English teachers' beliefs and practices in integrating digital literacy in the language classroom

Much Deiniatur[1,2], Bambang Yudi Cahyono[1], Francisca Maria Ivone[1], Johannes Ananto Prayogo[1]
[1]Department of English Language, Faculty of Letters, State University of Malang, Malang, Indonesia
[2]Department of English Language Education, Faculty of Tarbiyah, State Islamic Institute of Metro, Lampung, Indonesia

Article Info

ABSTRACT

This case study investigates teachers' beliefs (i.e., behavioral, normative, and control beliefs) and practices in integrating digital literacy in English as foreign language (EFL) classroom. A descriptive study on EFL teachers is used in this research. Four participants were purposively selected to give sufficient information to answer the research questions. Data from the participants were collected by using interviews, observation, and documentation. In terms of the teachers' beliefs, the finding shows that the behavioral belief was related to the benefits of using digital literacy; normative belief dealt with the expectation in the social context of both superiors and peers; while control belief was about the availability of particular digital technology to be implemented in the classroom and the ability of teachers. With regard to the teachers' practices, it was found that the teachers used several digital tools for searching for information, communication, collaboration, creativity, critical thinking, cultural understanding, and e-safety. It was evident that teachers' strong beliefs in integrating digital literacy influence the implementation of digital literacy in the classroom. The findings of this study highlight the importance of cultivating teachers' beliefs toward the actual implementation of the integration of digital literacy in the EFL classroom.

Corresponding Author:

Much Deiniatur
Department of English Language, Faculty of Letters, State University of Malang
Lowokwaru, Malang, East Java 65145, Indonesia
Email: deiniatur@gmail.com

1. INTRODUCTION

Digital literacy is very important for the teaching and learning process in today's digital era. Digital literacy includes a variety of abilities that can be obtained through technology. This phenomenon requires teachers to have the special ability to search, interpret, evaluate, apply, communicate, and produce information from all digital sources [1], [2]. Therefore, the skill that must be mastered in the 21st century is digital literacy [3]–[7]. By having digital literacy, teachers are expected not only to be able to operate digital tools and devices but also to encompass a set of knowledge, skills, and attitudes necessary for functioning in the digital age [8].

Gilster [9] first introduced the term digital literacy in the late 1990s as: "the ability to understand and use information in multiple formats from a wide range of sources when it is presented via computers." Digital literacy encompasses numerous complex cognitive, physical, sociological, and emotional abilities that are necessary for users to effectively participate in digital contexts [1]. Hockly [10] suggested that digital literacy consists of four overlapping skill sets corresponding to four main areas: language, information, connection, and redesign. Additionally, digital literacies are fostered by using or creating multimodal texts that integrate text, images, and audio in varied and flexible ways. Koltay [11] stated that digital literacy refers to the efficient

utilization of information and communication technology (ICT), which focuses on the teachers' use of digital media in the English as foreign language (EFL) teaching and learning process. Furthermore, there are eight dimensions of digital literacy: function skill, creativity, critical thinking, communication, culture, finding information, collaboration, and e-safety [2].

Several studies have also been conducted on digital literacy practices in English language teaching. The studies show the implementation of digital literacy in the teaching-learning process. Teachers in the English program were very confident in using digital technology to support their teaching inside and outside their classrooms [12]. Harris [13] stated that integrating digital literacy activities to promote language learning and digital literacy acquisition could address four aspects: utilizing fundamental digital skills to create and communicate information, identify and evaluate data, and solve problems. Akayoglu et al. [14] found that pre-service teachers' conception of digital literacy includes multiple levels, including knowledge to use, critical, creative, and collaborative use. Rinekso et al. [15] also reported that students conceptualized digital literacy as a soft skill to manage digital information, including searching, understanding, evaluating, creating, and sharing.

Digital literacy is challenging to implement in the classroom. Teachers must incorporate digital literacy into their curriculum, programs, and lessons [13]. Teachers' actions in the classroom are based on their beliefs [16]. Teachers should be aware of their beliefs related to their teaching situation, so it is related to the digitalization that has reshaped the instructional activities in the classroom [17]. Therefore, teachers' ideas towards digital literacy are vital for guiding their instructional practices. Teachers' beliefs serve as the filter for instructional decisions and behaviors, based on their assumptions about educational challenges [18]. Beliefs appear from the perspective that what teachers feel succeeds in making a plan for teaching and learning activities [19]. Beliefs are from the teacher's experience to benefit the teacher in deciding on future activities. Beliefs are also important in preparing the teachers' teaching strategies that influence teachers' well-being, creating a good atmosphere, motivation, and ability [20]. Individual beliefs are crucial to the successful integration of digital literacy in the classroom, influencing teachers' decisions to integrate digital literacy [18], [21]–[23]. Furthermore, Ertmer [24] claimed that teachers' beliefs are the most important element in technology use.

Ajzen [25] promoted the theory of beliefs, namely the theory of planned behavior (TPB). The belief clusters classified into three categories: behavioral, normative, and control. The first belief, behavioral belief, is a person's assumption of a behavior's values (positive behavior). In contrast, normative belief is the assumption that certain individuals, groups, or the environment endorse a particular action. Lastly, control belief relates to an individual's impression of the difficulty or ease of undertaking desirable behaviors. Taylor and Todd [26] developed the TPB into decomposed theory of planned behavior (DTPB). It was developed to define more specific categories of characteristics offered at TPB. The DTPB breaks down behavioral, normative, and control beliefs into smaller categories so they can be studied more thoroughly. The DTPB provides more specific information and interpretations for each category [26]. In DTPB, the factors of attitude, subjective norm, and perceived behavioral control are decomposed into the lower level of belief constructs.

Furthermore, several studies on teachers' beliefs in digital literacy demonstrated that teachers' beliefs influenced their decisions on whether or not to integrate digital literacy [21], [27], [28]. Sadaf and Jhonson [28] used the TPB to analyze in-service teachers' perceptions about integrating digital literacy in an online master's program of curriculum and educational technology. Teachers' integration of digital literacy was related to their behavioral, normative, and control beliefs. However, the findings did not associate with the teachers' practices in integrating digital literacy. Chien et al. [21] investigated the beliefs of high school science teachers about integrating technology. Teachers' beliefs indicated that science teachers' intentions to integrate technology were largely influenced by their belief systems. The findings demonstrated that attitudes about utility, simplicity of use, and compatibility influence human intentions to integrate digital technologies. Bordalba and Bochaca [27] investigated how parents and teachers felt about adopting digital technology to aid education inside and outside the classroom. There was a positive relationship between what teachers believe and what they practice. Teachers used digital tools when it was convenient for them to do so in this way.

Studies related to teachers' beliefs and practices have been extensively conducted. However, there has been limited investigation into teachers' beliefs and practices in integrating digital literacy in EFL classrooms. Although there have been many studies on the practice of digital literacy in EFL classrooms [14], [15], [29]–[31], those that examine beliefs and practices of digital literacy are still rarely carried out. Based on the studies, the issue of EFL teachers' beliefs and practices in integrating digital literacy into the classroom is chosen to fill the gap under the theme. However, there is a dearth of this topic among EFL teachers in the context of higher education in Indonesia, particularly in Lampung. Thus, the aim of this study was to evaluate the beliefs and practices of EFL teachers in integrating digital literacy into the classroom. The present study investigates EFL teachers' beliefs based on the DTPB proposed by Taylor and Todd [26] to examine teachers' beliefs about the teachers' decision to integrate digital literacy and teachers' digital literacy practices based on the digital literacy dimension proposed by Hague and Payton [2]. The research questions are formulated as: i) what are EFL teachers' beliefs in integrating digital literacy into the classrooms; and ii) what are the EFL teachers' practices for integrating digital literacy in the classrooms.

2. RESEARCH METHOD

This study is designed as a case study aimed at examining EFL teachers' beliefs and practices in integrating digital literacy into the classroom at the university level. A case study is a qualitative methodology in which the investigator investigates a case through extensive in-depth data gathering containing numerous sources of information obtained through diverse methods [32]. The subjects of this study are four EFL teachers from three universities in Lampung, Indonesia. The subjects are chosen using a purposive sampling approach. The following are the criteria for selecting informants: i) EFL English teachers with more than five years of experience; ii) incorporating digital literacy and computer proficiency into teaching-learning instruction; and iii) participating in technology or digital literacy-related professional development. The instruments of the study were the semi structured interview, observation, and document analysis. All of these instruments were validated by two experts in ELT. This study employed the steps of data analysis from Miles *et al.* [33] which were carried out in three concurrent flows activity: i) data reduction; ii) data display; and iii) conclusion drawing. For validity, the trustworthiness of the data was obtained by cross-checking the data from three instruments and member checking.

3. RESULTS

3.1. Teachers' beliefs in integrating digital literacy in English as foreign language classrooms

This study investigated the beliefs of four EFL teachers, based on the DTPB. These beliefs include behavioral, normative, and control beliefs. Data was obtained from interviews, observations, and documents.

3.1.1. Behavioral beliefs

Perceived usefulness, ease of use, and compatibility are three factors that can be used to classify the implications of behavioral beliefs. Regarding the perceived usefulness, the participants believed that digital literacy is the ability to use digital technology to leverage sources to learn English, effectively communicate with students, find digital materials, facilitate students' critical thinking, and enhance creativity in teaching. The teachers believe integrating digital literacy in the classroom will enhance students' ability to find, analyze, evaluate, and communicate information. In addition, teachers found that much information was available on the Internet, but not all information was reliable. Comprehensive and diverse information forces teachers to analyze and critically reflect on the information they receive.

> "*Digital literacy is the ability to use information and communication technologies to find, evaluate, create, and communicate information, requiring both cognitive and technical skills.*" (EK)

The teachers believed that the ease of use of digital technology would influence them to integrate digital literacy. The teachers did not find any big problems integrating digital literacy because they were familiar with the digital technology. Teachers believe that the use of digital technology will make it easier for them to support learning activities. In this sense, students have the flexibility to broaden the range of their learning resources.

> "*I think that the media are very familiar to them. So, I thought I did not have any difficulties using these media. So, I choose the simple one that is easy to teach or use in the learning process.*" (NG).

The integration of digital literacy is also compatible with EFL teaching. Therefore, the use of digital technology supports EFL teaching and makes it effective and efficient in teaching EFL. The use of digital technologies during teaching and learning requires teachers to develop such material, having a lot of contact with multimedia materials. In this sense, the teachers provide the students with texts, images, audio, and videos to create a comprehensive understanding of the related materials.

> "*I think using digital technology would help me as a teacher to deliver the material to the students who are in this effectively, especially during this pandemic.*" (SY)

3.1.2. Normative beliefs

All the participants reported that the decision to adopt digital literacy in the classroom was the support of their peers and superiors. Teachers claim that peer help is the motivation to promote digital literacy. In this case, teachers can help each other whenever they encounter obstacles. With different ages and experiences, peer support is needed to achieve learning goals that match current needs.

> "*We are as the lecturer at the university and have a WhatsApp group. So, we commonly share our problems and difficulty in that WhatsApp group and my colleagues will post or will share what they know about the problem and how to solve this.*" (SY)

"My colleagues have given a big support thing in integrating digital literacy. I can get an example of an LMS (learning management system). We are discussing how to use it. It is one of the examples supported by our colleagues." (NG)

All participants agreed that the campus facilities and the support of peers played a crucial role in integrating digital literacy into the EFL course. Support from the campus is obviously crucial for integrating digital literacy into EFL classes. For example, teachers believed that LMS and internet facilities that teachers and students could access were a form of support provided by the campus. The campus also gave training and shared information about the digital updating application. Furthermore, data from interviews show that support from campus principal plays an important role in adopting digital literacy in the classroom.

"Yes, of course, the first time when we get the LMS system, we have instructed by video on YouTube so, between students and lecturers and we can get easier to access the LMS system. And I think that it is one of the knowledge areas here, how to use the LMS as the first one." (NG)

3.1.3. Control beliefs

This study found that control beliefs consist of self-efficacy, resource availability, and technology availability. One of the teachers noted that the students' confidence in utilizing digital technologies had an impact on the degree of integration. The teacher chose the most practical delivery method for his topic because it was more suitable to preparing. In addition, he is more equipped to deal with challenges and impediments that arise during teaching and learning activities.

"Okay, the first thing I need to do is that I have to be familiar with digital technology first. So, if I am not familiar with the apps that I am going to use in my classroom. It will be awkward for me, or it would be unuseful for me, and my students." (SY)

The resource of facilitating condition influenced the teacher to integrate digital literacy into the classroom. All of the participants believe that there is a staff who will help the them if they have some problems related to the use of digital technology. They believed that the campus provides some staff to help the teachers if they have troubles. In addition, the teachers can contact their IT staff on campus.

"We can say that the staff will always help us. When we have a problem, they are, for example, we have a problem to use or to our learning management system. I can invite the staff to help me solve the problem, but this may be especially for LMS." (NG)

Furthermore, technology facilitation conditions are defined as conditions in which technology facilitates integration. In this case, the interview results reveal that the availability of technology, such as device accessibility, connectivity to learning applications, and reliable internet connections, are key components of integrating digital literacy. The teachers believed they could easily integrate digital literacy because of the availability of adequate facilities provided by the campus. Therefore, teachers need digital literacy to best use the campus's digital tools. In line with the availability of complete facilities, teachers also believed that using digital devices in learning gives them more excellent opportunities to integrate digital literacy in the classroom.

"We have very good internet connections. It is free for students and lecturers. For the lecturer, we can use our institutional email and password. That's the first one and also our study program provides us with an LCD projector to help us providing like hybrid learning or Blended learning, they provide us with a system." (SY)

3.2. Digital literacy practices of English as foreign language teachers

This study found that EFL teachers employ digital technology for a wide range of purposes, including functional, creative, critical thinking, cultural understanding, collaboration, communication, and e-safety. Word processing, spreadsheets, online learning management system (LMS), social media, presentation software, and video conference platforms are just a few of the applications utilized to teach functional skills. Additionally, teachers leverage tools such as Microsoft PowerPoint, Prezi, and Canva to aid students in enhancing their creativity. Evaluation and critical thinking are fostered through the use of internet articles and videos. To facilitate cross-cultural understanding, informative websites and digital tools like YouTube are frequently employed. Students are encouraged to engage in discussions about their assignments, projects, and group work through a variety of platforms such as WhatsApp Groups, Zoom, Google Meet, and Google Docs. Furthermore, teachers assist students in locating information from reliable sources and online dictionaries to prevent plagiarism. Turnitin and Mendeley are also utilized to detect and deter instances of plagiarism.

The integration of digital technology in the EFL classroom has brought about new opportunities for language teaching and learning. Digital tools can enhance language teaching by providing students with authentic and interactive opportunities to use English. This, in turn, can promote language learning and development as well as enhance critical thinking skills, creativity, and cultural and social understanding. Digital technology also facilitates collaboration and communication among students. Additionally, it enables teachers to evaluate students' language skills and give immediate feedback, which can help identify areas where improvement is needed. However, it's essential to note that e-safety is a concern when using technology in the EFL classroom; therefore, teachers should teach students about responsible online behavior. A study on EFL teachers' beliefs and practices on integrating digital literacy into classrooms found alignment between beliefs and practices. However, EFL teachers face challenges in integrating digital literacy, including internet connectivity, the ability to use digital technology, and managing students' focus.

Teachers assert that digital technologies offer many benefits, but integrating digital literacy into the classroom can pose some challenges. The primary obstacle, according to teachers, is poor connectivity. While every institution has provided an internet connection for all students and teachers, the level of internet connectivity varies when students are learning from home, as was the case during the pandemic. Additionally, the teachers and students may not have sufficient knowledge of technology, as it is constantly evolving. Teachers need to be able to facilitate their students' understanding of digital technology before instructing them. During online learning, instructors cannot completely monitor what students are doing. Students can get distracted by opening applications or visiting other websites unrelated to the lecture material while using the internet. The proliferation of new social media platforms has made it harder for adolescents and young people to focus. Smartphones, desktops, and laptops offer multiple applications and browsers with several open windows, making it extremely challenging for users to concentrate on a single website or application without becoming distracted by another. The summary of digital literacy practices of EFL teachers can be seen on Table 1.

Table 1. Digital literacy practices of EFL teachers in the classroom

Teacher	Course	Dimension of digital literacy	Activities	Source of technology
FJ	Advance writing	Functional	General activities in teaching	Virtual Class, WhatsApp, Zoom Meeting, Twitter, Instagram, Microsoft Word, Microsoft PowerPoint, and Canva
		Finding information	Facilitating students to find the articles	Trusted website
		Creativity		Canva and Prezi
		Critical thinking		YouTube
		Collaboration	Discussion group	Google docs and Breakout room
		Cultural understanding		YouTube and website
		Communication	Share the information	WhatsApp Group
		E-safety	Facilitating the students to use reference manager and plagiarism checker	Turnitin and Mendeley
SY	Reading for general purpose	Functional	General activities in teaching	Microsoft Word, PowerPoint, Microsoft Excel, Zoom Meeting, and Canva
		Finding information	Facilitating students to find the difficult word	Online dictionary
		Creativity	Facilitating students to make a summary of the reading into an infographic	Canva
		Critical thinking	Facilitating students to analyze text	Internet/website
		Collaboration	Discussion group	Breakout room in zoom
		Cultural understanding	Facilitating students to read the short story	Internet/website
		Communication	Sharing the material and information	WhatsApp group
		E-safety	Credit the author	Plagiarism checker
NG	Paragraph writing	Functional	General activities in teaching	LMS, Google meets, WhatsApp, PowerPoint, and YouTube
		Finding information	Finding the journal articles	Internet/e-journal
		Creativity	Making video presentation	Video Presentation
		Critical thinking	Analyzing the articles	Internet/website
		Collaboration	Discussion group	WhatsApp Group
		Cultural understanding	-	-
		Communication	sharing the digital information	WhatsApp and LMS
		E-safety	Checking the students' assignment	Plagiarism checker/Turnitin.

4. DISCUSSION

Teachers' beliefs about the use of digital literacy can reveal teachers' intentions to adopt or discontinue the integration of digital literacy in education because teacher behavior is influenced by teacher beliefs [34]–[38]. Furthermore, since the decision about students, classroom, and materials to be taught are influenced by the teacher's beliefs [39]; thus, the dedication and decision to integrate digital literacy into the classroom may be influenced by teachers' attitudes about digital literacy. The goal of this study was to evaluate the behavioral, normative, and control views of English teachers towards digital literacy.

Concerning the results of the previous section, the results showed that the teacher had strong beliefs about digital literacy integration, which was reflected in their classroom. In this sense, the way of teaching depends on the teacher's beliefs about the notion of digital literacy and its attached value to performing the behavior in the educational context. The recognition of the valuable aspects of digital literacy was particularly characterized by the notion of value beliefs, including usefulness, easiness, and compatibility to perform a specific behavior [28], [40]–[46].

The finding of the study indicated a positive attitude toward digital literacy as competence to perform digital tools effectively and appropriately based on educational needs. Valuable beliefs involve the perceived significance of specific objectives and opportunities [37]. Teachers' beliefs regarding technology are based on whether or not they think technology can help them achieve their instructional goals [38]. Furthermore, the teacher considered the degree of positivity benefits when deciding to perform a particular action in the classroom. In this sense, the teacher valued digital literacy to address professional needs, such as: facilitating instructional practices and creating customized instructional materials. This result was also similar with the findings of a previous study, which concluded that digital literacy facilitated the teaching and learning process by utilizing digital resources and providing students with abundant access to online learning materials [28]. In addition, digital literacy increases the capacity to assess and validate digital content, which supports people in producing content by incorporating a wide range of old knowledge into relevant novice combinations [1].

Regarding on the perceived usefulness of integrating digital literacy in the classroom, the participants believe that digital literacy is the ability to use digital technology to utilize sources to learn English, effectively communicate with students, find digital materials, facilitate students' critical thinking, and enhance creativity in teaching. In line with Sadaf and Johnson [28], the results showed the potential and opportunities afforded by digital usage become a crucial factor for teachers. In addition, the study found that teachers' beliefs on perceived ease of use mediated how teachers defined the value of digital literacy. The teacher explained that the ease of using digital media facilitated the teaching and learning activities. These happened due to the redundant sources aligned with pedagogical aspects, which are easy to access and implement and simple to perform. Teachers are more likely to use technology due to the ease of use of current tools to facilitate the learning process [38]. The integration of digital literacy is also compatible with EFL teaching. Therefore, the use of digital technology supports EFL teaching and makes it effective and efficient in teaching EFL. This finding coincides with the previous studies which conclude that digital literacy can support EFL teaching [13], [17], [47].

Regarding normative beliefs, two characteristics revealed the influence of support from colleagues and principals on the successful use of digital literacy. This finding is reinforced by a prior study that found that administrators' personal support affected teachers' beliefs [42]. This finding suggested that instructors were integrating digital literacy into the teaching and learning process when their administrators provided support. It is believed that colleagues' support influenced teachers' use of digital literacy, particularly in instances involving rising challenges, by providing discussion and guidance with digital usage. Meanwhile, there was a need for more support from relatives in order to discuss terms of technology strategy solutions [28]. In this sense, teachers use materials, tools, and media when someone is willing to explain the process and offer support when obstacles arise. Elements that influence the teacher's decision-making activities are colleagues, relatives, and the surrounding environment [48]. Teachers' perceptions are influenced by co-workers and school principals' encouragement to incorporate digital literacy into the curriculum. Administrators, including principals, staff and other instructors, have varying levels of support, which is critical to the successful integration of digital literacy. The teachers noted that they integrated digital literacy into the classroom because of the support from institution to perform a particular behavior. In this matter, the teacher stated that the technical support and assistance significantly influenced the successful integration of digital literacy. The teachers who participated in this study explained that there was a community for sharing and communicating the newest pedagogical approach and tools that could be implemented in the classroom. This finding implied that teachers were more likely to integrate digital literacy into teaching and learning practices because of their colleagues' support. Schools and administrators share a vision for technology-enabled learning, teachers tend to adopt the same vision to implement it effectively [28].

Regarding control beliefs, the factor that affected the integration of digital literacy was self-efficacy, the availability of resources, and technology. Self-efficacy means an individual's belief in his/her ability to organize or implement action to produce the desired outcomes [49]. Digital literacy includes competency in finding, processing, producing, and communicating using digital media appropriately. Teachers must be

confidently digital literate to integrate digital literacy in the classroom. Although understanding of technology is necessary, it is insufficient if teachers lack the confidence to use it to support learning [50]. Drawing on the conclusion from the findings about self-efficacy, the teacher indicated having high confidence in integrating digital literacy in the classroom. This positivity influences the novelty of teaching strategies in a digital environment that teachers are ready to implement. Focusing on the teaching process, teachers demonstrate their ability to utilize, implement and manage digital tools to deliver content in class by creating active learning where students engage effectively in overcoming challenges through teamwork or collaboration. In addition, the use of various online applications to support learning activities shows the confidence of teachers to carry out various digital platforms effectively. People with high confidence tend to put more effort and solve problems requiring creative thinking more effectively [51]. Further, a particular attitude's successful performance relates to the teachers' confidence or self-efficacy [52].

Related to the factors that influence teachers' decisions, another dimension that contributed to digital literacy integration was the availability of resources and technology. In this sense, the facilities from institution affected teachers' decisions to integrate digital literacy in teaching, for instance, by organizing workshops or training focused on personalized professional development [53]. Furthermore, the administrators were required to provide easy access to technology and resources, such as computers, LMS, computer labs, and reliable internet connection. In particular, the results indicated a mutual relation between teachers' beliefs and learning practices when the campus context had similar beliefs.

The implication of teachers' beliefs in educational practices showed that positive beliefs were translated using various instructional media. In this sense, the teacher used technology to enact his values and beliefs and feels comfortable using digital literacy. Furthermore, the results of this study indicate that teachers' strong belief in integrating digital literacy is reflected in teaching strategies and learning processes. Teaching strategies are related to instructional decisions about technology supporting learning [54] and transforming learning from a pedagogical perspective [18]. Furthermore, in line with the finding of this study, several practitioners have mentioned the impact of beliefs on the teaching and learning process. Teacher beliefs are an important aspect of the teaching and learning process, such as deciding principles in the classroom [37], influencing instructional decisions [54], shaping classroom practice [21], and facilitating technology integration practices [55]. Despite positive intentions to use digital literacy being significant predictors of teachers' decisions, certain factors often influence the intentions.

In addition, the participants reported having no difficulties with functional skills in digital literacy for English instruction, such as word processing, spreadsheet, presentation, LMS, picture editor, and messaging platforms. Other aspects of digital literacy for English language teaching include collaboration and creativity. Collaborative activity can be done using various online tools. As explained before, online collaboration supports the development of digital literacy [56]. Focusing on creativity, teachers made the digital material creatively [57]. Several studies suggested digital composition, which integrated multimodal forms in writing activities [58], [59]. Finally, the participants used the video-sharing platform to teach culture [60]. It was reported that teachers joined social media, messaging services groups, and YouTube channels [61]–[63]. The digital technologies have become an integral part of our life as part of digital culture [64]. Therefore, digital literacy training is needed to improve teachers' digital literacy [14].

In terms of how participants utilize digital tools, the results correspond to the elements and dimensions of digital literacy [65], [66]. Participants made effective use of digital technologies when participating in activities using digital tool, such as searching, analyzing, comprehending, validating, creating, and sharing. They also utilized digital tools for explicit purposes, such as Canva for creativity, Google Docs for collaboration, WhatsApp for communication, Turnitin for e-safety, Google to find information, and YouTube for learning culture. In terms of the participants' motivations for using digital technologies, this study echoes the findings of prior research, e.g., the use of social media to learn English. In previous studies [62], [67], the use of video for intercultural understanding [60], messenger (WhatsApp) for collaborative learning [68], [69], teleconference apps (Zoom) for language learning [70], [71], and software to avoid plagiarism [72], [73]. There are certain restrictions on how broadly this study's findings can be applied. For instance, this study was highly contextualized and concentrated on a small, homogeneous group of participants. As a result, as in other circumstances, the findings of this study cannot be generalized. Moreover, various people may have different ideas about what digital literacy is. Different digital tools may have different functions and different tool kinds. Depending on the student and the classroom environment, there are several potential difficulties for teachers when integrating digital skills into the classroom.

5.   CONCLUSION

Several studies have demonstrated the positive impact of teachers' beliefs as a result of their significance in determining classroom practice. However, teachers' beliefs about digital literacy are still

limited, especially in the context of teaching English. This study provides a thorough explanation of teacher beliefs: behavioral, normative, and control beliefs regarding the integration of digital literacy in English classroom settings. Teachers promote the development of 21st century skills, such as the ability to communicate properly, think creatively, solve problems intelligently, and develop critical thinking. In addition, the motivation of teachers to integrate digital literacy prepares students for 21st-century skills. However, the normative and control beliefs of teachers suggested that external and internal factors may provide feasibility challenges. This suggests that institutions have a large impact on the likelihood of adopting digital tools in the classroom. External elements, such as access to digital devices, internet connectivity, and learning programs, are the biggest challenges for teachers trying to integrate digital literacy into the classroom. However, the most significant factor is the teacher's ability to effectively utilize resources and media to fulfill teaching-learning objectives. Therefore, this research can provide input to institutions to provide learning technology facilities and continuous professional development for teachers in integrating digital literacy in the classroom.

REFERENCES

[1] Y. Eshet, "Digital literacy: A conceptual framework for survival skills in the digital era," *Journal of Educational Multimedia and Hypermedia*, vol. 13, no. 1, pp. 93–106, 2004.
[2] C. Hague and S. Payton, "Digital literacy across the curriculum," Futurelab, 2010.
[3] A. Klimas and M. Baran-Lucarz, "Developing 21st century skills in a foreign language classroom: EFL student teachers' beliefs and self-awareness," *Academic Journal of Modern Philology*, vol. 10, pp. 23–38, 2020.
[4] H. Bedir, "Pre-service ELT teachers' beliefs and perceptions on 21st century learning and innovation skills (4Cs)," *Dil ve Dilbilimi Çalışmaları Dergisi*, vol. 15, no. 1, pp. 231–246, Apr. 2019, doi: 10.17263/jlls.547718.
[5] L. Byfield, C. Shelby-Caffey, H. Bacon, and X. Shen, "Digital literacy and identity formation in 21st century classrooms: Implications for second language development," *International Journal of Applied Linguistics and English Literature*, vol. 5, no. 1, pp. 39–45, Nov. 2015, doi: 10.7575/aiac.ijalel.v.5n.1p.39.
[6] I. Elola and A. Oskoz, "Writing with 21st century social tools in the L2 classroom: New literacies, genres, and writing practices," *Journal of Second Language Writing*, vol. 36, pp. 52–60, Jun. 2017, doi: 10.1016/j.jslw.2017.04.002.
[7] E. Eryansyah, E. Erlina, F. Fiftinova, and A. Nurweni, "EFL Students' needs of digital literacy to meet the demands of 21stcentury skills," *Indonesian Research Journal in Education (IRJE)*, vol. 3, no. 2, pp. 442–460, 2019.
[8] A. Ferrari, Y. Punie, and C. Redecker, "Understanding digital competence in the 21st century: An analysis of current frameworks," in *EC-TEL 2012: 21st Century Learning for 21st Century Skills*, 2012, pp. 79–92. doi: 10.1007/978-3-642-33263-0_7.
[9] P. Gilster, *Digital literacy*. John Wiley & Sons, Inc., 1997.
[10] N. Hockly, "Digital literacies," *ELT Journal*, vol. 66, no. 1, pp. 108–112, Jan. 2012, doi: 10.1093/elt/ccr077.
[11] T. Koltay, "The media and the literacies: media literacy, information literacy, digital literacy," *Media, Culture & Society*, vol. 33, no. 2, pp. 211–221, Mar. 2011, doi: 10.1177/0163443710393382.
[12] T. Cote and B. Milliner, "A survey of EFL teachers' digital literacy: A report from Japanese University," *Teaching English with Technology*, vol. 18, no. 4, pp. 71–89, 2018.
[13] K. Harris, "Integrating digital literacy into English language instruction: Issue brief," *LINCS Information*, pp. 1–9, 2015.
[14] S. Akayoglu, H. M. Satar, K. Dikilitas, N. C. Cirit, and S. Korkmazgil, "Digital literacy practices of Turkish pre-service EFL teachers," *Australasian Journal of Educational Technology*, vol. 36, no. 1, pp. 85–97, Jan. 2020, doi: 10.14742/ajet.4711.
[15] A. B. Rinekso, R. S. Rodliyah, and I. Pertiwi, "Digital literacy practices in tertiary education: A case of EFL postgraduate students," *Studies in English Language and Education*, vol. 8, no. 2, pp. 622–641, May 2021, doi: 10.24815/siele.v8i2.18863.
[16] M. E. G. Peláez, "English teachers' beliefs about communicative competence and their relationship with their classroom practices," *PROFILE Issues in Teachers Professional Development*, vol 10, pp. 75–89, 2008.
[17] H. Lotherington and J. Jenson, "Teaching multimodal and digital literacy in L2 settings: New literacies, new basics, new pedagogies," *Annual Review of Applied Linguistics*, vol. 31, pp. 226–246, Mar. 2011, doi: 10.1017/S0267190511000110.
[18] T. Levin and R. Wadmany, "Teachers' beliefs and practices in technology-based classrooms," *Journal of Research on Technology in Education*, vol. 39, no. 2, pp. 157–181, Dec. 2006, doi: 10.1080/15391523.2006.10782478.
[19] K. Graves, *Designing language courses: A guide for teachers*. Heinle & Heinle Boston, MA, 2000.
[20] L. Xu, "The role of teachers' beliefs in the language teaching-learning process," *Theory and Practice in Language Studies*, vol. 2, no. 7, pp. 1397–1402, Jul. 2012, doi: 10.4304/tpls.2.7.1397-1402.
[21] S.-P. Chien, H.-K. Wu, and P.-H. Wu, "Teachers' beliefs about, attitudes toward, and intention to use technology-based assessments: a structural equation modeling approach," *EURASIA Journal of Mathematics, Science and Technology Education*, vol. 14, no. 10, p. em1594, Jul. 2018, doi: 10.29333/ejmste/93379.
[22] F. S. Açıkalın, "Teacher beliefs and practice in science education," *Asia-Pacific Forum on Science Learning and Teaching*, vol. 10, no. 1, pp. 1–14, 2009.
[23] M. S. Uztosun, "An interpretive study into elementary school English teachers' beliefs and practices in Turkey," *Turkish Online Journal of Qualitative Inquiry*, vol. 4, no. 1, pp. 20–33, 2013.
[24] P. A. Ertmer, "Teacher pedagogical beliefs: The final frontier in our quest for technology integration?" *Educational Technology Research and Development*, vol. 53, no. 4, pp. 25–39, Dec. 2005, doi: 10.1007/BF02504683.
[25] I. Ajzen, "The theory of planned behavior," *Organizational Behavior and Human Decision Processes*, vol. 50, no. 2, pp. 179–211, Dec. 1991, doi: 10.1016/0749-5978(91)90020-T.
[26] S. Taylor and P. Todd, "Decomposition and crossover effects in the theory of planned behavior: A study of consumer adoption intentions," *International Journal of Research in Marketing*, vol. 12, no. 2, p. 137, 1995, doi: 10.1016/0167-8116(94)00019-K.
[27] M. M. Bordalba and J. G. Bochaca, "Digital media for family-school communication? Parents' and teachers' beliefs," *Computers & Education*, vol. 132, pp. 44–62, Apr. 2019, doi: 10.1016/j.compedu.2019.01.006.
[28] A. Sadaf and B. L. Johnson, "Teachers' beliefs about integrating digital literacy into classroom practice: An investigation based on the theory of planned behavior," *Journal of Digital Learning in Teacher Education*, vol. 33, no. 4, pp. 129–137, Oct. 2017, doi: 10.1080/21532974.2017.1347534.
[29] T. L. Durriyah and M. Zuhdi, "Digital literacy with EFL student teachers: exploring Indonesian student teachers' initial perception about integrating digital technologies into a teaching unit," *International Journal of Education & Literacy Studies*, vol. 6, no. 3,

pp. 53–60, 2018.

[30] N. Kurniawati, E. H. Maolida, and A. G. Anjaniputra, "The praxis of digital literacy in the EFL classroom: Digital-immigrant vs digital-native teacher," *Indonesian Journal of Applied Linguistics*, vol. 8, no. 1, pp. 1–10, May 2018, doi: 10.17509/ijal.v8i1.11459.

[31] U. Soifah, P. Jana, and B. W. Pratolo, "Unlocking digital literacy practices of EFL teachers," *Journal of Physics: Conference Series*, vol. 1823, no. 1, p. 012030, Mar. 2021, doi: 10.1088/1742-6596/1823/1/012030.

[32] J. W. Creswell and C. N. Poth, *Qualitative inquiry and research design: Choosing among five approaches*. SAGE Publications, Inc, 2017.

[33] M. B. Miles, A. M. Huberman, and J. Saldana, "Fundamentals of qualitative data analysis," in *Qualitative Data Analysis: Methods Sourcebook*, SAGE Publications, 2014.

[34] A. Alghamdi, "The impact of EFL teachers' pedagogical beliefs and practices: Communicative language teaching in a Saudi University context," *English Language Teaching*, vol. 14, no. 12, pp. 171–182 Nov. 2021, doi: 10.5539/elt.v14n12p171.

[35] M. Alhamami, "Beliefs about and intention to learn a foreign language in face-to-face and online settings," *Computer Assisted Language Learning*, vol. 31, no. 1–2, pp. 90–113, Jan. 2018, doi: 10.1080/09588221.2017.1387154.

[36] B. Bai and R. Yuan, "EFL teachers' beliefs and practices about pronunciation teaching," *ELT Journal*, vol. 73, no. 2, pp. 134–143, May 2019, doi: 10.1093/elt/ccy040.

[37] S. Borg and Y. Alshumaimeri, "Language learner autonomy in a tertiary context: Teachers' beliefs and practices," *Language Teaching Research*, vol. 23, no. 1, pp. 9–38, Jan. 2019, doi: 10.1177/1362168817725759.

[38] P. A. Ertmer, A. Ottenbreit-Leftwich, and J. Tondeur, "Teachers' beliefs and uses of technology to support 21st-century teaching and learning," in *International Handbook of Research on Teachers' Beliefs*, Routledge, 2014, pp. 415–430. doi: 10.4324/9780203108437-33.

[39] D. M. Kagan, "Professional growth among preservice and beginning teachers," *Review of Educational Research*, vol. 62, no. 2, pp. 129–169, Jun. 1992, doi: 10.3102/00346543062002129.

[40] M. Aboelmaged and T. R. Gebba, "Mobile banking adoption: An examination of technology acceptance model and theory of planned behavior," *International Journal of Business Research and Development*, vol. 2, no. 1, Mar. 2013, doi: 10.24102/ijbrd.v2i1.263.

[41] B. A. Jnr *et al.*, "Predictors of blended learning deployment in institutions of higher learning: theory of planned behavior perspective," *The International Journal of Information and Learning Technology*, vol. 37, no. 4, pp. 179–196, Sep. 2020, doi: 10.1108/IJILT-02-2020-0013.

[42] K. Atsoglou and A. Jimoyiannis, "Teachers' decisions to use ICT in classroom practice: An investigation based on decomposed theory of planned behavior," *International Journal of Digital Literacy and Digital Competence*, vol. 3, no. 2, pp. 20–37, Apr. 2012, doi: 10.4018/jdldc.2012040102.

[43] C.-L. Chen and C.-C. Wu, "Students' behavioral intention to use and achievements in ICT-Integrated mathematics remedial instruction: Case study of a calculus course," *Computers & Education*, vol. 145, p. 103740, Feb. 2020, doi: 10.1016/j.compedu.2019.103740.

[44] T.-H. Chu and Y.-Y. Chen, "With good we become good: Understanding e-learning adoption by theory of planned behavior and group influences," *Computers & Education*, vol. 92–93, pp. 37–52, Jan. 2016, doi: 10.1016/j.compedu.2015.09.013.

[45] J. Nie, C. Zheng, P. Zeng, B. Zhou, L. Lei, and P. Wang, "Using the theory of planned behavior and the role of social image to understand mobile English learning check-in behavior," *Computers & Education*, vol. 156, p. 103942, Oct. 2020, doi: 10.1016/j.compedu.2020.103942.

[46] A. Sadaf and T. Gezer, "Exploring factors that influence teachers' intentions to integrate digital literacy using the decomposed theory of planned behavior," *Journal of Digital Learning in Teacher Education*, vol. 36, no. 2, pp. 124–145, Apr. 2020, doi: 10.1080/21532974.2020.1719244.

[47] E. Tour, "Teaching digital literacies in EAL/ESL classrooms: Practical strategies," *TESOL Journal*, vol. 11, no. 1, p. e00458, Mar. 2020, doi: 10.1002/tesj.458.

[48] S. Borg, "Teacher cognition in language teaching: A review of research on what language teachers think, know, believe, and do," *Language Teaching*, vol. 36, no. 2, pp. 81–109, Apr. 2003, doi: 10.1017/S0261444803001903.

[49] R. N. F. Jiwa, A. Tanduklangi, and Z. Sailan, "Cognitive style, attitude, and self efficacy as predictors of student success in EFL online courses at Halu Oleo University," *Journal of Language Education and Educational Technology*, vol. 2, no. 2, pp. 16–32 2017.

[50] B. Waluyo and A. Apridayani, "Teachers' beliefs and classroom practices on the use of video in English language teaching," *Studies in English Language and Education*, vol. 8, no. 2, pp. 726–744, May 2021, doi: 10.24815/siele.v8i2.19214.

[51] D. Alt and N. Raichel, "Enhancing perceived digital literacy skills and creative self-concept through gamified learning environments: Insights from a longitudinal study," *International Journal of Educational Research*, vol. 101, p. 101561, 2020, doi: 10.1016/j.ijer.2020.101561.

[52] M. Lailiyah and B. Y. Cahyono, "Indonesian EFL teachers' self-efficacy towards technology integration (SETI) and their use of technology in EFL teaching," *Studies in English Language Teaching*, vol. 5, no. 2, pp. 344–357, May 2017, doi: 10.22158/selt.v5n2p344.

[53] A. Sadaf, "Exploring teachers' value beliefs of integrating digital literacy in K-12 classrooms," *International Journal of Digital Literacy and Digital Competence*, vol. 10, no. 2, pp. 1–14, Apr. 2019, doi: 10.4018/IJDLDC.2019040101.

[54] N. O. Argawati and L. Suryani, "Digital-based instruction: Chances and challenges in English language teaching context," *International Journal of Evaluation and Research in Education (IJERE)*, vol. 9, no. 4, pp. 1138–1144, Dec. 2020, doi: 10.11591/ijere.v9i4.20579.

[55] J. S. Barrot, "Integrating technology into ESL/EFL writing through Grammarly," *RELC Journal*, vol. 53, no. 3, pp. 764–768, Dec. 2022, doi: 10.1177/0033688220966632.

[56] J. FU and J. Pow, "Fostering digital literacy through web-based collaborative inquiry learning–a case study," *Journal of Information Technology Education: Innovations in Practice*, vol. 10, pp. 57–71, 2011, doi: 10.28945/1383.

[57] A. Creer, "Introducing everyday digital literacy practices into the classroom: An analysis of multi-layered media, modes and their affordances," *Journal of New Approaches in Educational Research*, vol. 7, no. 2, pp. 131–139, Jul. 2018, doi: 10.7821/naer.2018.7.265.

[58] S. J. C. Lee and S. N. A. Rabu, "Google docs for higher education: Evaluating online interaction and reflective writing using content analysis approach," *Education and Information Technologies*, vol. 27, no. 3, pp. 3651–3681, Apr. 2022, doi: 10.1007/s10639-021-10760-4.

[59] S. Nabhan and H. Sa'diyah, "Collaborative writing using google docs in an EFL classroom: Voices from high school students," *VELES Voices of English Language Education Society*, vol. 5, no. 2, pp. 156–166, Oct. 2021, doi: 10.29408/veles.v5i2.3863.

[60] S.-H. Yang and H.-C. Yeh, "Enhancing EFL learners' intracultural development as cultural communicators through YouTube video-making," *Technology, Pedagogy and Education*, vol. 30, no. 4, pp. 557–572, Aug. 2021, doi: 10.1080/1475939X.2021.1925336.

[61] S. Balbay and S. Kilis, "Students' perceptions of the use of a YouTube channel specifically designed for an academic speaking skills course," *Eurasian Journal of Applied Linguistics*, vol. 3, no. 2, pp. 235–251, Sep. 2017, doi: 10.32601/ejal.461003.

[62] M. A. Desta, M. B. Workie, D. Bayable, C. Y. Denku, and M. S. Berhanu, "Social media usage in improving English language proficiency from the viewpoint of medical students," *Advances in Medical Education and Practice*, vol. 12, pp. 519–528, May 2021, doi: 10.2147/AMEP.S310181.

[63] A. H. D. Al-Madhkoori, Z. Ghabanchi, and B. Ghonsooly, "Integrating social media applications into EFL students' classrooms: Iraqi EFL teachers' perceptions," *International Journal of Language Studies*, vol. 16, no. 1, pp. 89–114, 2022.

[64] A. C. Borthwick and R. Hansen, "Digital literacy in teacher education: Are teacher educators competent?" *Journal of Digital Learning in Teacher Education*, vol. 33, no. 2, pp. 46–48, Apr. 2017, doi: 10.1080/21532974.2017.1291249.

[65] M. R. Lea and S. Jones, "Digital literacies in higher education: exploring textual and technological practice," *Studies in Higher Education*, vol. 36, no. 4, pp. 377–393, Jun. 2011, doi: 10.1080/03075071003664021.

[66] J. Reyna, J. Hanham, and P. C. Meier, "A framework for digital media literacies for teaching and learning in higher education," *E-Learning and Digital Media*, vol. 15, no. 4, pp. 176–190, Jul. 2018, doi: 10.1177/2042753018784952.

[67] D. Bailey and N. M. Almusharraf, "Facebook in class: The instructor's influence on engagement and language play in online social media forums," *CALL-EJ*, vol. 22, no. 3, pp. 66–85, 2021.

[68] M. Farahian and F. Parhamnia, "Knowledge sharing through WhatsApp: does it promote EFL teachers' reflective practice?" *Journal of Applied Research in Higher Education*, vol. 14, no. 1, pp. 332–346, Jan. 2022, doi: 10.1108/JARHE-12-2020-0456.

[69] A. García-Gómez, "Learning through WhatsApp: students' beliefs, L2 pragmatic development and interpersonal relationships," *Computer Assisted Language Learning*, vol. 35, no. 5–6, pp. 1310–1328, Jul. 2022, doi: 10.1080/09588221.2020.1799822.

[70] A. Cheung, "Language teaching during a pandemic: A case study of zoom use by a secondary ESL teacher in Hong Kong," *RELC Journal*, vol. 54, no. 1, pp. 55–70, Apr. 2023, doi: 10.1177/0033688220981784.

[71] L. Kohnke and B. L. Moorhouse, "Facilitating synchronous online language learning through zoom," *RELC Journal*, vol. 53, no. 1, pp. 296–301, Apr. 2022, doi: 10.1177/0033688220937235.

[72] A. M. Fazilatfar, S. E. Elhambakhsh, and H. Allami, "An investigation of the effects of citation instruction to avoid plagiarism in EFL academic writing assignments," *SAGE Open*, vol. 8, no. 2, pp. 1–13, Apr. 2018, doi: 10.1177/2158244018769958.

[73] H.-F. Shang, "An investigation of plagiarism software use and awareness training on English as a foreign language (EFL) students," *Journal of Computing in Higher Education*, vol. 31, no. 1, pp. 105–120, Apr. 2019, doi: 10.1007/s12528-018-9193-1.

BIOGRAPHIES OF AUTHORS

Much Deiniatur 🆔 ⊗ sc ◐ is a lecturer at Institut Agama Islam Negeri Metro, Lampung. He is a doctoral student in the English Language Department of Universitas Negeri Malang. His research interest is ICT in ELT. He can be contacted at email: deiniatur@gmail.com.

Bambang Yudi Cahyono 🆔 ⊗ sc ◐ is a Professor in Applied Linguistics at Universitas Negeri Malang, East Java, Indonesia. He earned his M.Pd (Magister in Education) from "IKIP Malang" Institute of Teacher Training and Education, Malang, Indonesia, M.A. from Concordia University, Montreal, Canada and Ph.D. from the University of Melbourne, Australia. His research interest includes second language writing, English teacher professional development, and ICT in ELT. He can be contacted at email: bambang.yudi.fs@um.ac.id.

Francisca Maria Ivone 🆔 ⊗ sc ◐ is currently teaches at the Department of English, Universitas Negeri Malang in Indonesia. She has a Bachelor of Education from IKIP Malang, Indonesia, and a Master of Arts and Doctor of Philosophy in Applied Linguistics from The University of Queensland, Brisbane, Australia. She researches and publishes in the area of ELT, TELL, CALL, Extensive Listening and Viewing (EL/V), Extensive Reading (ER), learning autonomy, and collaborative learning. She is passionate about the use of technology in language teaching and learning. She also gives training to pre-service and in-service teachers on the use of technology in language teaching and learning, ER, and EL/V. She can be contacted at email: francisca.maria.fs@um.ac.id.

Johannes Ananto Prayogo 🆔 ⊗ sc ◐ is a lecturer at Universitas Negeri Malang. In 1986, he earned his Bachelor's degree with honors from IKIP Malang, Indonesia. Later, he pursued his academic aspirations and obtained two master's degrees, one from IKIP Malang, Indonesia, and the other from the University of Houston, USA. In 2013, he received his Ph.D. from Universitas Negeri Malang, Indonesia. Apart from teaching, he has also been involved in various research projects. His research primarily focuses on linguistics and poetry, which are also his interests. He can be contacted at email: johannes.ananto.fs@um.ac.id or johannes_songky@yahoo.co.id.