

AI: FRIEND OR FOE? DIGITAL LITERACY TRANSFORMATION FOR ENGLISH LEARNING AUTONOMY IN INDONESIA

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Abstract

The growing popularity of AI, facilitated by digital technology, provides enormous possibilities for transforming English teaching techniques for teachers inside and outside the classroom. AI promotes the integration of traditional teaching methods with digital technology-based instruction, leading to greater enthusiasm among students in learning English. Online learning remains the essence of learning as a platform for sharing information and transmitting humanistic values; more importantly, it is defined as a place to transform knowledge completely. This study aimed to examine the proficiency and obstacles to acquiring ICT literacy skills and English learning autonomy for secondary school pupils in Indonesia. A survey was undertaken with 574 secondary school students in Ruteng City, Indonesia. The data was gathered through the use of questionnaires and interviews and subsequently examined using both quantitative and qualitative methods of analysis. The study findings indicate that respondents possess a moderate degree of ICT proficiency. Twenty statements were utilized to assess the ability of ICT literacy, whereas ten questions were employed to gauge English learning autonomy. The respondents' knowledge of ICT satisfaction was hindered by six factors: lack of enthusiasm and ownership in digital media knowledge, absence of affordability for internet data assistance, lack of funds to utilize specific English-language apps, untrustworthy internet connection, and inadequate ICT infrastructure at schools. Several barriers hinder respondents from achieving ICT literacy. Schools should overcome these hurdles and transform challenges into opportunities to enhance students' English learning and academic achievement.

Keywords: Challenges, English Language, ICT Transformation, Learning Opportunity.



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INTRODUCTION

In today's world, having a deep understanding of digital technology is fundamental. Digital literacy is a skill that anybody may acquire, as it impacts every human being, including students at all stages of education. With the rapid progress of digital technology, educational actors must adjust to

different preferences for learning, including finishing homework, forming digital enterprises, and securing or obtaining digital-based employment prospects. Hence, all people must acquire an advanced set of digital skills to optimize their work performance to the greatest potential. Mastery of digital literacy is vital for developing English language abilities, especially in speaking, learning new vocabulary, and articulation correctness. Gaining proficiency in digital literacy within this context helps enhance, simplify, and improve language mastery. Information and communication technology (ICT) literacy, media literacy, and information literacy are all parts of digital literacy skills (Trilling & Fadel, 2009; Park et al., 2021; Subandiyah et al., 2025).

Students should have a comprehensive understanding of these three forms of literacy. This article only explores the level of ICT literacy in the context of English learning as a consequence of the limited availability of researchers' resources. Nowadays, instructors and students are confronted with the obstacles presented by innovation in digital technology. The transformation carries significant repercussions and requires immediate attention. Information and Communication Technology (ICT) advancements consistently change how people engage in learning activities. Therefore, it is necessary to utilize ICT advancements to enhance the learning of languages (Hafifah & Sulisty, 2020; Kanchai, 2021). ICT abilities are necessary in all sectors of life. Therefore, technology should inspire students to learn, acquire, and utilize ICT skills to accomplish meaningful tasks. ICT-based work offers students an opportunity for future careers. Information and communication technology (ICT) literacy is essential for all employees, as stated by (Suherman et al., 2020; Hussaini et al., 2023). These researchers affirmed that digital technology has revolutionized several aspects of life, including pupils' education. Therefore, every school must immediately provide the requisite information technology resources to implement ICT-based learning. Utilizing technology for learning can revolutionize teachers' roles by allowing students to participate in deeper and more meaningful learning experiences at their own pace. Every school in Indonesia remains at the leading edge of the trend by instructing pupils in using digital technology and creating IT-savvy outcomes. Individuals with advanced information and communication technology skills are more likely to exhibit proactive behavior, engage in logical thinking, demonstrate critical analysis, and engage in self-directed learning (Istifci & Goksel, 2022; Arion et al., 2024).

To enhance their academic achievements, it is suggested that all students responsibly use information and communications technology. Technology-based learning can enhance language learning, evaluation, and maximum outcomes (Kanchai, 2021; Li, 2022). The Indonesian government has approved video conferencing, online books, Moodle learning management systems, YouTube, Webex, Zoom, and other digital-based learning media for usage in official educational institutions. As a further advantage, these digital media offer more flexibility in learning choices (time and place), which are also attractive, accessible, cheaper, and more technologically literate (Shokeen et al., 2022; Watsemba et al., 2024).

In an ICT-based educational setting, students take center stage, are valued as knowledge and data sources, learning is made more accessible, students are supported in autonomy, and their digital abilities are strengthened (Tekedere & Göker, 2023). Thus, it is highly encouraged to engage in English learning that is centered on digital platforms. It allows students to gain proficiency in multiple languages, adapt to different learning styles, and meet the demands of developing information and communication technology skills and responsibilities while studying independently (Hübner et al., 2023).

Prior research has shown that students who possess advanced skills in information and communication technology exhibit accelerated language acquisition, increased engagement in educational activities, greater openness to diverse learning methods, and a stronger motivation to improve their digital abilities (Chen, 2020; Yu & Hu, 2022; Lu & Khan, 2024). Developing cognitive abilities such as analytical thinking, critical thinking, and English skills may be more readily available to students with a strong understanding of information and communications technology (Enayati & Gilakjani, 2020). Those previous researchers did not conduct extensive studies on the competence of information and communication technologies (ICT) and the obstacles that secondary school students face in rural parts of Indonesia in achieving English learning autonomy. The researcher of this current study sets out to fill in the gaps in his expertise. That is why the researcher has chosen to carry out this particular research.

Technological competence and obstacles research has prospered in language classroom instruction. Prior studies have generated relevant findings on this subject, which are as follows: Proficiency in information and communication technologies empowers learners to become active and innovative English language learners (Kanchai, 2021; Salem, 2022; Zuhri et al., 2024). This research, however, stands out and is different from previous studies as it specifically examines the barriers to developing information and communication technology (ICT) skills. It also explores how these barriers

affect the opportunities for high school students living in remote areas to learn English independently. Acquiring ICT knowledge can transform students' cognitive processes and enhance their capacities to accomplish their desired outcomes in the classroom. Proficiently utilizing technology for learning may greatly benefit students living in remote areas by enhancing their motivation and confidence while providing them greater autonomy in their learning process and applying acquired knowledge in the English language (Tanti et al., 2020; Arion et al., 2024).

The research focused on certain topics to promote the gathering of empirical data on the process of learning the English language independently in six high schools in Ruteng City, Indonesia. The researcher has proposed the following research questions, which are based on the rationales and evidence that have been previously revealed:

1. To what extent are students' ICT abilities?
2. What obstacles did students encounter in learning English and achieving ICT skills?

LITERATURE REVIEW

ICT Literacy in English Acquisition

Literacy is the ability to comprehend and understand any meaning, whether it is related to literacy or not. Literacy encompasses a range of areas, such as financial literacy, business, health, environmental literacy, conservation, civic literacy, and many more. Literacy has also developed in the domain of information and communication technologies. Literacy extends beyond simply being able to read and write. It involves developing the capacity of the intellect, tapping into one's associated capacity, and effectively dealing with the obstacles faced in regular life. English learners must exhibit literacy skills since it directly affects their ability to learn English. Literacy's advantages include expanding one's vocabulary, intellectual capacity, perspective, capacity for analysis, and exposure to varied ideas. These benefits collectively aid in addressing various learning challenges every single day (Tanti et al., 2021).

Students should maximize their current English learning capabilities. Students are encouraged to utilize diverse apps to manifest their information and communication technology literacy, facilitated by Artificial Intelligence (AI). The application of AI significantly influences students' cognitive processes and productivity in the contemporary period. This notion is because many sectors rely heavily on applications for optimal outcomes (Almutairi et al., 2020; Tanti et al., 2021; Kurniawan et al., 2022; Ho & Nguyen, 2024). These experts argue that all relevant applications facilitated by AI have the potential to save time and costs. Furthermore, jobs that do not use information and communication technology or the integration of AI will soon grow outdated and gradually fall behind. The argument arises from the inevitable shift towards computerized jobs. When people can utilize digital devices that are consistently connected to the internet to complete tasks, understand, evaluate, and disseminate information, they are regarded as digitally literate (Moreno-Guerrero et al., 2020; Ko et al., 2021; Tanti et al., 2025).

Regarding the acquisition of English, being digitally literate means creating several forms of linguistic substance, such as written content, visuals, interactive exercises, and many more. Information and communication technology literacy helps students and instructors comprehend how digital applications may improve educational experiences for learners. It is necessary to acquire this skill to acquire the English language in the students' way (Hafifah & Sulisty, 2020; Zuhri et al., 2024). This knowledge has an impact on the ability of educators to incorporate instructional technology into their work easily. Learning will be better organized as a consequence. In the modern era, students must possess ICT literacy as these skills are essential at all educational levels, including studying English. English teachers ought to recognize the importance of Information and Communication Technology (ICT), as many English learning resources have been digitized recently.

The Integration of Artificial Intelligence in English Learning Autonomy

The rate at which our technology is advancing beyond our level of knowledge. Despite the long-standing presence of artificial intelligence (AI) in our lives, AI-mediated technology in teaching and learning has seen a notable rise. This idea is especially true in the context of developing students' English skills, as it helps them address challenging English tasks (Liu & Kong, 2021; Peña-Acuña & Crismán-Pérez, 2022). Artificial intelligence is the concept of robots being capable of doing jobs similar to those done by human beings, acquiring knowledge through experience, and adapting to new data (Sharadgah & Sa'di, 2022; Liu et al., 2023). Technological development may lead to creative teaching and learning opportunities for educators and students in areas related to assessment, mentoring, development of curriculum, and feedback. An increasingly prevalent trend in English language instruction is the

utilization of artificial intelligence-driven technology to enhance both English skills and English components (Sumakul et al., 2022; Madhavi et al., 2023). In this case, artificial intelligence-based technology, sometimes known as applications or tools (e.g., QuillBot as a tool for paraphrasing in writing, ChatGPT, Grammarly, Turnitin as a tool for similarity checking, and many more), is used to aid students in English learning activities.

Digital technology facilitates collaboration and discussion between educators and students during face-to-face interactions in the classroom and outside the classroom through online platforms. Embracing digital technology enables instructors and students to collaborate and discuss, both in person inside the classroom and virtually via online platforms. Knowledge can be expanded, ideas can be exchanged, and active involvement may be enabled through online discussions, which do not have time constraints (Katsarou et al., 2023; Mahmud, 2023). This is because traditional educational materials are now a common means of acquiring information literacy during the learning process. Students can use digital technology to access various educational materials, such as e-books, online journals, instructional videos, and other e-learning platforms (Chen, 2020; Chekhratova et al., 2022). In addition, digital technology allows students to engage in online debates, cooperate on projects, and exchange ideas with peers and instructors worldwide. Digital technology enables the acquisition and enhancement of digital skills, including digital information management, use of digital technologies, and comprehension of online principles.

Utilizing AI-mediated applications can reveal pupils' capacity for analytical thinking. By utilizing appropriate English learning applications, students are motivated to scrutinize, assess, and comprehend material within the structure of the actual reality. The process stimulates people to critically analyze, devise solutions for problems, and make well-informed choices by considering their observations and interactions inside the digital realm. Trait thinking encompasses the use of efficient planning, the implementation of appropriate reasoning techniques, the practice of self-monitoring to assess comprehension and learning advancement, continuous endeavors to overcome challenges, and the cultivation of students' confidence in their abilities (Delgado et al., 2020; Lee et al., 2023). All of these variables significantly impact learners' frame of mind, which in turn contributes to their academic success.

English language skills and language components help students meet the English fluency criterion. Students must demonstrate app or digital tool proficiency to be termed ICT-savvy. English language acquisition improves with ICT literacy. Indonesian high school students use digital multimedia instead of printed books during the COVID-19 era (Amri et al., 2020). The mastery of Information and Communication Technology (ICT) has immensely affected how technology is used for language learning and how students study English. Students who are proficient in using computers and other technological devices, as well as a wide range of software applications, can enhance their English skills through regular practice and commitment (Wang, 2021; Hang et al., 2024). Students are urged to study English to grasp instructional programs better when computer instructions are provided in English. Learners quickly understand complex words. This strategy aims to improve students' reading and writing by changing their English study habits, and students' English skills will improve as they learn how to use computers.

By utilizing or developing apps for learning, pupils proficient in information and communication technology are motivated to become independent, forward-thinking, and innovative. Autonomous English language learners assist others in their study. Students are driven to achieve their objectives when they participate in autonomous learning, which combines learning skills with responsibility to make learning more engaging, enjoyable, and worthwhile (Hawkins, 2018; Menggo et al., 2022). Students can enhance their acquisition of knowledge and get excellent results by utilizing their available resources and adhering to their intrinsic want to achieve. To guarantee students can assess their progress, continue their motivation to study, and assume full responsibility for what they learn, it is fundamental that every course of study integrates the concept of learning autonomy (Mostafa et al., 2019). Web-based English language applications enable instructors to prioritize student autonomy. In the same way that in the study, offering students a wider range of learning modalities enhances their IT and language skills.

RESEARCH METHOD

A cross-sectional survey was used for this study. Six secondary schools in Ruteng City, Indonesia, conducted it in June - July 2023. This design aims to identify the educational gaps. The researcher adopted this survey method to examine information and communication technology competency and English learning barriers at six secondary schools in Ruteng, Indonesia. The study included 14.724 students as a population, whereas the sample consisted of 574 students who were selected

using Multistage Cluster Random Sampling. The sample was taken from six secondary schools in Ruteng, as presented in Table 1.

Table 1. Sample Total

No	School	Sex		Sample Numbers
		Female	Male	
1	SMAN 1 Langke Rembong	62	30	92
2	SMAN 2 Langke Rembong	66	28	94
3	SMA Setia Bakti Ruteng	76	25	101
4	SMAK Fransiskus Xaverius Ruteng	55	42	97
5	SMA Karya Ruteng	54	38	92
6	SMAK Aquinas Ruteng	63	35	98
Total				574

Source: Researchers' Data

Data were collected through questionnaires and interviews. The questionnaire offers numerous statements that assess the ICT proficiency of respondents. These statements are based on the ICT literacy theory proposed by Trilling and Fadel (2009). Meanwhile, some claims concerning self-directed English learning were adapted from ideas developed by (Zimmerman, 2002). Twenty questions addressed English learning information and communication technology literacy problems and abilities. Closed-ended questions required respondents to choose one of five answers provided. Three rounds of review by experts were conducted before the questionnaire was sent to respondents. Each item was assessed for relevance to content validity.

Moreover, The research data encompassed several procedures: (1) the researcher formulated a questionnaire to assess ICT skills, challenges in achieving ICT competence, and respondents' autonomy in learning English, based on relevant expert concepts; (2) hearing from experts to validate the questionnaire statements; (3) development of interview guidelines to verify the questionnaire findings; (4) communication with six school principals for data collection; (5) collaboration with English teachers to distribute questionnaires to respondents at each research site; (6) interviewing respondent representatives after analyzing questionnaire results concerning ICT skill levels as well as related challenges; (7) coding respondents' identities; and (8) drawing conclusions regarding respondents' ICT competency levels and their English study routines. Four different categories can be utilized: high ranges from 4,2 to 5,0, medium ranges from 3,2 to 4,1, low ranges from 2,2 to 3,1, and extremely low ranges from 1,1 to 2,1. To get at the percentage, numerical processes were utilized, and the survey findings served as the foundation for the calculation. The Excel chart data series tool was applied to analyze the percentage, and the findings were then presented for qualitative analysis.

RESULTS AND DISCUSSION

This section mostly focuses on the findings of the respondents' information and communication technology abilities and their challenges. The focuses are in line with the two research questions presented in the introduction section, namely (1) to what extent are students' ICT abilities? and (2) what obstacles did students encounter in learning English and achieving ICT skills? The findings for these two research questions are summarized in the form of tables and diagrams. Table 2 presents a concise overview of the respondents' ICT literacy skills (R.Q 1) meanwhile Diagram 1 summarizes the students' obstacles encountered in learning English and achieving ICT skills (R.Q 2).

Table 2. Respondent's ICT Literacy Skill

No	Item	Mean
1	Understand how to use Graphical programs for English learning	2.6
2	Understand how to use software apps for English text analysis	2.5
3	Understand how to use Google Voice programs in practicing English pronunciation	3.7
4	Understand how to use the Blog in English learning	3.8
5	Understand how to use computer games	3.7
6	Understand how to use an electronic dictionary to interpret English tasks	4.4
7	Understand how to use Skype application in English learning	2.7

No	Item	Mean
8	Understand how to use Dropbox apps	2.5
9	Understand how to work with Photo-sharing programs in English learning	4.6
10	Be able to learn English via YouTube	4.3
11	Having the ability to work with the Google Classroom in English learning	3.4
12	Be able to learn English via Google Classroom	2.8
13	Be able to learn English via the Ruang Guru apps	3.2
14	Be able to learn English via Edmodo apps	2.6
15	Be able to learn English through WhatsApp video call group	4.4
16	Be able to learn English through Zoom	4.6
17	Be able to learn English via Duolingo apps	3.2
18	Be able to learn English through the Kahoot apps	3.1
19	Be able to learn English by using CanvaAI apps	2.8
20	Be able to learn English via ChatGPT apps	2.8
Average		3.4

Source: Researchers' Data

Statements 1–20 in Table 2 above show the degree of ICT literacy acquired by 574 respondents. The average score for the 574 respondents' ICT skills was 3.4, putting them in the Medium ability level. The study also found that respondents had medium ICT literacy due to several variables, including not having access to digital media computers, poor internet connectivity, not having enough time to use certain apps in English lessons, paying a lot for internet data packages, ICT infrastructure limited, and lacking enthusiasm for learning or creativity. This research focuses on the six requirements secondary school pupils must satisfy to be IT literate despite numerous obstacles. The researchers rated these six limiting issues using Guttman scales, which permitted only yes/no responses (Bungin, 2005). Table 2 below explains the typical percentage of questions about the six limitation factors.

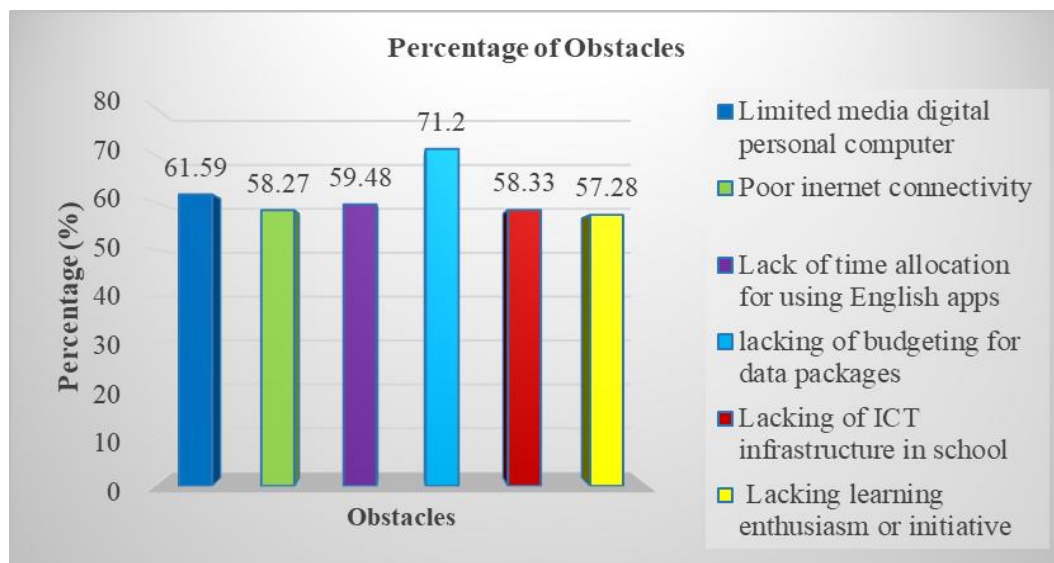


Diagram 1. ICT barriers (Source: Researchers' data)

The respondents possess moderate competence in information and communication technology (ICT), as seen in Table 2. The cost of getting data packages on the internet corresponded to 71.20% of the total, making it the largest factor. Moreover, limited media, such as digital personal computers, which accounted for 61.59%, was the second problem. The research findings indicate that factors impede learning and restrict the advancement of students' English proficiency and their ability to adjust how they learn, making it more challenging to attain a moderate degree of information and communication technology literacy. Suppose students possess proficiency in information and communication technologies. In that case, it presents an optimal opportunity for them to autonomously explore and acquire English language skills according to their preferences and style (Bilotserkovets et al., 2021).

The student's English comprehension degree and ability to effectively employ and understand information and communication technologies are determining factors. In current education, students are expected to automatically possess digital information and communication technology literacy to learn English language skills (Cao et al., 2023; Meniado, 2023). It is expected that learners would comprehend the performance of different learning applications on their computer hardware. To comprehend the many aspects and potential of modern information and communication technology (ICT) devices, students must possess an excellent command of the English language. Proficiency in English vocabulary is essential for students to effectively operate the information and communication technology (ICT) tools they utilize daily (Rusdiyah et al., 2020; Symonenko et al., 2021). Consequently, the level of ICT literacy directly impacts their language abilities. Students with a weak comprehension of information and communication technology (ICT) require assistance comprehending English.

The student's ability to understand and utilize basic aspects of the English language, such as listening, speaking, writing, grammar, and vocabulary, is directly impacted by their proficiency in information and communication technology and the corresponding skills required to operate it (Symonenko et al., 2021; Menggo, 2024). Proficiency in information and communication technologies enables English learners to effectively assess their abilities and shortcomings in many language skills, such as listening, speaking, reading, writing, pronunciation, grammar, and vocabulary. Furthermore, Symonenko et al., (2021) stated that proficiency in information and communication technology (ICT) motivates learners to assess their progress in English language skills.

Increasing proficiency in ICT has a favorable effect on several aspects, including the ability to study and evaluate oneself independently and fostering creativity and innovation abilities to help students quickly acquire necessary competencies. This idea is because students' attitudes towards learning are evolving due to this advancement. Regular alterations in learning patterns might help overcome various hurdles in achieving sufficient information and communication technology literacy. As a consequence of the increasing need for advanced use of information and communication technology in the classroom, students can promptly demonstrate creative solutions to different English learning obstacles (Karunanayaka & Weerakoon, 2020; Salem, 2022). By taking the initiative and demonstrating enthusiasm, students can utilize the internet to investigate, evaluate, and develop knowledge (Soto & Gutierrez, 2018; Shokeen et al., 2022). Consequently, the ability to study independently is crucial in achieving objectives connected with information and communication technology literacy. Autonomous learning facilitates student success by allowing them to independently determine their learning pace and adapt their learning methods as they want to learn (Prema & Kumar, 2018).

Autonomy in student learning is achieved when students can make decisions based on their awareness, excitement, and involvement (Zimmerman, 2002). Zimmerman (2002) further demonstrates the need for planning, organizing, managing, monitoring, and assessing oneself at various stages of learning for individuals who study independently. Students are provided with systematic techniques to assist them in achieving academic success and identifying their strengths and areas for growth. Therefore, the instruction process in learning disciplines, such as English, may be enhanced by incorporating autonomy in learning.

Furthermore, it is crucial to acknowledge that the increasing significance of obtaining information and communication technology literacy skills should be differentiated from the transformation in students' learning settings. The process of learning English language acquisition is significantly different for children immersed in an ICT-based classroom compared to pupils who do not have the advantage of using ICT to aid their learning (Mantiri et al., 2019). All those who stand to benefit from this should acquaint themselves with this notion and thoroughly investigate it. Several variables significantly accelerate the rate at which individuals may acquire proficiency in information and communication technology. Within this study's scope, six specific characteristics challenge students to attain proficiency in information and communication technology. We distributed a questionnaire to the respondents to evaluate these six limiting criteria.

The questionnaire was supported by in-depth interviews with 72 learners and 12 representatives from each of the six schools included in our research. These factors include the number of students with computers, the presence of school-wide ICT infrastructure, the reliability of internet connections, the absence of regulations concerning the use of specific programs for English language learning, the financial resources allocated for data packages, and finally, the excitement and commitment of students towards integrating technology in English learning. A contributing factor to the limited number of learners achieving ICT literacy proficiency is the need for more presence of computers in the classroom.

Stakeholders are advised to identify and tackle various reasons that may impede students' advancement in ICT literacy skills and devise remedies for these challenges.

The findings indicated that out of the total number of participants, specifically 574 individuals expected to possess knowledge and proficiency in digital technology, their average information and communication technology (ICT) abilities were rated at 3.4. This score is above the threshold for being classified as having intermediate-level skills. The primary barrier to acquiring ICT competency was the high cost of internet data packages, representing 71.20%. Educators, particularly those in the English language classroom, are actively considering the survey results. English teachers effectively tackled the significant issues related to information and communication technologies, enabling their students to enhance their skills in utilizing these tools and fostering their ability to engage in self-directed learning. Consequently, these challenges transformed into valuable opportunities for acquiring English in the era of artificial intelligence.

Moreover, it is important to equip students with an assessment instrument to improve the quality of their English language proficiency. Firstly, through providing guidance and support to students in conducting these assessments; secondly, by encouraging and supporting students to engage other people (English teachers) in establishing performance criteria related to their duties; and thirdly, by providing guidance and support to students in evaluating their performance, we can enhance students' ability to assess their English language proficiency to meet their obligations. The researcher recognized that for secondary school students in Indonesia to achieve proficiency in utilizing information and communication technology for autonomous English language learning, it is essential to combine both standards.

Several constraints were identified in this study. One disadvantage of this study is that it solely relies on survey research to quantify respondents' ICT literacy abilities through questionnaires. The statements in the ICT questionnaire pertain to the ICT literacy theory proposed by Trilling and Fadel (2009). The questionnaire was also used to determine the percentage of different hindering factors in attaining ICT literacy among the participants. The data from the two questionnaires were strengthened by the insights gathered from interviews with respondents' representatives. These representatives highlighted the need to integrate ICT literacy into contemporary English language study in the era of artificial intelligence (AI). A total of 72 participants were interviewed via online interview methods due to the researchers' limited resources. Future researchers should prioritize investigating the effectiveness of certain AI-mediated apps in accelerating the acquisition of proficiency in English. This concept may be achieved by including more participants across many study programs at various universities in various cities in Indonesia.

What are the implications of this study's findings? AI has an unbreakable connection to students' demand for ICT literacy transformation. AI is merely a supporting media; as educators, we cannot ignore the role of AI-mediated apps in accelerating high school students' English proficiency. Therefore, the question is, is AI a friend or a foe? The answer is as a friend/stimulator, as long as all parties are prepared to collaborate to overcome the six barriers to kids' ICT literacy transformation. Teachers are also advised to encourage students to make reasonable ICT transformations and to stress critical thinking regardless without the use of AI. As ICT literacy improves, students will have the ability to comprehend language skills and components unconsciously.

How can AI facilitate a sustainable English learning process for students in the future? There are many applications presented because of the sophistication of AI such as QuillBot as a tool for paraphrasing in writing, ChatGPT for language skills and language components, Grammarly for grammar checking accuracy, Turnitin as a tool for similarity checking, and many more. These apps exemplify AI's contribution to English language acquisition. Nevertheless, researchers must highlight that the utilization of AI requires sufficient ICT proficiency to ensure that AI generates appropriate and beneficial effects for certain language skills and components. The QuillBot application is frequently suggested in English instruction since it can assist with both skills and language components. This tool effectively assists students in enhancing their writing skills, particularly in paraphrasing, vocabulary growth, and grammar. These three elements are highly important when assessing writing proficiency. Therefore, longitudinal experimental studies are necessary to assess the efficacy of AI tools on writing skills in future research initiatives.

CONCLUSION

The challenges in acquiring skills to effectively utilize information and communication technologies are directly linked to ICT literacy. Students' ability with ICT leads to a deeper understanding

of the functioning of various digital components in their learning activity and facilitates their acquisition of English language skills. Twenty items in the questionnaire evidence proficiency in the utilization of ICT. Most of the 574 high school students polled from six schools had scores in the intermediate range (3,4) on the competency scale for information and communication technology competence ratings. The findings of this moderate category align with the six obstacles to information and communication technology literacy. These challenges encompass students' interests and efforts, the financial limitations of internet data packages, the absence of regulations on the use of specific programs in English learning, the instability of internet connections, and the limited availability of computers in schools. Educators and learners are expected to be able to facilitate students' acquisition of information and communication technology skills and promote their development in this field, so all parties involved must collaborate and make significant contributions. Doing so can transform the challenges encountered into valuable opportunities for accelerating English language acquisition.

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AUTHOR CONTRIBUTIONS

Conceptualization; Methodology; Software; Formal Analysis; Investigation; Resources; Data Curation; Writing – Original Draft Preparation; Writing – Review & Editing; Visualization; Sebastianus Menggo.

CONFLICTS OF INTEREST

The author(s) declare no conflict of interest.

USE OF ARTIFICIAL INTELLIGENCE (AI)-ASSISTED TECHNOLOGY

The authors declare that no artificial intelligence (AI) tools were used in the generation, analysis, or writing of this manuscript. All aspects of the research, including data collection, interpretation, and manuscript preparation, were carried out entirely by the authors without the assistance of AI-based technologies.

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