components among ESL students in Malaysia. The following are the study's specific objectives:

- To identify ESL students' perception of digital literacy in Malaysia
- To identify ESL students' perception of digital mastery development in Malaysia
- To examine relationship between ESL students' perception of digital literacy and ESL students' perception of digital mastery development in Malaysia

Conceptual Framework

The conceptual framework as illustrated in Figure 2. Figure 2 depicts the study's conceptual framework and the three primary variables. In this framework, the first variable was digital literacy which was determined as the independent variable based on Widana (2020) model. This variable involved seven sub-concepts which were (1) functional skills, (2) creativity, (3) critical thinking and evaluation (4) cultural and social understanding (5) collaboration (6) effective communication and (7) E-safety. The second variable was the digital mastery for ESL students was designed as the dependent variable. For this variable, we reformed three sub-concepts from three theories or models: (i) Bloom Mastery Learning Model (1968), Digital Mastery Learning Model (DMLM) (2019) and Krashen's Monitor Model (1982) models which are (a) mastery learning, (b) acquisition and (c) digital learning.

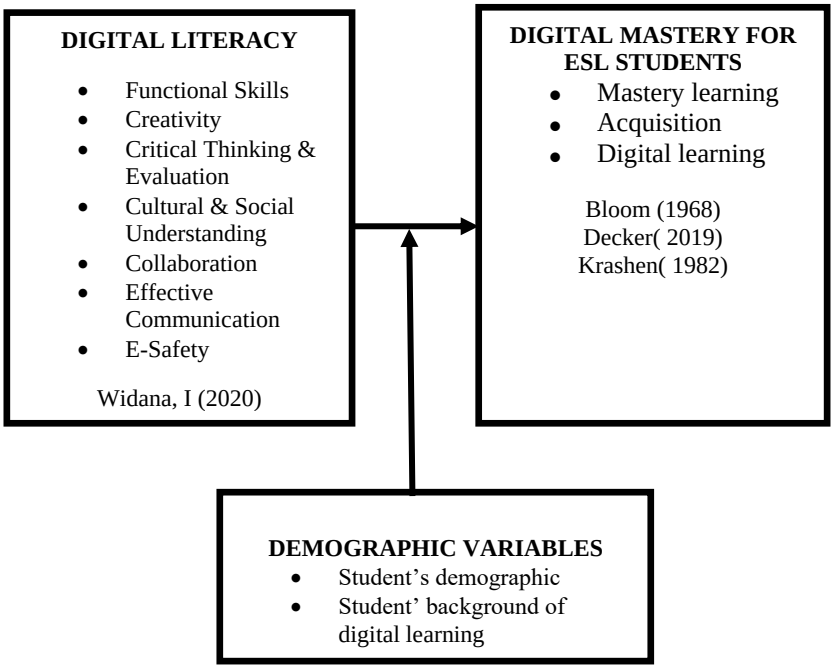

Figure 1. Conceptual Framework for a New Module of Digital Mastery for ESL Students.

We also included the moderator variables consisting of the students' demographics which were gender, age, family monthly income, name of faculty, current semester and background of digital learning. The conceptual framework proposed that the mobile technology adoption would promote digital mastery for ESL students in universities based on the adapted models applied. Based on the theories or models used, the conceptual framework hypothesized that digital literacy was expected to develop a new module of digital mastery for ESL students.

Method

Research Design

This study employed a quantitative survey method. According to Krosnick et al. (2014), a survey method is defined as a systematic inquiry used for collecting data from a pre-defined group of respondents to gain information and insights on a specific topic or issue of interest. The survey method has a variety of purposes and can be carried out in many ways depending on the nature of study and the objectives to be achieved.

Instrument

This study used an online questionnaire that measures ESL students' perception of digital literacy and students' perceptions of digital mastery. The overall questionnaire consisted 80 items. There are three sections: (A) student profile (11 items), (B) perceptions of digital literacy (48 items), (C) perceptions of digital mastery(18 items) and (D) three open-ended items. The respondents were also asked to answer open-ended items in part D of the questionnaire to obtain qualitative inputs regarding the digital learning. The questionnaire items for Section B, C and D were measured by using 5-point Likert scale: strongly agree (5), agree (4), uncertain (3), disagree (2) and strongly disagree (1). The instruments were validated by three experts in the field. And, the reliability of the instrument was determined by using Cronbach Alpha coefficient, $\alpha = 0.99$.

Population and Sampling

The population of the study are undergraduate students from a selected public university in Malaysia who take English as a Second Language (ESL) courses as part of the requirement for their degree. A comprehensive university is chosen because it offers various courses and different fields of study (Malaysia Education, 2021). This selected public university has branch campuses all over Malaysia. Hence, it is selected for its capacity to provide the needed samples, and for a more comprehensive and representative population from the fields/cluster of social sciences and humanities (7 faculties), science and technology (13 faculties), and business management (4 faculties).

A cluster sampling was used in selecting the samples. The samples were selected from the faculties representing 20-30% of each discipline, which means 2-3 faculties from the social sciences and humanities cluster; 4-5 faculties from the science and technology cluster; and at least 1-2 faculties from the business management cluster. Each faculty selected from the clusters provides the representative of its population for the survey. The sample size is determined by using a sample size table by Krejcie and Morgan (1970).

Results and Discussion

This section presents the findings, analysis and discussions of the data gathered from the study. The results of the study are as the following:

Student Profile

Table 1 illustrates the profile of the respondents which are ESL students. The total number of respondents involved in this study is 186. The table shows there are 54 male (29.0%) and 132 female (71.0%) students who answered the questionnaire. There are four age groups in this study. The highest category of age group is 17-19 years which is 72.6% followed by the age group of 20-22 years old which is 22.6% of respondents. The respondents also come from the age group 23-25 years which is 4.8% and 0% from the age group of 25 years abd above. Given the respondents' family monthly income, they mostly come from B40 (RM4360 and below) group which is 50.5%. Next, the respondents come from M40 (RM4361-RM9619) group which is 38.7% followed by T20 (RM9620 and above) group which is 10.8%. Regarding to the students' faculty, the highest number of students are from the applied science (34.9%) followed by the Accountancy (25.8%), Education (22.6%), College of arts (13.4%), Computer and Mathematical Sciences (1.6%) , Architecture, Planning and Surveying (1.1%) and Medicine (0.5%). Most of the respondents are in Semester 2 (57.5%) followed by Semester 4 (16.1%) , Semester 1 (14.5%) , Semester 5 (5.4%) , Semester 3 (3.8%) , Semester 8 (0.5%), Semester 6 (0.5%) and Semester 7 (1.6%). In this profile, we also discover the students' learning problems and disabilities. 96.8% said they have no learning problems and only 3.2% said they have learning problems. 96.2% respondents answered that they do not have any special needs to learn whereas 3.8% of respondents mentioned they need special needs for learning. 76.3% respondents said they like learn writing in English. However, 23.7% said they do not like to learn writing. Many respondents which are 90.9% like to learn reading in English whereas only 9.1% said they do not like learn reading in English. Majority of respondents (96.8%) agreed that they like using technology in learning whereas 3.2% said they do not like using technology in learning. For English learning, 96.8% respondents like using technology whereas 3.2% respondents do not like using technology.

Table 1. Characteristics of Student Profile (n=186)

Characteristics	Frequency	%
Gender		
Male	54	29.0
Female	132	71.0
Age (years)		
17-19 years	135	72.6
20-22 years	42	22.6
23 -25 years	9	4.8
25 years and above	0	0
Family of Monthly Income		
B40 (RM4360 and below)	94	50.5

Characteristics	Frequency	%
M40 (RM4361-RM9619)	72	38.7
T20 (RM9620 and above)	20	10.8
Name of Faculty		
Accountancy	48	25.8
Applied Sciences	65	34.9
Architecture, Planning and Surveying	2	1.1
Computer and Mathematical Sciences	3	1.6
College of Arts	25	13.4
Education	42	22.6
Medicine	1	0.5
Current Semester		
One	27	14.5
Two	107	57.5
Three	7	3.8
Four	30	16.1
Five	10	5.4
Six	1	0.5
Seven	3	1.6
Eight	1	0.5
Do you have any learning problems or disabilities?		
Yes	6	3.2
No	180	96.8
Do you have any special needs to help you learn?		
Yes	7	3.8
No	179	96.2
Do you like writing in English?		
Yes	142	76.3
No	44	23.7
Do you like reading in English?		
Yes	169	90.9
No	17	9.1
Do you like using technology in learning?		
Yes	180	96.8
No	6	3.2
Do you use technology in English learning?		
Yes	180	96.8
No	6	3.2

The responses reported in Tables 2 and 3 highlighted ESL students' perceptions of digital literacy and ESL students' perceptions of digital mastery. The mean values in this study were classified into five categories: strongly agree (4.21-5.00), agree (3.41- 4.20), uncertain (2.61-3.40), disagree (1.81-2.60), and strongly disagree (1.00-1.80). The three greatest and three lowest means of the items based on the findings were described in this section.

Students' Perception of Digital Literacy

In Table 2, the results of the study revealed ESL students' perception of digital literacy. The analysis showed that the items were divided into seven sub-concepts which are functional skills, creativity, critical thinking and evaluation, cultural and social understanding, collaboration, effective communication and E-safety. The table showed the results of the three highest and the lowest mean for ESL students' perceptions of digital literacy. Based on the analysis of the three highest mean, the ESL students mainly strongly agreed (M=4.53; S.D=0.76) that they think it is important to use social networks safely (item 44) under E-safety construct. According to Finkelhor et al. (2021), teaching students about digital and media literacy and privacy protection is not the only aspect of online safety education. The second highest mean revealed that they also strongly agreed (M=4.41; S.D=0.72) that they use digital technology saves time and efforts in searching information for English learning (item 32) for collaboration construct. The last highest mean showed they strongly agreed (M=4.35; S.D=0.75) that using digital technology is much easier to create online communities (item 21) for cultural and social understanding construct.

Conversely, given the course critical thinking and evaluation construct (item 14), the students agreed (M=3.94; S.D=0.83) that using digital technology develops my inference skills for the first lowest mean. Similarly, the second lowest mean came from the same construct showed that ESL students agreed (M=3.91;S.D=0.86) that using digital technology develops my skills in drawing conclusions (item 15). Finally, for the effective communication construct, ESL students agreed using digital technology is more effective compared to face-to face communication during the discussion of tasks and assignments (M=3.64; S.D=1.12) in item 39.

Table 2. Perception of Digital Literacy

Item	Statement	M	SD	Interpretation
	Functional Skills			
1	Using digital technology helps me to learn English language skills more effectively	4.24	0.79	Strongly agree
2	Using digital technology improves my reading skills in English language.	4.25	0.83	Strongly agree
3	Using digital technology improves my writing skills in English language.	4.13	0.86	Agree
4	Using digital technology improves my listening skills in English language	4.25	0.80	Strongly agree
5	Using digital technology improves my speaking skills in English language	4.09	0.87	Agree

Item	Statement	M	SD	Interpretation
6	Using digital technology improves my grammar in English language	4.12	0.86	Agree
	Creativity			
7	Using digital technology helps me to develop creative thinking in English learning	4.05	0.83	Agree
8	Using digital technology helps me to construct new knowledge in English learning	4.23	0.80	Strongly agree
9	Using digital technology helps me to generate new ideas	4.21	0.83	Strongly agree
10	Using digital technology helps me be more innovative in learning English	4.03	0.88	Agree
11	Using digital technology enables me to invent new things online in relation to learning English	4.01	0.90	Agree
12	Using digital technology develops my creativity skills	4.13	0.86	Agree
	Critical thinking and Evaluation			
13	Using digital technology helps me to evaluate information more critically when learning English	4.02	0.81	Agree
14	Using digital technology develops my inference skills	3.94	0.83	Agree
15	Using digital technology develops my skills in drawing conclusions	3.91	0.86	Agree
16	Using digital technology develops my critical thinking skills	3.99	0.80	Agree
17	Using digital technology develops my problem-solving skills	4.09	0.75	Agree
18	Using digital technology develops my evaluation skills	4.04	0.77	Agree
	Cultural and Social Understanding			
19	Using digital technology helps me to understand cultural differences	4.22	0.81	Strongly agree
20	Using digital technology helps me to socialize with people from across the world	4.28	0.80	Strongly agree
21	Using digital technology is much easier to create online communities	4.35	0.75	Strongly agree
22	Using digital technology enables me to develop cultural understanding	4.22	0.77	Strongly agree
23	Using digital technology enables me to develop social understanding	4.20	0.76	Agree

Item	Statement	M	SD	Interpretation
24	Using digital technology develops intercultural communication skills	4.15	0.80	Agree
	Collaboration			
25	Using digital technology helps me to communicate with friends and instructors for English learning	4.32	0.81	Strongly agree
26	Using digital technology supports me to collaborate with friends and instructors for English learning	4.20	0.85	Agree
27	Using digital technology is much easier for working on collaborative tasks and projects	4.22	0.85	Strongly agree
28	Using digital technology develops better learning environment	4.13	0.88	
29	Using digital technology enables me to work better with my friends in completing assignments and projects	4.23	0.81	Strongly agree
30	Using digital technology develops collaboration skills	4.11	0.86	Agree
31	Using digital technology helps me to find usable information and resources for English learning	4.39	0.70	Strongly agree
32	Using digital technology saves time and efforts in searching information for English learning	4.41	0.72	Strongly agree
33	Using digital technology helps me to improve my ability to find and select information for English learning	4.33	0.72	Strongly agree
34	Using digital technology enables me to choose relevant and irrelevant information or resources	4.25	0.82	Strongly agree
35	Using digital technology enables me to complete my assignments and projects easily	4.31	0.78	Strongly agree
36	Using digital technology develops my research skills	4.34	0.76	Strongly agree
	Effective communication			
37	Using digital technology is much easier for online communication with friends and instructors	4.18	0.84	Agree
38	Using digital technology helps me to clearly express my ideas when discussing tasks and assignments with friends	3.99	0.95	Agree
39	Using digital technology is more effective compared to face-to face communication during my discussion of tasks and assignments	3.64	1.12	Agree

Item	Statement	M	SD	Interpretation
40	Using digital technology enables me to discuss my assignments and projects easily	4.04	0.87	Agree
41	Using digital technology enables me to communicate effectively	3.99	0.82	Agree
42	Using digital technology develops my communication skills	3.89	0.93	Agree
	E-Safety			
43	I think internet safety is important when using digital technology	4.38	0.96	Strongly agree
44	I think it is important to use social networks safely	4.53	0.76	Strongly agree
45	I understand about online safety when I use digital technology	4.24	0.75	Strongly agree
46	I am always aware about online safety when I use digital technology	4.25	0.82	Strongly agree
47	When using digital technology, I understand the risks and rewards of sharing personal information online	4.33	0.85	Strongly agree
48	Using digital technology develops cyber awareness skills	4.27	0.83	Strongly agree
	Total average	4.17	0.60	Agree

Students' Perception of Digital Mastery Development

The next part of the survey questionnaire was about ESL students' perceptions of digital mastery (see Table 3). Based on Table 3, the items of the questionnaire were grouped into three sub-concepts which are mastery learning, acquisition, and digital learning. In this part, the analysis of responses was depicted based on the three highest means and the three lowest means. First, the highest mean for digital mastery (acquisition construct) was that the ODL learners strongly agreed (M=4.22, SD=0.80) that they improve reading skills when they use digital materials for English learning (item 10). Likewise, the results of the study also showed that the study's participants felt positively about using digital texts in their academic writing and they were interested in using digital texts than printed texts (Manalu, 2019). They also strongly believed (M=4.22, SD=0.77) that they find that using digital technology enhances digital skills (item 14) in digital learning construct. In mastery learning construct, ESL students agreed (M=4.17, SD=0.80) that they find learning English language using digital technology is fun and interesting (item 2).

With regards to the lowest means, the analysis showed that ESL students agreed (M=3.97, SD=0.78) they understand subjects better when they use digital technology (item 1) in mastery learning construct. Likewise, students just agreed (M=3.99, SD=0.91) that they sometimes do English activities and practices using digital technology to improve their learning performance in item 5. Regarding digital learning construct, the findings also revealed that ESL students agreed (M=4.01, SD=0.81) that they know how to use various advanced digital features when using digital technology for learning (item 17).

Table 3. Perception of Digital Mastery Development

Item	Statement	M	SD	Interpretation
	Mastery Learning			
1	I understand my subjects better when I use digital technology.	3.97	0.78	Agree
2	I find that learning English language using digital technology is fun and interesting.	4.17	0.80	Agree
3	I find it easy to learn English language using digital technology	4.09	0.85	Agree
4	I find that using digital technology improves my English learning performance	4.10	0.79	Agree
5	I sometimes do English activities and practices using digital technology to improve my learning performance	3.99	0.91	Agree
6	I feel motivated to learn English when using digital technology	4.04	0.82	Agree
	Acquisition			
7	I usually use digital resources to acquire new knowledge in English learning	4.13	0.80	Agree
8	I improve my listening skills when I use digital audios for English learning	4.10	0.76	Agree
9	I improve my speaking skills when I use digital videos for English learning	4.08	0.83	Agree
10	I improve my reading skills when I use digital materials for English learning	4.22	0.80	Strongly agree
11	I improve my grammar structures when I use digital technology for English learning	4.06	0.82	Agree
12	I believe that interacting with my friends using social media helps me to improve my English language	4.17	0.82	Agree
	Digital Learning			
13	I enjoy learning facilitated by digital technology	4.20	0.76	Agree
14	I find that using digital technology enhance my digital skills	4.22	0.77	Strongly agree
15	I feel more independent when using digital technology for English learning	4.08	0.79	Agree
16	I find that using digital technology enables me to control over time, place, and pace for English learning	4.12	0.81	Agree

Item	Statement	M	SD	Interpretation
17	I know how to use various advanced digital features when using digital technology for learning	4.01	0.81	Agree
18	I understand that digital culture exists when interacting other people using digital technology	4.17	0.73	Agree
	Total average	4.11	0.63	Agree

Table 4 illustrated the findings of the overall mean and standard deviation whereas Table 5 showed the relationship between ESL students' perceptions of digital literacy and ESL students' perceptions of the digital mastery. Tthe overall mean for digital literacy was (M=4.17; SD=0.60) and (M=4.11; SD=0.63) for digital mastery.

Table 4. Overall Mean and Standard Deviation

Constructs	Mean	Standard Deviation
Digital Literacy	4.17	0.60
Digital Mastery	4.11	0.63

Table 5 showed the correlation of each construct between ODL learners' perceptions of Open and Distance Learning and mobile technology adoption for the technical course. Results of Pearson Correlation showed that there is a significant highly positive correlation ($r= 0.90$; $p<0.01$).

Table 5. The Relationship between the Perception of the Digital Literacy and Digital Mastery Development

Variable	Digital Mastery	
	r	p-value
Digital Literacy	0.90	0.00

Open-ended Items Results

In the final part (Part D) of the questionnaire, ESL students need to answer three open-ended items (see Table 6). The data was analysed using thematic analysis. For Item A, the students were asked to give the three main reasons why they like digital learning. From the analysis, the students rated easy and flexible as the highest rank for this item. This finding was in line with the results of the study done by Karim and Mustapha (2023) found that mobile as a digital device is easy to use and flexible for students' learning. The students agreed that digital learning is fun learning and enjoyable followed by it also promotes creativity.

The students also listed out the three barriers that suppress digital literacy among ESL learners. The analysis showed that there were three major barriers: (1) internet connection problem, (2) inconvenient surroundings and (3) lack of motivation. The next item asked the students to suggest how to enhance digital learning among ESL learners. The first highest rank for the theme emerged was to increase fun and interactive learning activities. They also suggested that the institutions should provide more ICT training and workshops to enhance digital learning. Finally, they also believed that digital learning could be enhanced by increasing student's motivation.

.Table 6. Open-ended Items Results

Open-ended Item	Rank	Main Themes	Frequency (f)
A. List 3 main reasons that you like digital learning	1	Easy and flexible for learning	121
	2	Fun learning and enjoyable	30
	3	Promotes creativity	5
B. List 3 barriers that suppress digital literacy among ESL learners	1	Internet connection problem	94
	2	Inconvenient surroundings	22
	3	Lack of motivation	17
C. List 3 suggestions to enhance digital learning among ESL learners	1	Increase fun and interactive learning activities	40
	2	Provide ICT training and workshops	24
	3	Increase student's motivation	10

Conclusion

In summary, the results of the study present empirical data on ESL students' perception towards digital literacy and digital mastery in Malaysia. In terms of the perception of digital literacy, the findings show that the majority ESL learners strongly agreed that the digital literacy components support the digital mastery development in ESL learning. Regarding the perception of digital mastery, the ESL students perceived that mastery learning, acquisition and digital learning constructs are extremely useful for digital mastery development. The findings of this study also discovered that there was a significant relationship between the perception of the digital literacy and digital mastery development. Digitally competent ESL students may find it easier to get started with digital tool mastery because digital literacy frequently acts as a prerequisite for digital mastery. Hence, the current study adds to a new framework for ESL students in higher education regarding digital mastery.

Notes

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References

Alakrash, H.M., Abdul Razak, N., & Pramela Krish, P.(2022). The Application of Digital Platforms in Learning English Language, *International Journal of Information and Education Technology ,12* (9), 899-904.

Anderson, R., & Ronnkvist, A. M. (2015). The presence, use, and perceived value of student support services

in the community college online classroom. *The Internet and Higher Education*, *25*, 14-24.

Bloom, B. S. (1968). *Learning for Mastery. Instruction and Curriculum. Regional Education Laboratory for the Carolinas and Virginia,* Topical Papers and Reprints, Number 1. Evaluation comment, 1(2), n2.

Decker, C. (2019, February 5). *DMLM. Second Workshop on Digital Mastery Learning Model (DMLM)*. https://christiandecker.de/tag/dmlm/

Eshet-Alkalai, Y. (2004). Digital literacy: A conceptual framework for survival skills in the digital era. *Journal of Educational Multimedia and Hypermedia*, *13*(1), 93-106.

Walsh, K.M., Pink, E., Ayling, N., Sondergeld, A., Dallaston, E., Tournas, P., Serry, E., Trotter, S., Spanos, T., & Rogic, N. (2022). Best Practice Framework for Online Safety Education: Results from a rapid review of the international literature, expert review, and stakeholder consultation. *International Journal Child Computer Interaction, 33*, 100474.

Hague, C. & Payton, S. (2011). *Digital literacy across the curriculum: A futurelab handbook*. Available at: http://archive.futurelab.org.uk/resources/publications-reports-articles/handbooks/Handbook1706.

Karim, R.A. & Mustapha, R. (2022). TVET Student's Perception on Digital Mind Map to Stimulate Learning of Technical Skills in Malaysia. *Journal of Technical Education and Training, 14*(1), 1-13.

Karim, R.A., Mustapha, R. (2023). The Malaysian Higher Education Students' Perceptions and Acceptance Toward Mobile Learning During the COVID-19 Pandemic. In: Laouar, M.R., Balas, V.E., Lejdel, B., Eom, S., Boudia, M.A. (eds) 12th International Conference on Information Systems and Advanced Technologies "ICISAT 2022". ICISAT 2022. Lecture Notes in Networks and Systems, vol 624. Springer, Cham. https://doi.org/10.1007/978-3-031-25344-7_4

Krashen,S.(1982). Principles and practice in second language acquisition. www.sdkrashen.com/content/books/principles_and_practice.pdf

Krejcie, R., & Morgan, S. (1970). Sample size determination. *Business Research Methods*, *4*(5), 34-36.

Krosnick, J. A., Lavrakas, P. J., & Kim, N. (2014). Survey research. In H. T. Reis & C. M. Judd (Eds.), *Handbook of research methods in social and personality psychology*. 404–442. Cambridge University Press.

Manalu, B. H. (2019). Students' Perception of Digital Texts Reading: A Case Study at the English Education Department of Universitas Kristen Indonesia. *Journal of English Teaching, 5* (3). 191-203.

Malaysiaeducation.info.(2021). Types of Educational Institutions in Malaysia. Retrieved from https://www.malaysiaeducation.info/higher-education/types-of-higher-educational-institutions.html

Martin, A. (2006). *Literacies for the digital age*. In A. Martin & D. Madigan (Eds.), Digital literacies for learning. 3-25. London: Facet Publications

Seldon, S.A., & Adiboye, O. (2018). *The Fourth Education Revolution: Will Artificial Intelligence Liberate or Infantilise Humanity*.

Selwyn, N. (2016). Is technology good for education? Digital technology and its role in promoting social justice. *Journal of Philosophy of Education*, *50*(2), 203-217.

TeachTaught.(2023).Modern Learning Strategies: 6 Channels Of 21st Century Learning. https://www.teachthought.com/the-future-of-learning/modern-learning/

Turan, Z. (2019). *The role of digital literacy in the information literacy training of EFL learners*. In Advances in Information and Communication Technologies.

Widana, I. (2020). The effect of digital literacy on the ability of teachers to develop HOTS-based assessment.

Journal of Physics: Conference Series. 1503. 012045. 10.1088/1742-6596/1503/1/012045.

Yugay, E (2023). Digital literacy as a key factor in educating intellectual youth. *Journal for Educators, Teachers and Trainers, 14* (1). 367-376.

Zhao, Y., Pinto Llorente, A. M., & Sánchez Gómez, M. C. (2021). Digital competence in higher education research: A systematic literature review. *Computers & education*, *168*, 104212. https://doi.org/10.1016/j.compedu.2021.104212

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