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DIGITAL AND INFORMATION LITERACY SKILLS AS A BASE FOR EFL SELF-REGULATED LEARNING

by

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Abstract:

A digital environment produces new concepts and understanding of language learning and teaching. Students are encouraged to be able to manage their goals and learning process independently. However, the success of self-regulated learning (SRL) in the digital era depends on the student's ability to explore the latest technology, which is defined as digital and information literacy. The problem comes when the use of higher technology unbalances students' digital and information literacy levels. Therefore, this research examined digital and information literacy skills as a base for ELF self-regulated learning. The researcher designed quantitative research. The questionnaires were distributed to 70 respondents from EFL students at the Department of English, Universitas Negeri Malang. Questionnaire data were analyzed using descriptive statistics to find digital literacy skills. The result showed that the students have a high level of digital literacy. There are underlying factors affecting their decisions and preferences that were explicated in the questionnaire responses, such as intake year, study load, and motivation. The findings about students' digital literacy can support teachers in planning interactive digital language learning. At the higher education level, there should be more practice and monitoring of collaborative learning activities.

Keywords: *literacy; digital literacy; information literacy; self-regulated learning.*

Abstrak:

Lingkungan belajar digital menghasilkan konsep dan pemahaman baru tentang pembelajaran dan pengajaran bahasa. Siswa didorong untuk dapat mengelola tujuan dan proses belajar mereka secara mandiri. Namun, keberhasilan self-regulated learning (SRL) di era digital tergantung pada kemampuan siswa untuk mengeksplorasi teknologi terbaru, yang didefinisikan sebagai literasi digital dan informasi. Masalahnya muncul ketika penggunaan teknologi yang lebih tinggi tidak menyeimbangkan tingkat literasi digital dan informasi siswa. Oleh karena itu, penelitian ini berfokus pada pemeriksaan keterampilan literasi digital dan informasi sebagai dasar untuk pembelajaran mandiri ELF. Peneliti merancang penelitian kuantitatif. Kuesioner dibagikan kepada 70 responden dari mahasiswa EFL

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Jurusan Bahasa Inggris Universitas Negeri Malang. Data kuesioner dianalisis menggunakan statistik deskriptif untuk menemukan keterampilan literasi digital. Hasil penelitian menunjukkan bahwa siswa memiliki tingkat literasi digital yang tinggi. Ada faktor-faktor mendasar yang mempengaruhi keputusan dan preferensi mereka yang dijelaskan dalam tanggapan kuesioner seperti tahun asupan, beban studi, dan motivasi. Temuan tentang literasi digital siswa dapat mendukung guru untuk merencanakan pembelajaran bahasa digital interaktif. Di tingkat pendidikan tinggi, harus ada lebih banyak praktik dan pemantauan pada kegiatan pembelajaran kolaboratif.

Kata kunci: *literasi; literasi digital; literasi informasi; pembelajaran mandiri.*

INTRODUCTION

Digitalized education promotes a student-centered learning model, especially at the university level. The integration of learning and digital tools is a trend in education today, requiring teachers and students to be more willing to improve technology. A report was recently published on how EFL students are engaging with technology. This study focused on how her EFL Zen students at the university level used digital platforms (Turmudi & Ratini, 2022). On the other hand, this study focused on digital and information literacy skills as the basis for EFL self-regulated learning (SRL). The current study therefore fills a gap in some published research and contributes to the body of knowledge. Further, the previous study by Sorgo et al (2016) found that digital native university students were not quite information-literate students, while current university studies are mainly filled with ICT materials (Šorgo et al., 2017). Senior-year-students' digital literacy is medium, which means they still need to improve digital literacy upon their preparation to graduate (Ilhami et al., 2021). The study on EFL students also showed that students might not apply their digital-information literacy to improve their learning (Indah et al., 2022).

Literacy skills are supporting tools for doing SRL strategies to solve digital learning problems, comply with their needs of knowledge and assignment fulfillment. Previously, SRL are examined in different aspects, such as the challenges in SRL (Hensley et al., 2022), the impact of digital tools (smartphone) on students' decreasing goal achievement in SRL (Hartley et al., 2020), digital native university students' low digital literacy (Sorgo et al), and digital media literacy on perception of hoax (Mandasari, Wijayati, Usman, 2021). There are also studies about the effect of virtual education on students' literacies (Shamsaee et al., 2021) and motivation impact on overcoming distractions (Sabilalo et al., 2020). However, the gap is inferredas: there are no preceding studies that discussed how Indonesian EFL students

integrate digital and information as their learning strategy, and the significance of digital and information on students' SRL abilities.

The urge of excelling in digital literacy would benefit students to connect to sources and perform a new way of critical thinking to acquire knowledge independently (Carlson & Brosnahan, 2012), but not neglecting existing ethical norms (Jones & Hafner, 2021). Furthermore, promoting digital literacy for Indonesian students is complex as it deals with the socio-economic factors namely internet cost, gender, the public interest (Brata et al., 2022). It affects the degree of Indonesian EFL students' literacy does not correlate to the mastery of digital aids significantly. It also means that although students are experts in using mobile and computer apps, they still lack critical thinking (Indah et al., 2022).This is what the government focus on improving the people's development. The government has published several digital literacy frameworks continuously (Pusat Kurikulum dan Perbukuan, 2017); and the latest release consisted of digital skills, digital safety, digital culture, and digital ethics (Kementrian Komunikasi dan Informatika RI, 2021).

The newer concepts of digital literacy have combined information literacy in the frameworks. It indicates capabilities of searching through various sources of information, knowing what kind of information needed, managing the information efficiently, as well as evaluating and classifying (Shamsaee et al., 2021). Information literacy competencies referred students as creators and consumers of information who can participate collaboratively (Guo & Huang, 2021). The indicators of information literacy are summarized into seven aspects: identifying, scope, planning, gathering, evaluating, managing, and presenting information (SCONUL Working Group on Information Literacy, 2011). In relevance to Indonesia's higher education, information literacy skills fosters students' ability in establishing definition, conducting research questions, referring to appropriate references, and evaluate the transferability of data. Furthermore, with the vast growth of social media and news platforms, true and false information can be mixed up. Information literacy helps information seekers differentiate the true from false ones (hoaxes) (Rachmawati & Agustine, 2021), and not spreading them (Juditha, 2019). Digital information literacy also indicates students' ability to comply with all the need in the learning, especially for SRL (Self-Regulated Learning).

The main concept of SRL, self-regulation was developed from psychology, that it was supposed to be researched in separate topics between SRL and language learning strategies (Matsuyama et al., 2018). Other EFL researchers however viewed self-regulation in EFL learning strategies correlates to the learners' progress. For example, Teng & Zhang's questionnaire of SRL in writing can check learners' self-directed and strategic decisions to form a good writing piece, and thus it indicates significant effects on learners' writing proficiency (Teng & Zhang, 2016). SRL-based reading activities also had a significant effect on the students' reading comprehension (Nejabati, 2015). Brown & Lee (2012) support these ideas by mentioning SRL in EFL learning as one of the principles to learn a language, although it majorly refers to the extensive or out-of-classroom activities that promotes students' learning independence (Brown & Lee, 2015).

Self-regulation skills eventually help learners select useful information and apply strategies to avoid distractions during the ICT era. The decision making depends on how well the students manage their learning needs using digital and information literacy skills. According to digital learning concepts, information and literacy and digital literacy may support students' SRL (Self-Regulated Learning) strategies and success in achieving their learning goals. Literacy skills in self-regulated learning prompts learners to actively participate in terms of metacognitive, motivation and behavior. Thus they can plan and set learning goals as well as control their learning, motivation, and environment. (Rosyadi et al., 2021)

SRL is not a newly developed approach, yet it is relevant to today's education phenomena after the pandemic outbreak thanks to its traits that support adaptive and digital learning (Harati et al., 2021). The basic skills of conducting self-regulated learning are self-efficacy, independence, and self-control(Saraswati, 2017). Referring to Saraswati and Harati's research, self-regulated learning requires students' consciousness of what and how they should learn. In line with Bakhtiar and Hadwin (2011), a learner's metacognitive consciousness (awareness of planning, monitoring, and evaluating themselves) can foster the learner's metacognitive control, cognition, behavior, and affective(Bakhtiar & Hadwin, 2022). The idea comes up from the self-regulation theory that includes cognition, metacognition, social-behavioral, and motivational regulation (Teng & Zhang, 2016).

Based on this principle, self-regulated learning (SRL) approaches for digital learning began arising. In this context, learning relies on digital tools and media. Hartley et.al (2020) research showed digital tools have two different sides. On one hand, they offer freedom to easily access varied learning sources and learning management systems (Hartley et al., 2020). On the other hand, the freedom of digital modes allows students to meet learning distractions such as misleading information or seduction, decreasing motivation, and procrastination. For example, multitasking features on smartphones harmed students' concentration (Hartley et al., 2020). There are also possibilities of students being exposed to distraction at home more often (Hensley et al., 2022). In addition, Hensley (2021), found out the current learning model impacted their learning goal also tended to be less-achieving; students targeted only short term goals (Hensley et al., 2022).

The current study tries to fill the gap by investigating the real condition of Indonesian university students' digital literacy skills and self-regulated learning (SRL) implementation which integrates the literacies to overcome their current learning problems. That self-regulated learning relies on how much they master the literacies to help them survive their study, this research aims to identify the contribution of digital literacy towards university students' self-regulated learning.

Based on the research background, a research question aroused: *How are EFL students' digital literacy (DL) skills?*

METHOD

Design

This study used descriptive quantitative approach which employed a survey method to figure out the students' digital literacy in self-regulated learning scope. The data was collected from an online survey that involves EFL student responses use Google Form. Students were given an online questionnaire at the beginning, then the researcher examine the responses.

Participant

Participants were undergraduate students in Universitas Negeri Malang, majoring in English language education and literature. The participants were from 2020 and 2021 intake who experienced the transition phases of online digital learning. Several (70)students was

needed to represent the population based on the preliminary interview The information about self-regulated learning challenges and the digital learning environment would be more relatable.

Instrument

The current research collected data from questionnaire responses. The data collection involved two sets of questionnaires to collect different insights of data. The first set of questions would be a self-assessment to figure out students' level of digital and information literacy skills. The questionnaire used a 4-point scale (4 to 1-point range; indicating the most positive to the most negative opinion) for scoring. The questions will cover two frameworks: (Kementrian Komunikasi dan Informatika RI, 2021) for digital literacy framework, and SCONUL's pillars of information literacy (SCONUL Working Group on Information Literacy, 2011).

Data collecting technique

Data collection steps were conducted online. The questionnaire was made by using Google Forms and distributed to 35 participants; 14 participants are students of the 2020 intake year, and the other 21 are 2021 intake students.

Data analysis technique

Results of the first questionnaire were analyzed by coding and tabulating frequency of each question response, and then interpreting the data. The next step is calculating the average score of each respondent to determine the leveling of students' literacies. The score was converted into 4 scales of level differentiation as follows: high, intermediate, lower, and poor.

RESULT AND DISCUSSION

Result

The overall results present the level of digital literacy. The detailed information the students' DL will cover nine parts: (1) usage of digital aids, (2) frequency, time spent, and motivation of usage, (3) digital operation skills, (4) digital safety, (5) digital culture and ethic (6) digital content source, (7) information delivery, (8) digital information content value, and

(9) research inquiry and searching strategy. The first questionnaire shows that the digital literacy skills of EFL students are high. Figure 1.1 describes the distribution of the literacy levels: 14.3% of the participants were at the "very high" level, 74.3% of the participants were at the "high" level, 11.3% of the participants were at "low", and none of them had very low literacy. The average score (M) for the questionnaire was 72, and standard deviation was 7.80. The percentage of high level far outnumbered the other ones indicated most of the students are quite proficient in operating digital aids, solving digital problems, searching for and sorting information, and being ethical in the digital world in the context of EFL learning.

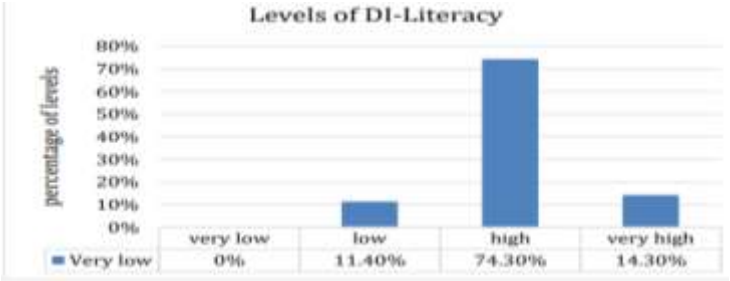

Figure 1.1 Levels of Digital literacy based on final score

The use of digital aids includes the frequency, duration, and preferences of students in using digital aids. In this section, the questionnaire shows participants' choices in utilizing digital aids for EFL learning purposes. Digital aids in this category consisted of mobile/computer apps, websites. This option includes language learning applications/websites that are intended to improve English skills. The number presented is percentage of average use.

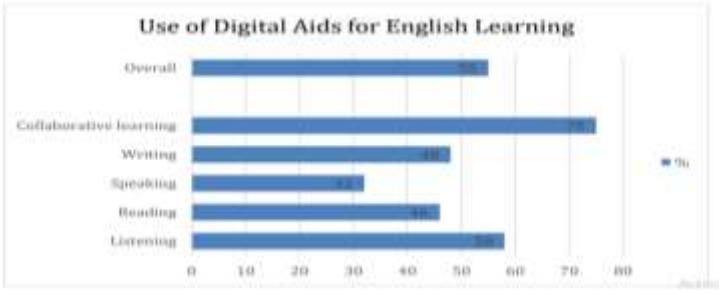

Figure 1.2 Use of digital aids for English learning

The chart shows the percentage distribution of students' choices on digital use in English learning Based on the category of skills, it seemed that students liked to use digital

apps for collaborative learning (75%). The apps chosen were virtual classrooms, video conferencing, online chat, and creative forums. Among these four categories, online chat was most used by students with a percentage of 88 percent. The second highest percentage was virtual class and video conferencing with the same percentage, 76 percent. While the creative forum was chosen by 52.9 percent of students. Seeing the high percentage of the use of all categories, collaboration and discussion media were needed by the students.

The next highest usage was of digital tools for listening skills, 58%. The tools were divided into 4 categories, namely: knowledge resource platforms, news platforms, audio streams/podcasts, and on-demand videos. Based on student preferences and experiences, 46% of the students used digital aids for reading practices. Students' choices were extensive reading sites, e-books, online magazine, and online news.

The next category was digital aids for productive skills practices. Digital aids for speaking were used by 34% of the students, which was the lowest among the other skill-specific aid usage. This category consisted of language learning applications with communication features, speaking practice apps, online conversation platform, and public speaking apps. Next, 48% of the students used digital apps for writing. This category referred to writing platform such as social media, blogs, proofreading tools, and language learning apps. There was one student who wrote down other options, namely games as a writing practice platform.

The frequency as counted in weekly units. Most students (47.4%) use applications and websites between 11-20 times a week, 31 percent of students use them 5-10 times, 10.5% use digital aids more than 20 times a week, and 10 .5 % use it less than 5 times a week. The highest average use is 90-120 minutes per use (36.8%) and the lowest is above 120 minutes (5.3%). The average use of 31.6 percent of students for 60-90 minutes, and 26.3 % of students with an average use of 30-60 minutes.

In relations to motivation or reason to use digital aids, students acknowledged their needs of digital aids. Around 34.3% of students chose to use digital aids for overcoming learning problems, while 62.9% of students wanted more practice for their language improvement. There were 2.9% of students who wanted to use digital aids to catch up with

everyone else who used it. Some of the students who did not use digital apps to help the learning, used them for entertainment or leisure activity.

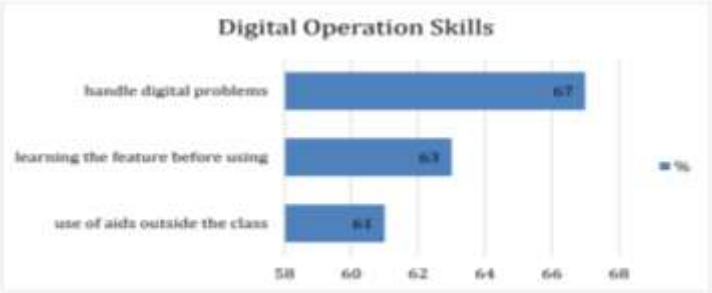

Figure 1.3 Digital Operation Skills

The figure 1.3 stated what the students while using digital aids. Among the respondents, 67% of them agreed that learning with digital aids helped them outside the class, although 31.4% preferred collaborative study and the rest chose to read e-books by themselves. Responses also showed that students would learn the features before using the tools or platform (63%). On the contrary, around 37% of them either asked another person to explain or learning the features while by using them. However, when the app/websites were not working well 61% of the students were able to handle the problem by themselves. They would search information in support section provided by the platform or browse troubleshoot tutorials on the Internet. Meanwhile, the rest of the students preferred to ask somebody else to fix it, forced close, or shutdown the app.

Figure 1.4 Digital Safety

The notion of digital safety was identified by acknowledging the safety of the tools or platforms. Figure 1.4 showed 78% of the students were able to select legal apps that were safe to use. It was then supported by the knowledge on the security preferences on the tools

(hardware), in which 72% of the students were aware of. In this context, the students should be able to set the security settings on their devices. Lastly, digital safety was identified by students' decision when securing their account information. The data reported 66% of them were paying attention to account information security. This category involves students' choices of securing their private information, passwords, and sharing account. That this category reached lower percentage that the others implied that students were less aware of their account security than tools security and platform safety.

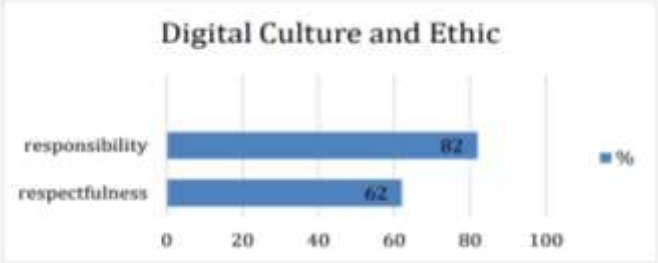

Figure 1.5 Digital culture and ethic

The questionnaire obtained information about students' attitude towards digital user community, to identify digital culture and digital ethic application language learning context The indicator was students were able to respect other user's culture and be responsible of their online behavior or utterances. The figure 1.5 indicated 62% of the students were able to respect ther users of interactive platforms like video conferences, social media, and language earning communities. And 82% of them had good attitude in online interactions.

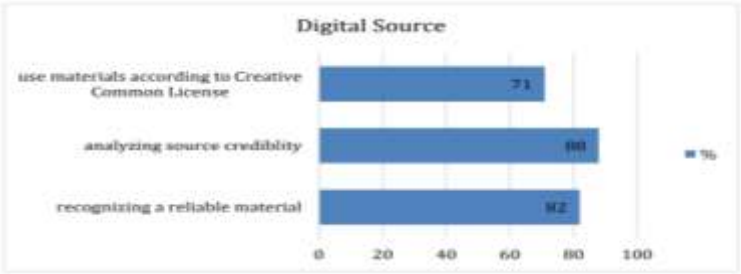

Figure 1.6 Digital Source analysis

The questionnaire results signified students' ability in analyzing online sources. The

implementations were recognizing a reliable material, analyzing source credibility, and using materials according to Creative Common License. Figure 1.6 show 82% of the students could recognize a reliable material that they would take for learning purposes, and 88% of the students analyzed source credibility before taking the materials. Next ithe s Creative Common License, which 71% of the students should pay attentioto n before using and sharing scientific materials.

Figure 1.7 Information delivery

The indicators for information delivery were delivering information to appropriate audience and conveying ideas in a discussion. The results are displayed on figure 1.7. The chart shows that EFL students has good behavior in delivering information. According to the chart, 71% of the students were able to deliver information and design the right language according to the type of audience. For the information accuracy, 79% of the students stated they made sure that the information they shared was accurate. The lowest score here was to share information in group discussion. Compared to two other indicators, it has 63% percentage.

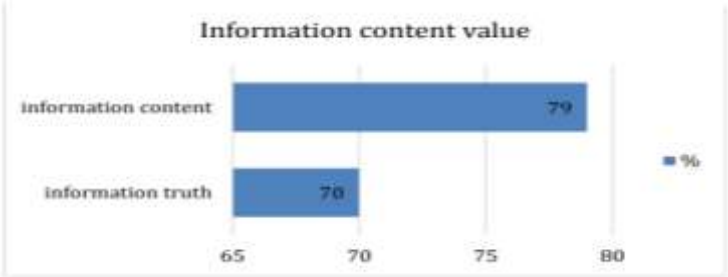

Figure 1.8 Information content value

Digital information content value referred to how someone make value the content, accuracy, and truth of any information. The questionnaire data presents how students

managed to receive true information for themselves or to share in discussions. Figure 1.8 shows that 79% of student values content of information to be right and complete. There was a difference compared to the other indicator which has 70% percentage.

Figure 1.9 Research inquiry and Searching strategy

Figure 1.9 displays 82% of students searched information as a strategic exploration to gain good-quality, complete, and correct information. The strategy was supported by research inquiry method which allowed students to apply the strategy to solve problem and to prove information truth. This category was applied by 78% of the students.

So it is concluded that EFL students of intake year 2020 and 2021 in Universitas Negeri Malang are digitally literate. Figure 1.10 shows that the students level are in high and intermediate level, no one score below. The number students of 2020 intake that reached level "high" were lower than 2021 students; meanwhile more students of 2020 intake were in level intermediate. The reason of this comparison is affected by students' initial knowledge of digital literacy an external factor. Students of 2020 intake are now in their 3rd year of study with possibly higher study load and are not in language skill classes anymore. They can get more distractions to keep improving the language learning in comparison to 2021 students. 2021 intake students were still taking language skill classes. In relations to SRL, the students' responses resemble their choices of digital learning to be fun and flexible. The 2021 intake students were more likely to be self-regulated than 2020 intakes, proven from their choices and decisions in using digital aids.

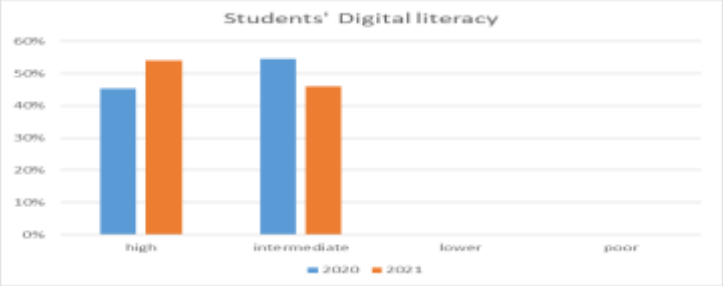

Figure 1.10 Levels of students' digital literacy

Discussion

A prominent theme seen from research findings was digital native students' frequency and attachment to digital aids (Turner, 2015). It relates to the frequency and duration of digital aids use. In research findings, this was proven by the frequency of use of digital devices and the duration of use which are not directly proportional. The fact that some students used digital aids for less than an hour, or that they use it less than 5 times a week does not affect their digital literacy. The interview results also stated that those who used digital aids less than 5 times a week would extend the duration of their use. This supports the notion that the longer a person uses digital tools, the more digital literacy will increase (Luthfia et al., 2021). On the other hand, students who used digital aids for less than an hour tend to use them more often. Thus, their digital literacy skills grew from one or both factors. That the duration that can increase digital literacy is quality of time, not only the amount of time (Juuti et al., 2022). This means that students use digital aids to hone their skills outside the classroom with leisure activities. Meanwhile, learning applications and sites are accessed for assignment purposes or other learning targets. It has a similar effect on students' motivation and comfort in learning as the informal language (Soyoof et al., 2021).

In order to seek comfortable learning, students liked to use platforms that are single-directed. These platforms were useful for giving language exposure in listening activities, but had low impact in improving language skills (Chang et al., 2019). This includes videos like YouTube, Instagram, movies, or on-demand streaming apps. In addition to being entertaining, these platforms were most desirable because students enjoy learning by themselves which improved students' motivation in self-regulated English learning (Yin, 2021). This result also

supports the earlier discussion on single-directed learning apps was most used (Rizkiani, 2015; Yin, 2021). In addition, spoken interactions in English was not performed outside classroom activities. On the contrary, reading for pleasure or extensive reading activities were low signified technology advancement did not do much of increasing reading interest (Alsaeedi et al., 2021).

The result analysis disclosed students' writing exercises was for academic writing for assignments and informal writing. Apps or websites for academic writing were online translation tool (Google Translate) and proofreading including Grammarly, PaperRater, and some paraphrasing tools. These tools functioned as substitute to peer-feedback and correction that helped students increase the quality of the writing composition (Darayani et al., 2015). On the other hand, social media apps (Instagram, Facebook, Twitter, etc.) and weblogs (Tumblr, WordPress, Google Sites) worked as a free writing platform which allowed students to practice writing skills and establish writing habits (Priego et al., 2015). Students need to balance the use of both digital writing aids to achieve higher proficiency in English writing.

High usage frequency of digital collaboration facilities platform did not reflect real collaboration among students. Instead of discussing the matter, there were little desire from the students to learn collaboratively, which was a challenge in digital learning environment (Kaliisa et al., 2022). This was possibly the same reason of lower usage of digital speaking aids which led to lower improvement in speaking skills. It hinders the ideal implementation of the 21st century learning which involves 6C competences (critical thinking, creativity, collaboration, communication, culture/citizenship, and character) which help students become competent language users, critical thinkers, and constructive social change agents (Shabrina & Astuti, 2022). Communication and collaboration in crucial to foster language practice, sharing ideas and constructing knowledge together (Inganah et al., 2023). Therefore, the implication for further practices is to combine 6C competences with digital literacy.

Figure 1.11 6C competencies reflected in EFL students' digital literacy

Students' pattern in online learning activities reflected characteristics of generation-z; they are quickly adapting to changing situations and master new things fast (Ang et al., 2022).This is supported by interview data which states that they are used to using digital aids every day. In addition, some of them have been studying online for 2 years and they improved their English skills well. Apart from that, Generation Z also has characteristics as a visual observer, has limited attention span, is fast-paced, and likes informal class settings (Szymkowiak et al., 2021). Critical thinking was another crucial characteristic of these students (Fedorov & Mikhaleva, 2020). Students must identify the authenticity and correctness of information sources by comparing more than one source. Then manage important information that needs to be conveyed under discussion forums, therefore the students' critical thinking ability is needed (Varenina et al., 2021). They were also wise and careful when interacting in digital forums that was possibly affected by students' psychological state which was practically stable (Pratiwi & Pritanova, 2017),

The weakness of this generation is their focusing on privacies rather than community. For example, securing privacy security on the internet; meaning that they were more aware of safety in community use rather than that in individuals (Atlam & Wills, 2020). Many of them were passive members of discussion or group works, who preferred to listen to discussions to collect information, but are reluctant to interact for fear of sharing wrong information. It often occurred and was experienced more in online class discussions with the instructor which creates feelings of isolation (de Lima et al., 2019) that constrained student's participation and diminished the discussion quality (Abawajy & Kim, 2011). These traits can be upcoming constraints in applying self-regulated learning (Karatas & Arpaci, 2021).

CONCLUSION

Conclusion

EFL UM students' digital literacy skills were proven high especially in superficial aspects such as the use of digital application features. On the contrary, some fundamental aspects were slightly neglected; for example, collaboration/communication, digital safety and culture were not as good as students' literacy in mastering the use of digital aids. This phenomenon causes SRL practice to be less optimal in terms of intrapersonal skills. In other words, the more advanced students are in using digital aids, their attitude tends to be individualistic. It certainly does not support SRL theory which believes an individual must acknowledge the need of social assistance and interactions, even in the digital environment.

This whole research implies students starting from year 2020 have encountered certain challenges in combating negative impacts on digital tools/media, making digital aids as learning assistants, and adapting to the digital interaction in digital learning environment. What we can do as lecturers or instructors is acknowledge that there are always changes of learning environment and students' preferences in learning and interacting, prior to designing classroom materials. At the end of the day, we can always adapt to every changes and challenges to come.

Limitation

This research has potential limitations. Lower scores at some dimensions of digital literacy explicate imbalance implementation of DL in SRL's daily life due to research limitations in taking sampling size and variability. Enriched questionnaire framework model should be redesigned referring to DL in SRL activities. In addition, limited research time caused this research to miss the relationship between DL skills and SRL practice in depth, so that the variables affecting the success of DL in supporting SRL were not identified.

Implication

This study implie that digital literacy and digitalization for self-regulated learning needs more attention in the future. This research possibly inspires other researchers to investigate more about positive and negative impacts of digital aids in self-regulated learning

as well as factors underlying it. It can be a starting point for lecturers to be aware of changes of learning environment, hence they can re-design more active collaborations in classrooms to create effective environment for generation-z students to practice self-regulation.

BIO-PROFILE

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