English Teachers' Perception of Security in Digital Literacy Competence

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Abstract

Teachers play crucial roles to promote students' critical ability in managing information, such as integrating digital literacy skills in the learning process as a source of English learning. Therefore, teachers' competence in digital literacy is significant. One of the competencies is a security aspect, which refers to the competence in maintaining the security of personal and other users' data. This study aims to describe the perceptions of the eighty English teachers in Batam City, Indonesia, on the security in digital literacy competence. The method of this study was descriptive qualitative research. The data collection was done by distributing online questionnaires and conducting structured interviews. It investigated the perception of the teachers toward their competence in the security aspect (personal protection, data protection, digital identity protection, and using security securely and sustainably). The result found that 86% of respondents stated that they can take security measures on digital devices and personal data during the use of digital devices in the teaching and learning process.

Keywords: Digital Security, Digital Literacy Competence, Education, EFL Teachers' Perception

Abstrak

Guru memainkan peran penting untuk mempromosikan kemampuan kritis siswa dalam mengelola informasi, seperti mengintegrasikan keterampilan literasi digital dalam proses pembelajaran sebagai sumber pembelajaran bahasa Inggris. Oleh karena itu, kompetensi guru dalam literasi digital sangat penting. Salah satu kompetensi tersebut adalah aspek keamanan, yang mengacu pada kompetensi dalam menjaga keamanan data pribadi dan pengguna lainnya. Penelitian ini bertujuan untuk mendeskripsikan persepsi delapan puluh guru bahasa Inggris di Kota Batam, Indonesia, tentang keamanan dalam kompetensi literasi digital. Metode penelitian ini adalah penelitian kualitatif deskriptif. Pengumpulan data dilakukan dengan menyebarkan kuesioner online dan melakukan wawancara terstruktur. Ini menyelidiki persepsi guru terhadap kompetensi mereka dalam aspek keamanan (perlindungan pribadi, perlindungan data, perlindungan identitas digital, dan menggunakan keamanan secara aman dan berkelanjutan). Hasilnya ditemukan bahwa 86% responden menyatakan dapat melakukan tindakan pengamanan terhadap perangkat digital dan data pribadi selama penggunaan perangkat digital dalam proses belajar mengajar.

Kata Kunci: Keamanan Digital, Kompetensi Literasi Digital, Pendidikan, Persepsi Guru Bahasa Inggris

INTRODUCTION

The rapid development of digital technology in the industrial era 4.0 has a significant effect on the progress of the world of education. Currently, the learning process is not only carried out face-to-face in the classroom, but can also be done remotely using digital devices, or also called distance learning (online). Distance learning utilizes digital technology as a means or learning medium so that the learning process can take place.

Teachers as educators can use digital technology in learning activities such as reading and giving assignments to their students such as sending emails, reading e-books conducting quizzes online, participating in discussion forums, and so on. Collaboration between teachers and students is

needed to integrate information literacy skills in the process of teaching and learning activities in schools. Teachers have an important role in shaping the character of critical learners in processing information. As educators, teachers can teach information literacy skills in the learning process so that the existence in the learning process, especially digital literacy, is the heart of learning and learning resources for students.

Digital competencies of teachers have been linked to knowledge of the environment in which students live, and the use of technology to encourage learning and development of their competencies. Thus, it can be defined as a group of capacities and skills that lead us to incorporate – and appropriately use – information and communication technology (ICT) as an integrated methodological resource in the teaching and learning process, so that it becomes a technology of learning and knowledge with a clear didactic application.

Information and communication technology is growing rapidly over time (Danuari, 2019). Because of its usefulness, information technology is very helpful for human work in various fields. One of them is in the world of education. During the COVID-19 pandemic, information technology played an active role as an alternative to the implementation of the learning process. The government makes a policy where the learning process must be carried out remotely to suppress the growth of new cases (Haryadi & Selviani, 2021). Students and teachers are required to be able to use technology in the distance learning process (online learning). Teachers as learning facilitators must continue to play their role so that the learning process continues and children can still learn even though they are learning online from home (Tri Sukitma et al, 2020).

Today's students are familiar with digital technologies and understand how to access, produce, and share digital content (Ting, 2015). Greene, Yu, and Copeland (2014) believe that being digitally literate requires finding, organizing, critiquing, and integrating digital information. Although today's pupils are typically seen to be tech-savvy, many need help to do so efficiently. They conclude that students must develop abilities in planning, monitoring, and regulating concerning information management and critical thinking. Gilster (1997) agrees that being digitally literate entails knowing how to obtain information on the web and understanding and assembling information from various print or digital sources. Digital literacy encompasses the comprehension of ideas in addition to the utilization of technology.

The European Framework for Digital Literacy (EFDL), developed as a result of the DigEuLit project to recognize the importance of digital literacy, defines digital literacy as the awareness, attitude, and ability of individuals to appropriately use digital tools and facilities to identify, access, manage, integrate, evaluate, analyze, and synthesize digital resources, construct new knowledge, create media expressions, and communicate with others. (Martin, 2006, p.155)

According to Bawden (2008), digital literacy is broad and can range from specific skills and competencies to general awareness and viewpoints. He differentiates four aspects of digital literacy:

1. Underpinnings of the ability to read and write as well as use software applications and computers

2. Background knowledge, an understanding of how digital and non-digital information is established from various forms of resources and discussed

3. The main competencies are the ability to arrange data from various sources.

4. Attitudes and perspectives the capability to understand independently as well as exhibit appropriate behaviors in a digital environment

As digital technology develops, digital literacy must be updated. It is divided into three stages (Martin, 2006): (1) digital competency, digital knowledge, and experience; (2) digital use of digital competence applications; and (3) digital transformation, the development of new knowledge as an outcome of digital usage. Prior et al. (2016) notice that pupils' degrees of digital literacy vary. Considering that almost all students have a similar or specific degree of digital literacy might lead to issues in online learning. What kids can do may differ from what professors expect.

Thus, Suharwoto (in Prabowo & et al, 2020), stated that based on teachers' skills in using technology during the learning process, only 46% of them are sensitive to technology. This certainly affects the readiness of teachers to carry out their activities online. This causes most of these teachers to only give assignments to students to complete at home, but the learning material is not delivered optimally. As a result, the knowledge that students get does not develop and the teacher begins to be overwhelmed. For this reason, teachers need to have digital literacy competencies. Digital literacy is an individual's awareness, behavior and ability to use digital tools and facilities carefully to identify, access, manage, integrate, evaluate, analyze and synthesize digital resources, add new insights, create media updates, and communicate with others, in the context of certain life situations, in order to enable constructive social action and to describe the procedure. This opinion was conveyed by Martin (in Nahdi & Jatisunda, 2020).

In order to make competency evaluation a central element in creating digital training plans to meet teacher needs, UNESCO explains and justifies professional development programs for teachers, in the form of the DIGCOMP framework. In its latest revision, there are five Common Framework 2017 Dimensions namely IT Information and Literacy, Communication and Collaboration, Creating digital content, security, and troubleshooting (INTEF, 2017).

According to research that has been done by Jeong-Bae Son, Thomas Robb and Indra Charismiadji on 2011 about the current level of computer literacy of a group of Indonesian teachers of English as a foreign language (EFL) and investigated factors affecting their use of computers in classrooms. the study provides a picture of the Indonesian teachers' use of computers in their local contexts and recommend increasing the teachers' online opportunities, skills and competencies in the use of computers for their teaching practices and professional development.

Research conducted by Yudhie Suchyadi, Fitri Siti Sundari, Rahma Alfiani (2021) with the title Digital Literacy Analysis of Elementary School Teacher Candidates in Virtual Classroom-Based Learning. Other relevant research was also conducted by I Gusti Ayu Agung Sinta Diarini and I Made

Ari Winangun (2022) who examined the Effectiveness of Using Online Learning Software During the Covid-19 Pandemic on Teachers of SD Negeri 2 Abiansemal. Another relevant research was conducted by Herdhita Vidya Kharisma (2007) with the title Digital Literacy Among High School Teachers in the City of Surabaya. Relevant research by Ana Irhandayaningsih (2020) with the title Digital Literacy Measurement in Online Learning Participants in the COVID-19 Pandemic Period. The latest relevant research was conducted by Floren Agnesia, Ratna Dewanti, & Darmahusni (2020) with the title Digital Literacy Practice in 21st Century English Learning at Citra Kasih High School.

By knowing or getting to know digital literacy teachers can improve and increase their performance potential in carrying out the teaching and learning process (OECD, 2016). We can conclude that teacher must have competence in the security aspect (personal protection, data protection, digital identity protection, and using security securely and sustainably. This is the reason why researchers want to analyze English teachers' perception of security in digital literacy competence. Because digital competency is an important thing to learn in this era as a special skill in order to be able to compete with other human resources following the development of an all-sophisticated era.

METHODS

This research is descriptive research with a qualitative approach. This study aims to describe the digital literacy competencies of English teachers. This research focuses on the ability of teachers to use technology wisely during learning. The subject was taken on eighty English teachers in Batam City. Data collection was carried out by distributing online questionnaires arranged using a Likert scale with weights of 1-4 (1 = Strongly Disagree, 2 = Disagree, 3 = Agree, 4 = Strongly Agree). In addition, the instrument is also a structured interview question sheet. The instrument indicators were developed based on the dimension of digital competence for teachers that have been validated by Touron, et al (2018). The calculation results were integrated using the percentage of respondents' answers and the interview result data in the analysis with the Miles and Huberman method (data reduction, data presentation, drawing conclusions).

RESULT AND DISCUSSION

The research conducted a survey on the digital literacy competence of English Teachers with the main focus on the dimensions of security from the five dimensions that already existed and was validated by Touron and his team (2018). The data obtained after distributing the online questionnaire was eighty respondents while the interview respondents were ten English Teacher respondents throughout Batam City. Here is an overview of the data graph found and its analysis:

Personal Protection

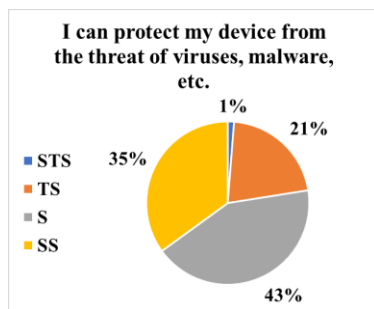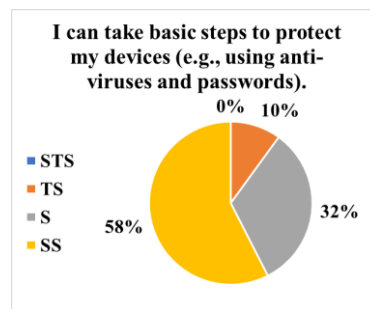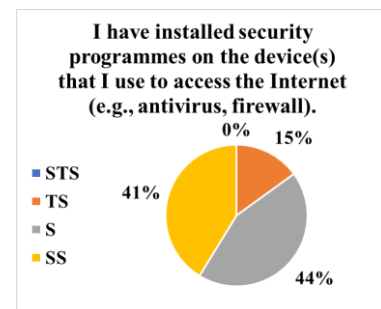**Figure 1**

I can protect my device from the threat of viruses, malware, etc.

1%
21%
35%
43%

- STS
- TS
- S
- SS

Figure 1

Figure 2

I can take basic steps to protect my devices (e.g., using anti-viruses and passwords).

0% 10%
32%
58%

- STS
- TS
- S
- SS

Figure 2

Figure 3

I have installed security programmes on the device(s) that I use to access the Internet (e.g., antivirus, firewall).

0% 15%
41%
44%

- STS
- TS
- S
- SS

Figure 3

Figure 4

I know how to react if my computer is infected by a virus. I can configure or modify the firewall and security settings of my digital devices.

4%
22%
30%
44%

- STS
- TS
- S
- SS

Figure 4

In **Figure 1**, it can be seen that 35% of respondents answered strongly in agreement and 43% others said they agreed that they were able to protect their devices from virus threats. And they can take the basic steps to protect their devices using password and antivirus as seen in **Figure 2** that 58% respondents answered strongly in agreement and 32% of respondents answered agree. Meanwhile in **Figure 3**, it can be seen that 41% of respondents answered strongly in agreement and 44% of them answered agreeing that they can protect their device from virus threats by installing antivirus such as Smadav, or built-in anti-virus such as Microsoft Security, etc. Also as seen in **Figure 4**, there are 22% of respondents answered strongly agreement and 44% others answered agreeing that they know how to do if their devices are infected by a virus and can configure or modify the firewall and security settings of their digital devices.

This is in accordance with what was conveyed by the teacher in the interview:

"Oh yeah, there's that on my laptop. Smadav if I'm not mistaken." – (Respondent 9)

"I just know that it's to protect the computer so it doesn't get infected with viruses, and if there's a notification asking me to scan and clean it, I just have to follow the steps. Ask to be taught with your husband"– (Respondent 9)

"Okay, from the laptop, there is already a built-in anti-virus, if for example it's just, when there's a notification, for example, this word or this site is risky or risky, I won't continue anymore, I'll skip it. But for more depth, I don't really know" – (Respondent 7)
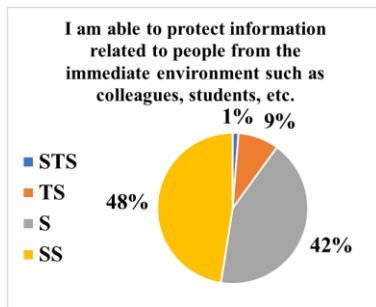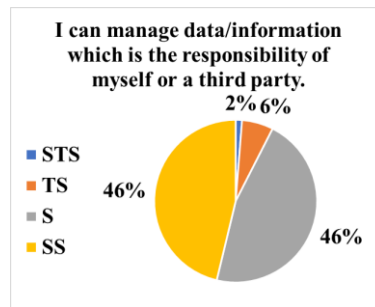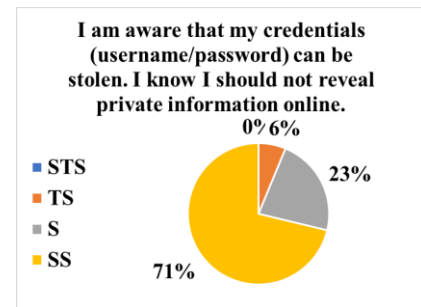
Data Protection

| Figure 5 | Figure 6 | Figure 7 |

As seen in **Figure 5**, there are 48% of respondents answered strongly in agreement and 42% others answered agree that they were able to protect information related to people from the immediate environment such as colleagues, students, etc. Also in **Figure 6**, there are 46% of respondents answered strongly in agreement and 46% others answered agree that they can manage their data or information as their responsibility to protect their information from strangers. Meanwhile as seen in **Figure 7**, there are 71% of respondents answered strongly in agreement and 23% others answered agree that they are aware to their credentials (username and passwords) can be stolen and should not reveal their private information in online.

As one teacher said in an interview:

"It's important to keep your identity. Especially in online learning like the accounts we always log in, then we log out immediately. As much as possible I take care of my own and I also don't abuse other accounts. – (Respondent 1).

This is in line with research conducted by Donna and Irwansyah (2020) on the millennial generation (born 1981-2000) regarding security and privacy awareness. They stated that users should pay more attention to issues of confidentiality, authenticity and data integrity in IoT (Internet of Things).
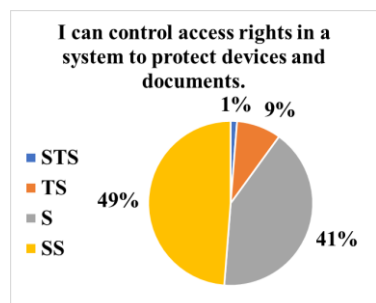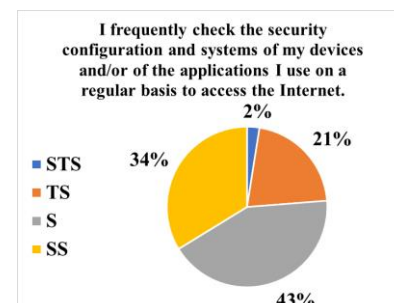
Digital Identity Protection
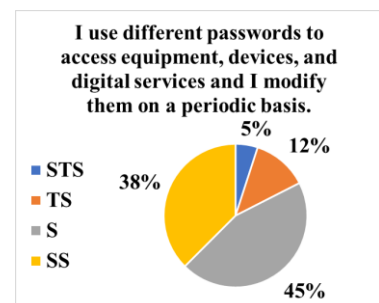

| Figure 8 | Figure 9 | Figure 10 |

In **Figures 8**, it can be seen that 49% of respondents answered strongly in agreement and 41% others answered agree that they can control their access rights in a system to protect their documents and devices. Also as seen in **Figure 9**, there are 34% of respondents answered strongly in agreement and 43% others answered agree that they frequently check the security configuration and systems of their

digital devices and application programs in it and they are using regular basis to access the internet. Meanwhile in **Figure 10**, it can be seen that 38% of respondents answered strongly in agreement and 45% others answered agree that they use different passwords to access equipment, devices, and digital services and modify them periodically.

This is in accordance with the teacher's explanation in the interview:

"Yes, of course, it is mandatory to protect personal information data so that it is not misused by irresponsible people" – (Respondent 5)

"Yes, rhyme, I also really guard my personal information, I'm afraid it will be used for online loans by foreigners. Like what's been going viral lately." – (Respondent 6)
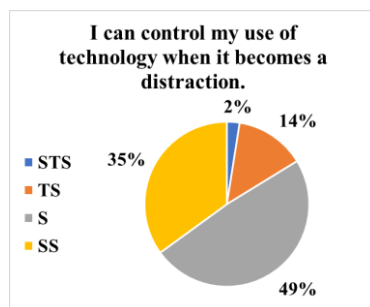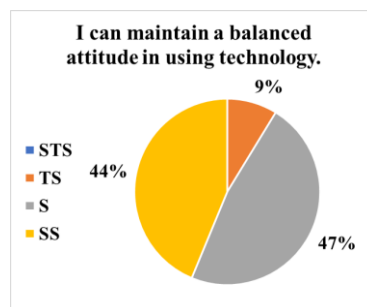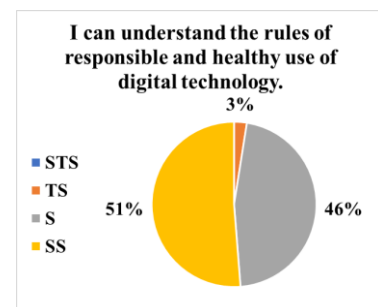
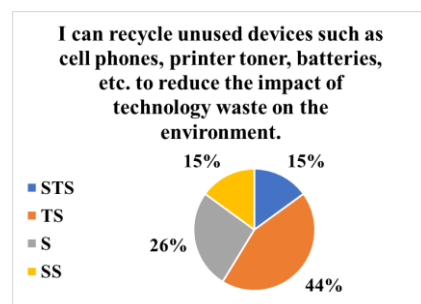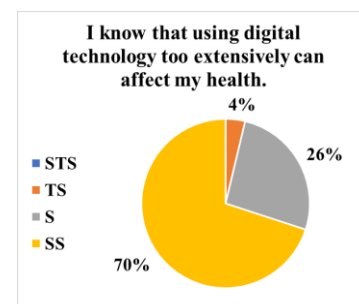### Secure and Sustainable Security

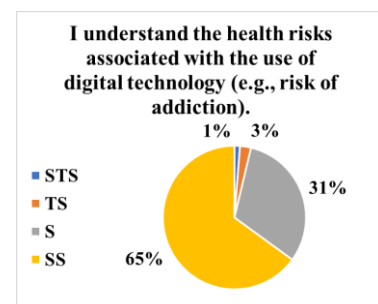Figure 11

Figure 12

Figure 13

Figure 14
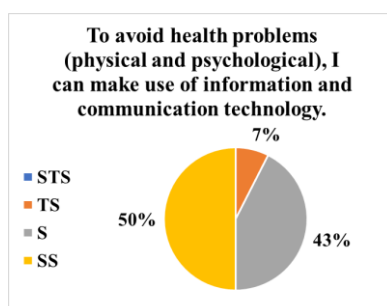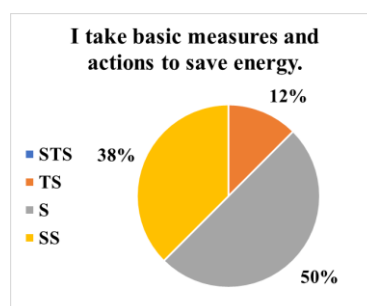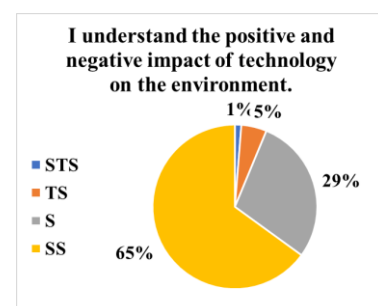

Figure 15

Figure 16

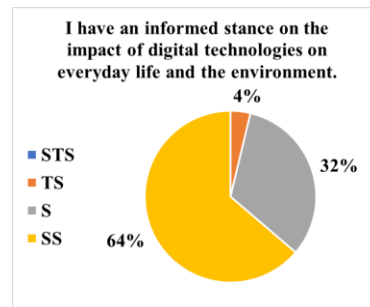

Figure 17

Figure 18

Figure 19

Figure 20

As seen in **Figure 11**, there are 35% of respondents answered strongly in agreement and 49% others answered agree that they can control the using of technology when it become a distraction. Also in **Figure 12**, there are 44% of respondents answered strongly in agreement and 47% others answered agree that they were able to maintain a balanced attitude in using technology. In addition, as seen in **Figure 13** there are 51% of respondents answered strongly in agreement and 46% others answered agree that they understand the rules of responsible and healthy use of digital technology. However, the opposite result is shown in **Figure 14** where 44% of the respondents answered disagree and 15% others answered strongly disagree that they were be able to recycle unused devices such as phones, printer toner, batteries, etc. to reduce the impact of technology waste on the environment. This shows that teachers still need to gain sufficient experience in recycling digital devices to reduce technological waste that can pollute the environment.

In **Figure 15**, it can be seen that the respondents know that using technology too extensively can affect their health, as 70% of them answered strongly in agreement, and 26% others answered agree. **Figure 16** shows 65% of respondents answered strongly in agreement and 31% others answered agree that they understand the health risks associated with the use of digital technology such as risk of addiction. To avoid health problems (such as physical and psychological), 50% of respondents answered strongly in agreement and 43% others answered agree that they can make information about the use of information and communication technology and its impact on health as seen in **Figure 17**.

Figure 18 shows there are 38% of respondents answered in agreement and 50% others answered agree that they took basic measure and action to save energy of the digital device. Meanwhile as shown in **Figure 19**, there are 65% of respondents answered in agreement and 29% others answered agree that they understand the positive and negative impacts of technology on the environment. As seen in **Figure 20**, there are 38% of respondents answered in agreement and 50% others answered agree that they have an informed stance on the impact of digital technologies on everyday life and the environment.

As stated by respondents:
"Yes, using it is not too much, then don't use it when it's charging, well give it a break. – (Respondent 1)

"Yes, if you can say, there is an influence. biggest in sight. Sometimes our eyes get tired. It's better for us to teach all day at school than for half a day looking at the laptop, his eyes are tired" – (Respondent 4)

This is in accordance with the results of Agnesia, Dewanti, and Darmahusni's (2021) investigation at the Citra Kasih School. According to the results of this survey, Citra Kasih School understands the necessity of keeping security while using digital devices. One of the school's attempts is to collaborate with Google to establish a closed educational environment that only the school can access in order to provide a secure and more compatible digital learning environment. As a result, the Citra Kasih School and English instructors in Batam City are already understanding of the need of protecting digital media security. As a result, it is possible to infer that the skill of English instructors in Batam City is already comparable to the Citra Kasih School research by Agnesia, Dewanti, and Darmahusni (2021). Their instructors' talents will definitely expand if they continue to be used in learning and obtain improved instruction to strengthen and perfect these abilities.

CONCLUSION

Because we are needed to stay up with advancements in the field of education, digital literacy competency is vital for teachers. Based on the data analysis and discussion, the degree of perception and knowledge of digital literacy of English instructors in Batam city in terms of security is appropriate. Respondents were able to protect digital devices from virus threats, manage information and protect personal information and those closest to them, use passwords to protect their digital devices and accounts, understand how to use technology responsibly, can maintain a balanced attitude, and can control oneself in the use of technology, and understand the impact of technology in everyday life and know that excessive use of technology is harmful.

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