SMART SOCIETY 5.0: TEACHERS' DIGITAL LITERACY WITHIN ENGLISH LANGUAGE TEACHING

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Abstract
Smart society 5.0 has led digital literacy to be essential for English teachers to survive in facing digital environment of English language teaching. The English teacher's roles are both developing their digital literacy and leveraging digital technology in assisting their students to properly and effectively use them. This study, therefore, aimed at investigating the digital literacy levels of the English teachers, delving the perceptions of the English teachers about digital literacy, and scrutinizing the differences of digital literacy between male and female English teachers. The respondents consisted of 33 English teachers working in public and private senior high schools around Denpasar, Bali. Then, mixed-method research design was employed, and multiple research instruments including a questionnaire, interview and focus group discussion were administered to address the topic. To analyze the garnered quantitative data, descriptive statistical analysis was used; meanwhile, to analyze the qualitative data, qualitative analysis was used involving data collection, data reduction, data presentation and conclusion. It was found that the level of the English teachers' digital literacy was in good level. The female groups outperformed the male groups in 4 dimensions of digital literacy. Then, there were 4 perceptions about digital literacy proposed by the English teachers.

Keywords: digital literacy, English language teaching, smart society 5.0

Introduction
The era of smart society 5.0 is a collaboration between humans as the center and technology as the basis. In this era, technological advances have a significant impact on every aspect of human life. This impact occurs when accessing and obtaining various information in real-time and quickly anywhere and anytime. This convenience is supported by the existence of a search engine (search engine) that helps someone find the desired reference material quickly and cost-effectively. This phenomenon is known as "the world is flat" – which refers to a situation where the world is not limited to national boundaries and time zones because of technological developments (Friedman, 2016). Advances in information technology and the internet have certainly resulted in an abundance of digital information resources.

Meanwhile, on the other hand, the development of information technology is likened to two sides of a coin that provides both positive and negative effects (Anggeraini, Faridi, Mujiyanto, & Bharati, 2019; Asari, Kurniawan, Ansor, & Putra, 2019). If used properly, the benefits of technology are good for humans. However, if used for bad purposes, technology can harm humans and the environment.

Advances in information technology have created new virtual and artificial spaces. The development of information technology is supported by the penetration and behavior of Indonesian internet usage, which has experienced growth from year to year. The survey on internet users in the 2019-2020 (Q2) period by *Asosiasi Penyelenggara Jasa Internet Indonesia (2020)* found that there was an increase in the percentage of internet users in Indonesia by 8.9% with the total number of internet users being 196,714,070.3 of the total population Indonesia 266,911,900 (Association of Indonesian Internet Service Providers, 2020). It can be interpreted that the role of the internet which tends to move into a basic need for everyone is increasingly important in social, economic and political life in a globalized world. Unfortunately, this increase in penetration has not been followed by the ability of the community's digital literacy.

To face the era of smart society 5.0, adaptation and qualified competence are needed so that education plays an important role in shaping 21st century life skills. With the current rapid development of technology, advances in information technology, especially in teaching English, are inevitable, for example teachers designing teaching materials, videos animation that requires internet access is an important aspect of classroom learning (Mu'in, Mariani, & Nasrullah, 2021). Information technology-based education is a strategy in preparing students to face the "information age" by teaching them the basic skills needed in the world of work (Fraillon, Ainley, Schulz, Friedman, & Gebhardt, 2014)The use of technology in learning has been carried out by educators as indicated by the inclusion of technological tools in class such as laptops, computers and smartphones. A research from Project Tomorrow (2012) shows that 70% are administrators and 54% teachers in various parts of the world, use smartphones to complete daily work.

The use of information technology in learning and academic life has implications for improving the quality of education (OECD, 2018). The role of the teacher in using computer-assisted language learning has been proven to be able to improve the ability of the students' outcomes which include all English skills (Lee, 2019). It is very important for English teachers to be digitally literate to support digital instruction because digital tools are fundamentally changing the nature of knowledge enabling new ways to construct and convey knowledge creatively, positively for the collective and the individual (Nguyen, 2014). Teachers as the frontline in education are not only competent in teaching but also master technology so that they can become creative, innovative and collaborative role models.

For this reason, English teachers must have digital literacy or known as digital literacy. Digital literacy is the ability to use digital technology, communication devices or networks, evaluate, create and use information (Kementerian Informasi dan Komunikasi, 2021; Munir, 2017; Supangkat, 2020). These abilities include the ability to read and interpret information, produce data, evaluate and apply new knowledge gain from the digital environment (Munir, 2017) which is carried out with cognitive and technical skills (Syaripudin, Ahmad, Ningrum, Banyumurti, &

Magdalena, 2022). With digital literacy, teachers are better able to involve students in more meaningful learning by integrating communication and information technology (Pratolo & Solikhati, 2020).

The use of digital skills in class is the way to involve students in an active learning process and to bridge the digital divide which exists between the use of ICT inside and outside school. In this case, teachers' role is prominent. They must be digitally literate before shaping their students to have digital literacy. The aspects of digital literacy can be broken down into 6 such as Technological or Instrumental Skill that is related to manage hardware and software (apps, programs, devices), Information Skill that is related to select, evaluate, analyze all the information found in the net, Communication Skill that is related to express properly in a digital environment using different audiovisual formats, Critical Skill that is related to have a critical knowledge and thinking, Security Skill that is related to act with responsibility, respect and security, as well as Digital Content Creator Skill that is related to understand and be able to create creative and attractive digital content. (Law, Woo, de la Torre, & Wong, 2018; Rodríguez-De-dios, Igartua, & González-Vázquez, 2016).

However, in 2017, Indonesia's ICT Development Index was ranked 7th out of 11 countries in Southeast Asia (Kementerian Informasi dan Komunikasi, 2021). Then, the results of discussions with high school English teachers in Nusa Penida revealed that teachers' ICT literacy in adopting ICT to support the English learning process is still low (Juniarta, 2017). In addition, the results of research at high schools in Yogyakarta revealed that teachers did not welcome digital systems and technology as well as inadequate abilities and skills (Pertiwi, 2020).

Teacher practices in using technology have a close relationship with how teachers perceive technology (Budiman, Rahmawati, & Ulf, 2018). Previous studies have investigated teachers' perceptions of the use of technology in learning (Djiwandono, 2019; Farooq & Soormro, 2018) and found that teachers have a favorable view of the benefits of integrating technology in learning, although there are still many teachers who are reluctant to integrate and utilize technology in classroom learning (Indriani & Wirza, 2020). This phenomenon indicates that teachers' perceptions of the use of technology are not the only factors that influence teacher practices in using technology in the classroom.

Based on this description, it is crucial to carry out an in-depth investigation of the digital literacy of English teachers when the Smart Society 5.0 era just started. Digital literacy for a teacher is a weapon that needs to be sharpened so that teachers can operate and inject technology into learning English. The specific areas of investigation are address as follows: a) What are the digital literacy levels of the English teachers? b) Is there any the difference of digital literacy between male and female English teachers? and c) How is the perceptions of the English teachers about digital literacy?

Method
Research design
The current study was aimed at figuring out the digital literacy levels of the English teachers. investigating the perceptions of the English teachers about digital literacy, and discovering the disparities of digital literacy between male and female English teachers. To answer the objectives of the study, a mixed method research

design was used as the nature of the study was to explain the characteristics and attitudes of the respondents. Moreover, this study was dominantly in quantitative analysis and supported by qualitative analysis. The quantitative findings were collected by means of online questionnaire sparking the respondent's digital literacy level and their perceptions upon digital literacy, and the differences of digital literacy between male and female English teachers. Meanwhile, the qualitative findings were garnered through conducting interview and focus group discussion.

Research respondent

The respondents of this study were 33 English teachers who work and teach in both private and public senior high schools in Denpasar area. All of the respondents were permitted by their principals to participate and join every data collection stage of the study. They were divided into 2 cohorts, 12 males and 21 females who were government employees and non-government employees. Furthermore, having teaching experiences for 3-15 years made them eligible joining this study.

Table 1. Demographic information of the respondents

Aspects		Total
Gender	Male	12
	Female	21
Subject	English	33
Status	Government employee	12
	Non-government employee	21
Years of teaching experience	Less than 5	10
	From 5-10	15
	More than 10 and less than 15	8

Data collection methods

To collect a rich set of data, the researchers administered a combination of both quantitative and qualitative approaches. By using various instruments, the researchers were able to validate the study's findings which led to the production of more trustworthy data. In order to gain the quantitative data, the researchers administered online questionnaire which developed based on the theories of Law, Woo, de la Torre, & Wong (2018); Rodríguez-De-dios, Igartua, & González-Vázquez (2016). Based on the referred theories, six items were used as the aspects of constructing the items of the online questionnaire. These aspects were developed into 30 items wherein each item was measured on a 5-point Likert-type scale continuum of 1 to 5 with 1 represents strongly disagree and 5 represents strongly agree. The researchers used an online anonymous questionnaire created in Google Form to collect the quantitative data. It was administered online as ease of collecting the responses and preserving anonymity of the respondents. The link of the questionnaire was sent to 33 respondents via WhatsApp.

Meanwhile, to collect the qualitative data, interview and Focus Group Discussion were employed. The interview protocols and focus group discussion topics were provided to gain a deep understanding of the respondents' digital

literacy perception. Due to the agreement with the respondents, there were 7 English teachers willingly joined the interview session and focus group discussion via Zoom meeting. The use of this application allowed the researchers with the respondents to have virtual face to face meeting. Their voices were recorded and transcribed verbatim for the analysis. All of them represented private and public senior high schools as well as both government and non-government employees. They also had varied teaching experiences.

All of the research instruments were evaluated for face and content validity and reliability by expert judges. The expert judges included two lecturers who had graduated their doctorate degree who are specialist in English language teaching and educational technology. They were asked to check the relevancy of the items of the instruments with referred theories as well as the appropriates on the items according to the objectives and also provide feedback on the readability of the items. In addition. they also provided suggestions any addition or deletion of any items based on their expertise. Then, Gregory formula was employed to measure the level of content validity of the instruments and the result was deemed as very high (index 1).

Data analysis

To analyze the garnered data, quantitative and qualitative analysis were conducted. The quantitative analysis involves the calculation of descriptive statistics (means standard deviation and percentage) to examine the differences between male and female English teachers' digital literacy. These data were gained through administering the online questionnaire.

To delve the respondents' perception deeper, interview and focus group discussion were used for data collection. The interview and focus group discussion transcripts were analyzed for thematic content. To minimize biases and enhance the quality and credibility of findings, the researchers independently evaluated the data. The data were transcribed, coded, categorized, and evaluated to find the themes.

Findings and Discussion
Findings

In this section, the obtained findings as the results of the analysis upon the research data are listed. There are three subsections which aim at answering each research questions.

The digital literacy levels of the English teachers

To answer the first research question, "What are the digital literacy levels of the English teachers?', the result of the digital literacy level of the English teachers was portrayed by means of a table.

Table 2. The EFL English teachers' digital literacy level

No	Items	Means	Standard Deviation
	Technological or Instrumental Skill		
1.	I identify and use technology and hardware features and functions.	4.21	0.48

2.	I know and understand the data, information, and/or digital content required to operate the device and software technology.	4.09	0.52
3.	I bookmark websites that I like so I can check them out later.	4.33	0.54
4.	I am always connected to Wi-Fi through my mobile wherever I am.	4.00	0.90
Communication Skill			
5.	Depends on who I communicate with, I tend to use one method of communication over another (e.g. calling, sending messages via WhatsApp, sending email messages or other)	3.30	1.19
6.	I send various documents to other people using my cell phone.	3.73	0.84
7.	I always use emojis when communicating with everyone.	3.06	0.97
8.	I am able to maintain the ethics of communicating online.	4.42	0.50
9.	I interact through various digital technologies and understand which digital means of communication are appropriate in certain contexts.	4.15	0.51
10.	I share various data, information and digital content with others through appropriate digital technologies.	4.18	0.53
Information Skill			
11.	I am able to articulate information needs, to search for data, information and content in a digital environment.	4.06	0.50
12.	I am able to collect various information from various sources, to process and to reformulate information according to the source.	4.03	0.53
13.	I am able to analyse, compare, and critically evaluate the credibility and reliability of data sources, information, and digital content.	3.85	0.57
14.	I can manage, store and retrieve data, information and content in digital environments.	4.15	0.57
15.	I am able to distinguish which is hoax information or reliable information.	3.94	0.43
16.	I create and update an information search strategy.	3.79	0.70
Critical Skill			
17.	I compare various sources of information to determine if the information contained is correct.	4.27	0.52
18.	I determine if the information found online is reliable.	3.79	0.78
19.	I use digital tools and technologies to create knowledge and to innovate learning processes and products.	4.21	0.60
20.	I compare different apps to choose the most reliable and safest one.	4.12	0.60
21.	I identify and resolve technical issues when operating devices and using digital environments.	3.88	0.70
Security Skill			

22.	I am able to protect the device, content, personal data, and privacy in the digital environment.	3.82	0.53
23.	I take care of my physical and psychological health when using digital technology.	4.15	0.51
24.	I know and am aware of the impact of digital technology on health.	4.15	0.51
25.	I use software to detect and remove viruses on my laptop/computer.	3.97	0.73
26.	I know and be able to fix my laptop/gadget if there is a problem.	2.55	0.87
Digital Content Creator Skill			
27.	I am able to develop digital content that is useful when teaching learning process.	4.00	0.66
28.	I am able to integrate and elaborate digital content in teaching learning process.	4.03	0.59
29.	I understand how copyright and license apply to data, information, and digital content.	3.91	0.72
30.	I plan and develop an understandable sequence of instructions for a computing system to solve a given problem or perform a specific task.	3.82	0.77
	Average	3,93	0,64

The means of the items under the dimension of Technological or Instrumental Skill (4 items) ranged from 4.00 (SD=0.90) to 4.33 (SD=0.54). The means of the items under the dimension of Communication Skill (6 items) ranged from 3.06 (SD=0.97) to 4.42 (SD=0.50). The means of the items under the dimension of Information Skill (6 items) ranged from 3.79 (SD=0.70) to 4.15 (SD=0.57). The means of the items under dimension of Critical Skill (5 items) ranged from 3.79 (SD=0.78) to 4.27 (SD=0.52). The means of the items under the dimension of Security Skill (5 items) ranged from 2.55 (SD=0.87) to 4.15 (SD=0.51). The means of the items under the dimension of Digital Content Creator Skill (4 items) ranged from 3.82 (SD=0.77) to 4.03 (SD=0.59).

The differences of digital literacy between male and female English teachers

The second research question is "Is there any the difference of digital literacy between male and female English teachers?". The results of the differences are represented by using a table. The table shows the differences in relation to percentages of each Likert scale.

Table 3. Percentages results on English teachers' digital literacy across gender

No	Aspects	Group	SA	A	N	D	SD
1	Technological or Instrumental Skill	Males	30%	66%	5%	0%	0%
		Females	34%	58%	5%	2%	0%
2	Communication Skill	Males	23%	66%	1%	10%	0%
		Females	24%	58%	9%	9%	0%
3	Information Skill	Males	12%	75%	13%	0%	0%

		Females	20%	68%	11%	0%	0%
4	Critical Skill	Males	22%	75%	2%	1%	0%
		Females	29%	58%	11%	2%	0%
5	Security Skill	Males	18%	58%	16%	6%	1%
		Females	15%	62%	14%	8%	1%
6	Digital Content Creator Skill	Males	25%	71%	3%	1%	0%
		Females	19%	62%	17%	3%	0%

Table 3 reveals that the female English teachers outperformed the male English teachers in 4 dimensions of digital literacy on strongly agree scale; technological or instrumental skill, communication skill, information skill, and critical skill. In contrast, the male English teachers were only superior on strongly agree scale in 2 dimension of digital literacy; security skill and digital content creator skill.

The perceptions of the English teachers about digital literacy

The third research question is "How is the perceptions of the English teachers about digital literacy?". To answer this research question, interview and focus group discussion were used to collect the data. The findings are presented by means of a chart.
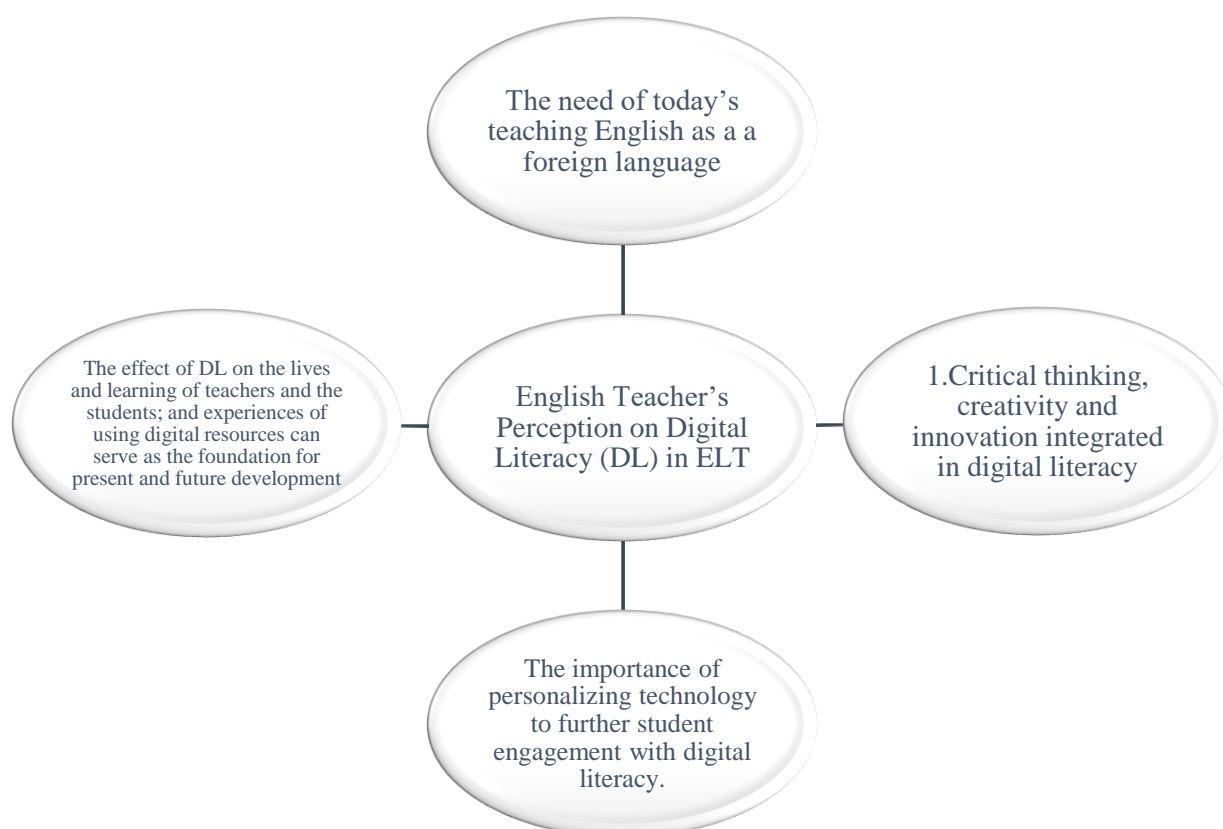

Figure 1. The perceptions of the English teachers about digital literacy

In accordance with the figure 1, there are 4 perceptions of the English teachers about digital literacy found.

Discussion

This study investigated the English teacher's digital literacy in the context of public and private senior high schools in Denpasar area. Teachers have a crucial role in technology integration and they are perceives as a critical factor who determine the success of any innovation within education (Al-Awidi & Aldhafeeri, 2017). Furthermore, the digitalization within education today has made it clear that new competencies must be developed in order for potential teachers to adapt to changing needs. It is now vital to include digital knowledge and abilities into pedagogical competences since digitalization has given a new dimension to teachers' pedagogical skills and competencies.

In relation to digital literacy level of the English teachers, it was portrayed by a figure of 3.93 (means) and 0.64 (standard deviation). It can be interpreted that the English teachers regard themselves competent in digital literacy. This finding is supported by a study by Öngören (2021) that the digital literacy levels of prospective teachers were high particularly in the attitude, technical, cognitive and social sub-dimensions. Another study done by Ata & Yıldırım (2019) figured out that that the teachers had high and positive perceptions of digital literacy which was indicated by the attitude, technical, cognitive, and social factors as the significant predictors of digital literacy.

Afterwards, in relation to differences between male and female English teacher's digital literacy, in this current study, it was found that both of the groups were different according to the dimensions of the digital literacy. From the 6 dimensions, the female English teachers outperformed the male English teachers on 4 dimensions namely technological or instrumental skill, communication skill, information skill, and critical skill. Conversely, the male English teachers were only superior in 2 dimensions of digital literacy namely security skill and digital content creator skill. In a study done by Aslan (2020) figured out that there was a statistically significant difference between the pre-service teachers' digital literacy self- efficacy levels in terms of their gender. Another study done by Çam & Kiyici (2017) identified that male prospective teachers have more visual literacy than female prospective teachers. Besides that, male prospective teachers significantly have more computer literacy than female prospective teachers.

Dealing with the English perceptions about digital literacy specifically within the English language teaching, there are 4 main perceptions identified. First of all, digital literacy is perceived as the need of today's teaching English as a foreign language. It is also argued that when the English teachers want to master digital literacy, therefore, critical thinking, creativity and innovation are primarily integrated. Moreover, the English teachers also perceived that personalizing technology to further student engagement with digital literacy is crucial to be implemented. Finally, digital literacy affects the lives and learning of both teachers and the students; and experiences of using digital resources can serve as the foundation for present and future development. The result of a study by Rusydiyah, Purwati, & Prabowo (2020) revealed that the tendency to use digital literacy as a learning resource in teaching and learning process.

Conclusion

Within the smart society 5.0, being competent in digital literacy is not a privilege but an everlasting result of training and practicing. As the prominent role in English language teaching, being digital literate teachers are demanded. Therefore, within this study, the digital literacy of the English teachers was investigated which focused on figuring out the level of their digital literacy, the differences of the male and female English teachers' digital literacy, and their perceptions about digital literacy. It was figured out that the level of the digital literacy of the respondents was good.

The female English teachers outperformed the male English teachers in 4 dimensions of digital literacy on strongly agree scale. The male English teachers were only superior on strongly agree scale in 2 dimensions of digital literacy. Lastly, four perceptions of the English teachers were found related to digital literacy in ELT. It is suggested that the English teachers must keep upgrading their digital literacy. Without the English teachers' complete support and a strong sense of readiness, the goal of being digital literate will not be put into reality. They must willingly incorporate technology into their lessons and have the technical and pedagogical abilities to use it. The purpose of professional development programs for teachers should be to provide them with technical skills.

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