Project-based learning: Does it improve students' ICT literacy skills and English learning autonomy?

Sebastianus Menggo[*], Sabina Ndiung

Universitas Katolik Indonesia Santu Paulus Ruteng, Indonesia

ABSTRACT

This study aims to investigate and disclose the integration of project-based learning in promoting high school students' ICT literacy and English learning autonomy in Ruteng, Indonesia. This study surveyed 595 students from six senior high schools in Ruteng City. The questionnaire and interview served as the primary instruments for data collection, followed by quantitative and qualitative examination of the results using Jeffreys' Amazing Statistics Program. The results of the study indicate that the level of ICT literacy among the students falls in the medium category (3.5), and English learning autonomy was included in the medium category (3.32). Sixteen statements of ICT literacy competence indicated the category of ICT literacy competence, while ten items indicated English learning autonomy. In addition, five factors challenged the respondents' achievement of ICT literacy, namely, lack of enthusiasm and initiative of students regarding digital media literacy (61.59%), lack of cost of purchasing Internet data packages (71.20%), insufficient time allocated for using specific English learning software (59.48%), unstable Internet network connectivity (58.27%), and lack of available ICT infrastructure in schools (58.33%). Various issues hinder the level at which

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[*] ***Corresponding author*:**

Sebastianus Menggo
Universitas Katolik Indonesia Santu Paulus Ruteng
Jl. Ahmad Yani 10 Manggarai NTT Tenda, Watu, Kabupaten Manggarai, Nusa Tenggara Tim. 86511, Indonesia
Email: sebastian.pradana@gmail.com

students could acquire ICT skills, and stakeholders are encouraged to address or overcome these obstacles.

Keywords: *English learning autonomy; ICT literacy; Obstacles; Project-based learning*

1. Introduction

ICT skills are essential for many aspects of life. Thus, technology needs to drive students to adapt, develop, and master ICT abilities to complete the subject assignments. Employment opportunities that require ICT skills affect students' future careers. As stated in the primary argument, everyone should be proficient in ICT to help with everyday tasks (Hafifah & Sulistyo, 2020; Kanchai, 2021; Suherman et al., 2020). Digital technology has transformed many aspects of life, including education. Thus, all education institutions must supply the IT resources needed to implement ICT-based learning as quickly as possible (Hussaini et al., 2023; Sulistiyo et al., 2022). Technology-based learning may redefine the role of the teacher by allowing students to explore deeper and more meaningful learning on their timelines (Apriani et al., 2022; Fahm et al., 2022). Every Indonesian school is still leading the way in preparing students to use digital technology and generate ICT-savvy results. Students' literacy in ICT are more likely to take charge, think rationally, be critical, and study independently (Eryansyah & Erlina, 2023; Leba & Temaja, 2023).

Every student must use ICTs efficiently to enhance learning outcomes. Digital learning can improve learning, assessment, and outcomes (Cao et al., 2023; Maru et al., 2021). The Indonesian government allows educational TV shows, e-books, video conferencing, Webex, Zoom, YouTube, Moodle, and other online digital media in classrooms. These digital media give more flexible learning options (time and location), are appealing, up-to-date with ICT, readily available, and cost-effective (Laili & Nashir, 2020; Menggo et al., 2022). An ICT-centered learning model puts students at the center, views them as a source of knowledge and information, increases accessibility, encourages self-regulation, and improves their digital abilities (Anggrasari, 2020). Thus, digital form in project-based learning helps students learn more languages, accommodates different learning styles, and meets the needs of growing ICT skills, responsibilities, and learning autonomy (Sha'Ar et al., 2022; Yastibaç et al., 2023).

Previous studies have shown that students who are competent in ICT acquire a language more quickly, are more engaged in their studies, are more open to new ways of learning, and are more likely to take the initiative to improve their digital abilities (Al Kandari & Al Qattan, 2020; Chan et al., 2017; Giovanni & Komariah, 2020; Jannah, 2019). Students who are knowledgeable in ICT might discover they have more time and space to develop their critical thinking, English skills, and reflective thinking (Enayati & Gilakjani, 2020; Mantiri et al., 2019).

However, researchers have not conducted extensive research on ICT project-based learning, ICT competence, and the obstacles to English learning autonomy for Secondary School Students in Indonesia's rural areas, such as Flores (research locus). This research was carried out to close the existing gap in our understanding.

Exploring ICT skills and obstacles is a phenomenon that has been around for a language-teaching context. Three prior studies have made observations pertinent to this study: ICT literacy empowers students to become active and innovative English language learners (Hafifah & Sulistyo, 2020; Sun & Shi, 2024; Talukder & Sikder, 2024). The explanation of the variables that inhibit the development of ICT abilities and their implications for English learning autonomy experienced by High School Students in remote areas is, however, what makes this research unique and distinctive from the others that have been done in the past. ICT literacy can transform students' ways of thinking and their abilities to pursue their academic goals. Students in remote areas can greatly benefit from knowing how to use technology to learn because it increases their drive and confidence and gives them more flexibility in how they learn and apply what they want to learn in English (Bhattarai, 2021; Khan & Kuddus, 2020; Liu et al., 2020).

This study's questions are intended to direct empirical data gathering about the state of English language learning autonomy across six high schools in Ruteng City, Indonesia.

Based on the preceding explanations and reasoning, the researchers propose the following research questions:
1. What is the ICT profile for students from six High Schools in Ruteng, Indonesia?
2. What challenges do high school students in remote areas face in achieving ICT competence in English learning autonomy?

2. Literature review

2.1. ICT literacy in English learning

Literacy is the ability to read and write; it gets its name from the Latin word for letter, which is *littered* (Ahern & Smith, 2022; Isnawati, 2023). Literacy is the ability to process and comprehend any meaning, whether it is literacy or something else. Literacy might mean financial literacy, entrepreneurship, healthcare literacy, ecological and sustainability literacy, and more. ICT literacy redefines literacy terms (Indah et al., 2022; Menggo et al., 2021). Literacy is about growing your intellect, accessing your inner resources, and addressing real-world problems, not only reading and writing. Learners must display literacy since it affects their learning process. Literacy boosts vocabulary, brain performance, worldview, analytical skills, and exposure to new ideas, all of which help overcome a variety of cognitive problems (Alkan & Bümen, 2020; Sumiati & Wijonarko, 2020).

Students should maximize their current English learning outcomes. The learning method must emphasize ICT literacy; therefore, students are encouraged to use multiple applications. This strategy affects today's thinking and work practices, as every field relies

on applications to maximize results (Bhushan, 2020; Marchlik et al., 2021). These researchers claimed that technology may save time and money and that non-ICT-based jobs will soon become obsolete. This view is a result of the inevitable shift to ICT-based work. Someone is deemed digitally literate if she/he can use constantly connected digital devices to access, interpret, analyze, and disseminate information (Champa, 2020; Kumari & Shekhar, 2022). This view defines "digital" as the work to create multimodal linguistic content (reading, visuals, activities, etc.). Information and Communication Technologies (ICT) literacy helps learners and educators comprehend the purpose of digital applications in improving their English learning. This skill is crucial for independent English language learning (Ahmed et al., 2020; Bhattarai, 2021; Can & Karacan, 2021). Teachers' ability to effortlessly integrate learning technologies into their daily work is directly affected by this insight. This will make learning more effective and successful. Information and Communication Technology literacy is essential for kids today since these skills are essential at every academic level, including English. English teachers should comprehend ICT as many English-related materials are computerized (Maru et al., 2021; Menggo & Darong, 2022).

An indication of information and communication technology (ICT) competency is the execution that every learner, including EFL learners, is encouraged to be able to analyze specific types of digital media or software, utilize or alter them, and really plan on being able to create particular apps as appropriate digital media to support their English learning achievements. The internalization type of ICT literacy offers several digital media platforms, including videos, YouTube, Duolingo, ChatGPT, and others, to engage students in learning English and prevent boredom (Hafifah & Sulistyo, 2020; Kanchai, 2021; Sulistiyo et al., 2022). The diverse range of digital media in question accelerates the attainment of fluency and precision in English speaking, as well as proficiency in pronunciation, vocabulary, and grammar.

Making videos serves as a prime example of how English learners can integrate ICT literacy since it is an interactive medium that facilitates the development of English-speaking fluency learners. It has been demonstrated that this notion has been confirmed by the findings from (AlSaied, 2021; Nash & Brady, 2022), who asserted that video is a powerful tool for enhancing fluency and proficiency in speaking. With the use of such video-based activities, English learners learn how to evaluate their speaking correctness and fluency faults, which include utterance speed, voice, stress, pauses, repeats, and corrections. Furthermore, video-based projects or any other English-related apps push English learners to become more conscious of their shortcomings in terms of pronunciation attributes. These include intonation (dropping intonation, rising intonation, and fall-rise intonation) of each word that is expressed, stress (word, phrase, clause, and sentence stress), rhythm, related speech and accent, accuracy, and weak sounds and connections between words (Djasman et al., 2024; Shen et al., 2023).

Furthermore, students who are learning English as a foreign language are encouraged to be more mindful of vocabulary attributes through the use of digital media-

based exercises. These vocabulary aspects include meaning, spelling, word pronunciation, part of words, word family, frequency, register, use, and collocation combinations (Miyliyeva, 2022; Ridha et al., 2022). When it comes to learning a language, one of the most essential tasks for students to concentrate on is increasing their vocabulary. This is because vocabulary expansion is one of the topics that come under the general heading of English learning. Vocabulary knowledge is usually considered to be an essential requirement for English language learners. This is due to the fact that having a limited vocabulary in English makes it more difficult to communicate with other people adequately.

2.2. ICT literacy and learning autonomy

To meet this digital literacy competency criteria, students need to succeed in three areas. Information, media, and communication technology literacy are addressed (Anggeraini et al., 2019; Maryatun, 2020). Reading, writing, and speaking assist students in meeting the English fluency standard. This research uses "digital literacy" only to refer to ICT skills. Students must demonstrate knowledge of relevant computer learning applications to be termed ICT literate. ICT literacy correlates with English learning progress. Indonesian students use digital multimedia instead of printed texts during the COVID-19 pandemic (Amri et al., 2020; Hidayat, 2015). Informatics and communication literacy Technology affects English studying habits. A habit is a recurring behavior that becomes routine. Students said familiarity with computers and other gadgets and using several software apps improves their English skills. Students' English writing vocabulary, pronunciation, grammatical clarity, and punctuation are considered (Hajebi et al., 2018; Urh & Jereb, 2014). Computer instructions in English encourage students to learn the language to understand instructional apps. Confused words can be understood promptly by students. This strategy aims to change students' English learning routines to improve reading and writing. Thus, students' English proficiency will increase with their ICT skills.

ICT literacy promotes students to be independent, proactive, and creative by using or creating learning apps. Independent English learners help pupils learn independently. Self-regulated learning, a combination of learning abilities and self-control that makes learning more engaging, enjoyable, and meaningful, motivates students to achieve their goals (Eryansyah & Erlina, 2023; Leba & Temaja, 2023). Student autonomy lets them use their resources and motivation to improve their learning and achieve outstanding results. Learning autonomy is crucial to every good educational program since students can assess their progress, stay motivated, and take complete responsibility for their learning (Lai & Gu, 2011; Mostafa et al., 2019). Digital apps enable academic emphasis on autonomous learning in English speaking practice, pronunciation, vocabulary expansion, and grammar. Research shows that giving pupils more choice in learning methods improves their English and ICT skills (Priego et al., 2015; Yot-Domínguez & Marcelo, 2017).

2.3. *Project-based learning in English language teaching*

English teachers are expected to adapt their teaching methods in order to meet their professional responsibilities and align with the shifting requirements of student learning orientations. Project-based learning (PjBL) is an educational approach that stems from the Constructivism concept. It is believed that PjBL facilitates more substantive and deeper learning by encouraging students to actively build knowledge (Espana & Soosaar, 2022; Menggo et al., 2023). Project-Based Learning (PjBL) is linked to the concepts of cognition, critical thinking, practical application, analytical reasoning, effective communication, and cooperative work in the educational process. These principles aid learners in acquiring the information, abilities, and proficiencies necessary for real-world situations (Norawati & Puspitasari, 2022; Sari & Prasetyo, 2021). Furthermore, PjBL empowers learners to foster their own learning, a practice that has been proven to enhance learning motivation and enhance critical thinking abilities (Sari & Prasetyo, 2021).

PjBL is based on the theoretical framework of constructivism, which posits that information cannot be transmitted to students but rather must be actively generated by the students directly. Students should be provided with an opportunity to obtain understandable input in order to provide complete output. Project-Based Learning (PjBL) can assist in attaining this target. Additionally, the project serves as the central component of project-based learning (PjBL) and requires that students adhere to several procedures in order to complete the project properly. Students must actively participate in authentic and captivating assignments and cooperate with others to enhance their language proficiency, linguistic elements, and subject matter expertise. The teacher coordinates the entire project and facilitates the learning process. Project work is characterized by its combined focus on both the process and product, allowing students to develop their fluency and accuracy at various stages in finishing the project given. Thus, PjBL is an educational approach that places students at the center and enables them to feel motivated, stimulated, empowered, and challenged. It does this by incorporating real-life tasks that aim to enhance students' confidence and learning autonomy (Song et al., 2024; Suryani et al., 2024). Project work enables students to enhance their language proficiency, job competencies, subject matter expertise, and cognitive aptitudes.

3. Method

This study employed a cross-sectional survey, which was done in June 2023 at six high schools in Ruteng, Indonesia. The fundamental goal of this design is to find out what kind of educational services the area needs in terms of courses, activities, and construction projects for the educational institutions, as well as any participation in the school or community empowerment programs (Creswell, 2014). In the context of this paper, this design was selected because the researchers intended to examine the profile of ICT skills and the obstacles to achieving English learning autonomy at six High Schools in Ruteng City, Indonesia.

There were 14.724 students in this study. Five hundred ninety-five students were selected as a sample using a Multistage Cluster Random Sampling Technique. This sample was taken from six Senior High Schools in Ruteng, Flores, East Nusa Tenggara Province.

Table 1

Sample distribution.

No	School	Sex		Sample Numbers
		Female	Male	
1	SMA Negeri 1 Langke Rembong	67	33	100
2	SMA Negeri 1 Langke Rembong	71	29	100
3	SMA Swasta Katolik Setia Bakti Ruteng	76	27	103
4	SMA Swasta Katolik Fransiskus Ruteng	58	43	101
5	SMA Swasta Karya Ruteng	54	39	93
6	SMA Swasta Katolik Thomas Aquinas Ruteng	63	35	98
	Total			595

The questionnaire and interview were methods used for data gathering. The concept offered by Trilling and Fadel was incorporated into the ICT literacy questionnaire (Trilling & Fadel, 2009), and English learning autonomy adopted the concept of self-regulated learning proposed by (Zimmerman, 2002). It covered 16 statements about concerns and competencies in Information and Communication Technology literacy, and 10 items covered English learning autonomy. Each of those sixteen statements was asked as closed-ended questions with five possible answers, and respondents needed to choose one answer. Three rounds of expert examination evaluated each item on the questionnaire to determine its relevance or irrelevance to the overall content validity before it was distributed to the respondents.

This study used a score table to illustrate the respondents' ICT literacy levels concerning the questionnaire response options. Additionally, a category is offered to categorize the respondents' level of ICT literacy skills. Four classifications are available: high, medium, low, and very low. Table 2 below shows the possible range of results for each category. The respondents' level of autonomy in English learning is also quantified in Table 2.

Table 2

ICT literacy level.

Score	Category
1,1 – 2,1	Very low
2,2 – 3,1	Low
3,2 – 4,1	Medium
4,2 – 5,0	High

The percentage was calculated using numerical methods based on the survey data collected. The percentage was analyzed using the Excel chart data series software, and the findings were then presented for qualitative analysis.

4. Findings

This section focuses mainly on the results of the ICT skills and the challenges they face. Each aspect of the explored variable is quantified using Excel's visual data series tool. Table 3 below describes a summary of ICT literacy skills.

Table 3

ICT skills rate.

No	Item	Mean
1	Ability to learn English through the use of graphical software	2,7
2	Ability to use concordance program software applications (for text analysis/corpus linguistics) in the process of learning English	2,6
3	Ability to use English learning software applications, such as Google Voice, CD-ROM, DVD, and so forth	3,7
4	Ability to use the Blog application in the process of learning English	3,8
5	Ability to use computer games in the process of learning English	3,7
6	Ability to use an electronic dictionary in the process of learning English	4,4
7	Ability to work with the Skype application in the process of learning English	2,7
8	Ability to work with the Dropbox application/program (File sharing sites) in the process of learning English	2,5
9	Ability to work with Picasa applications/programs (Photo sharing sites) in the process of learning English	4,6
10	Ability to work with the YouTube application (Video sharing sites) in the process of learning English	4,3
11	Ability to work with the Google Classroom application in the English learning process	3,4
12	Ability to work with the Google Meet application in the process of learning English	2,8
13	Ability to work with the Ruang Guru application in the process of learning English	3.2
14	Ability to work with the Edmodo application in the process of learning English	2,6
15	Ability to work with the WhatsApp video call group application in the process of learning English	4,4
16	Ability to work with the Zoom application in the English learning process	4,6
	Average	3,5

Source: Researchers' data

Items 1 through 16 in Table 3 above show the levels of ICT literacy possessed by 595 respondents from six High Schools in Ruteng City, Flores, Indonesia. The data analysis shows that the average score of the 595 respondents on the evaluation of ICT literacy was 3.5, ranking them in the Medium competency level. Besides, Table 4 below displays the findings of the survey analysis about the respondents' level of English learning autonomy.

Table 4

Students' learning autonomy.

No	Item	Mean
1	I have a fixed schedule for studying English	4,4
2	I have my strategy for learning English	3,8
3	I will not deviate from my planned study time	2,6
4	I summarise the English material I study as part of my study schedule	2,8
5	I determine the priority that I must master the material I learn	3,8
6	I can choose and determine the references to the English material being studied	3,4
7	I can do a self-assessment of my progress in learning English	3,6
8	Depending on my English level, I can select the appropriate English learning application	3,2
9	I took the initiative to have discussions with peers who were believed to be capable of assisting me with my limited English	2,8
10	I am committed to the allocated length of study time in my schedule	2,8
	Average	3,32

Items 1 through 10 in Table 4 above show the levels of English learning autonomy possessed by 595 respondents from six High Schools in Ruteng City, Flores, Indonesia. Data analysis suggests that most 595 respondents were placed in the Medium category in measuring English learning autonomy.

The study also revealed several variables that contributed to the respondents' medium levels of ICT literacy, including a lack of access to digital media laptops, poor connectivity to the internet at High School, a lack of time committed to using specific applications in English lessons, high prices for internet data packages, and lacking student enthusiasm and self-initiative. Although many obstacles remain, this study focuses on the six necessities that are essential for high school students to be proficient in ICT literacy. Guttman scales were used to rate these six limiting variables, with the researcher providing solely yes/no options (Bungin, 2005). A "yes/positive" response will be valued at a "one," whereas a "no/negative" response will be valued at "zero." Furthermore, the average percentage of questions related to the six limiting criteria is explained in Diagram 1 below.
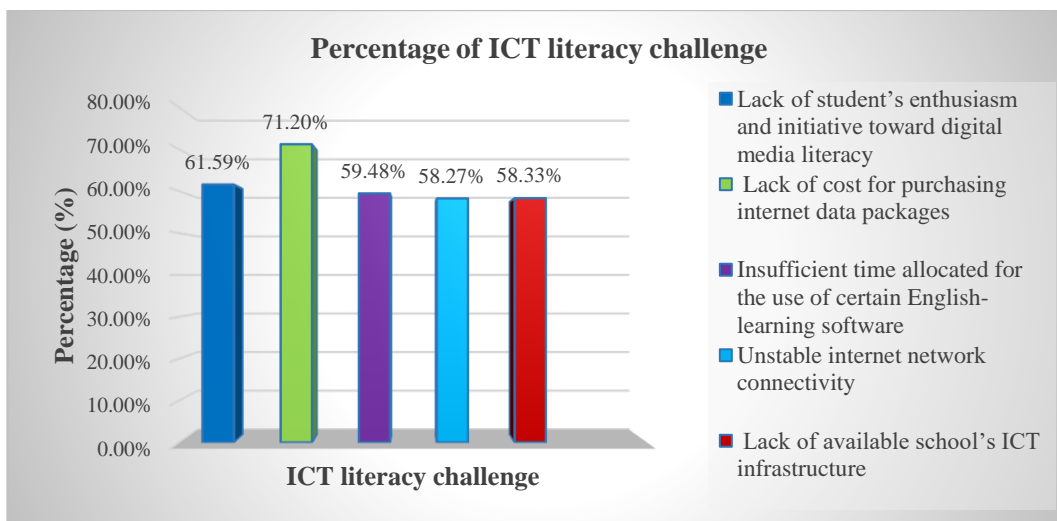
Diagram 1. ICT literacy challenge

4. Discussion

The respondents' level of ICT competence is Moderate (see Table 4). The respondent's lack of enthusiasm and initiative accounted for the second-highest presentation rate of 61.59%. The cost of purchasing online data packages represented the most significant proportion (71,20%). According to this study, a medium level of ICT literacy is made worse by factors that impede learning and hinder the improvement of students' English proficiency and the adaptation of their learning habits. It is excellent for learners to independently explore and learn English in their own way when they possess ICT literacy (Bilotserkovets et al., 2021; Hattani, 2016).

Students' success in learning to use and mastering ICT depends on their understanding of English. With the demands of digital ICT literacy for students in this Twenty-First-Century Education, they unconsciously learn English (Cao et al., 2023; Marchlik et al., 2021). Students are expected to have a fundamental understanding of how various learning applications function on their computer hardware. Students need an excellent knowledge of the English language to comprehend the various aspects and capabilities of today's ICT equipment. Since students need a foundation in English vocabulary to operate the various components of the ICT they use daily, it is reasonable to assume that ICT literacy impacts students' language skills. If people have a low literacy level regarding Information and Communication Technology, there is also a low possibility that they will be able to comprehend the English language (Bhushan, 2020; Indah et al., 2022; Rusydiyah et al., 2020).

Mastering ICT and the abilities needed to utilize it directly impact how well learners absorb and apply foundational aspects of the English language, including listening comprehension, speaking, writing, grammar, and vocabulary. For this article, "ICT literacy" refers to a student's familiarity with and ability to use various computer software and hardware (Apriani et al., 2022; Liu et al., 2020). According to these

researchers, students with expertise in ICT can better assess their strengths and weaknesses in learning English in all areas of the language, from listening and speaking to reading and writing to pronunciation, grammar, and vocabulary. The researchers behind these researches add that this is so because ICT literacy inspires learners to assess their English-language development.

Students' attitudes toward learning transform due to growing ICT literacy, which positively impacts areas like the development of autonomous learning and self-assess and the emergence of creative and innovative skills in support of the rapid advancement of the achievement of competencies wanted by the students. Several barriers to achieving a suitable degree of ICT literacy competency can be handled by implementing periodic changes in learning habits. As a result of the increasing demand for proficient use of information and communication technology in the classroom, students automatically display creative and solution ideas to overcome various English learning problems. If students take the initiative and are motivated, they will be able to explore digital knowledge, analyze and evaluate it, and develop or create their findings (Champa, 2020; Sun & Shi, 2024; Talukder & Sikder, 2024). Therefore, learning autonomy is an essential component in achieving ICT literacy goals.

Learners who are free to determine their own learning pace and adjust their techniques as needed to succeed benefit from a process known as "learning autonomy"(El-Henawy et al., 2012; Prema & Kumar, 2018). When students have the freedom to make decisions about their learning based on their consciousness, motivation, and actions, we say that they have achieved learning autonomy (Zimmerman, 2002). From the perspective of metacognition, Zimmerman explains to autonomous learners what it means to plan, organize, manage, monitor, and evaluate themselves at various levels based on what they have acquired in learning. Students receive assistance in achieving academic success and evaluating their strengths and limitations through similar processes. As a result, learning autonomy can be utilized as a strategy in the learning process, including English subjects. It is also necessary to differentiate the shift in students' learning culture from the growing importance of developing Information and Communication Technology literacy skills. The process of learning English for students whose learning is not mediated by their ability to use Information and Communications Technology (ICT) would appear very different from the process of learning English for students whose learning is based on a culture of learning on ICT-based (Khan & Kuddus, 2020; Sha'Ar et al., 2022). Based on this idea, all interested parties need to have an understanding of it and do research into it. These factors contribute to a slower rate at which ICT literacy competence can be achieved.

In the context of this research, six factors impair the percentage of students who can achieve ICT literacy competence. These six inhibiting factors were measured using a questionnaire, and the results of the questionnaire analysis were further developed through interviews with 60 students and ten representatives from each research site in six schools. These factors include the limited number of students who have laptops, the

limited availability of ICT infrastructure in schools, unstable internet networks, the absence of policies on the use of specific applications in English learning, and data package budgets, as well as the pupils' interests and initiatives on digital learning. The limited number of students with laptops is one factor that hinders the percentage of students who can achieve ICT literacy competence. It is advised to the various stakeholders that they handle a variety of reasons that should slow down the rate at which students' ICT literacy competencies can be achieved and that they develop alternatives to those problems.

The survey results revealed that 595 respondents possessed a medium level of ICT skills (average = 3.5), which should have been better given that they belonged to the digital generation. In contrast, their English learning autonomy was 3.32 (Medium category). The primary barrier to acquiring ICT literacy skills was the financial burden of buying online data packages (71.20%).

Educators, particularly those teaching English, are actively responding to the findings of this survey. The English teachers effectively implemented strategies to enhance students' ICT proficiency and foster their independent learning capacity, addressing the primary challenges of ICT-related issues. Project-based learning (PBL) is a method of instruction that serves in a practical, flexible, and proactive way. The approach referred to is often recognized as a student-centered learning paradigm. PjBL begins with a problem context for an authentic project or activity that places students in a position where they need to investigate/inquire into their surroundings and come up with solutions in order to reach their goals (Deveci & Ayish, 2018; Saenab et al., 2018). The transformation of this notion into its practical application is based on the broader context of the subjects being taught.

In addition, it is recommended that English educators possess an in-depth knowledge of the aspects of Project-based Learning (PjBL), syntax, and the procedural stages involved in how it is carried out. Researchers have grounded PjBL in a diverse range of scholarly sources. In the present study, the researcher modified the characteristics, syntax, and application stages in the context of English teaching. The characteristics of PjBL, according to (Margaret et al., 2012; Musa et al., 2012; Zulyusri et al., 2023), are that Students make choices within a framework, are presented with problems or challenges, develop processes for identifying solutions, work together to access and manage information to solve problems, engage in periodic reflection on completed activities, and have their work assessed at the end of the learning process.

Because of its beneficial characteristics, PjBL is increasingly being used in classrooms of all types of subjects taught. Teachers should be familiar with PjBL syntax to create suitable inquiries and projects in such a case. This idea is the starting point for students to investigate the problems associated with observable phenomena; an experiment can be used to build a project plan as a concrete step toward answering the current questions and create a strategy as the project's nitty-gritty steps. Successful project management requires careful scheduling to ensure the project is completed within the

designated timeframe and by planned expectations. Additionally, learners engage in regular project reviews to monitor their current projects' progress, activities, and outcomes.

The efficacy of this syntax can be achieved by meticulously and appropriately adhering to the six stages of its implementation (Kusumawati, 2021; Woodward et al., 2010). The first step in learning is asking basic questions that can lead to specific assignments. The themes students choose for their assignments are relevant to the actual world and prompt in-depth investigation. Teachers and learners work together to plan and execute design projects. Planning includes knowing the rules of the game, selecting games that help answer key questions by combining different types of content, and being familiar with the materials and methods at your disposal. Teachers and students work together to create schedules for activities related to completing projects, including allocating time for completion, setting deadlines, bringing students together to plan new ways, guiding students when they make ways that are unrelated to the project, and encouraging students to provide rationales for the decision-making process; Teachers need to keep an eye on their pupils to ensure they are on plan with the project and doing what they need to do to complete it. Students' involvement in each step of the process is monitored this way. Teachers lead their classes by giving examples. Examine experiences to help simplify the monitoring process; develop a rubric to account for all significant activities; use test results to assess student progress and teacher effectiveness; and plan for future instruction based on test results and student feedback. Both teachers and students benefit from taking assessments of their work and the lessons they have learned after a project's completion. The time for reflection is spent individually and in small groups.

The pros and cons of each teaching technique are obvious. However, the researcher highlighted the benefits of PjBL based on the characteristics, syntax, and stages of execution as a means of increasing students' learning motivation, encouraging their ability to do essential tasks, problem-solving skills, collaboration skills, interpersonal communication practice, managing learning resources, time management, contextual (designing learning activities following the real world and the development of students), and a variety of other skills. PjBL, and especially ICT use in instruction, has many disadvantages, including the need for more time and money to address complex problems and buy learning resources.

Teachers interested in implementing PjBL should be familiar with the PjBL assessment alongside the mentioned components. The evaluation process includes more than just a final score. In addition, we need to make sure that students have a way to assess their performance in order to improve the quality of their projects. The following methods may be used in its implementation: Students' ability to evaluate their performance in reaching their responsibilities can be improved in three ways: (1) by encouraging and directing them to conduct such evaluations; (2) by encouraging and promoting students to involve external parties in developing work standards related to their responsibilities;

and (3) by encouraging and connecting students to evaluate their performance. The researcher concluded that acquiring ICT literacy skills on English learning autonomy in Indonesia necessitates combining multiple components in Project-based learning based on the characteristics, practical application processes, and manner of assessment stated above.

5. Conclusion

There is a close relationship between ICT literacy and the factors that hinder its development. Students who have a better understanding of ICT will have an easier time learning English and will have a better understanding of how various digital components work in their learning behavior. Sixteen items in the questionnaire demonstrate competence in using ICT, and ten statements are related to English learning autonomy. According to the results, most of the 595 high school students from six schools in Ruteng, Flores, Indonesia, score in the medium range on ICT literacy and English learning autonomy. The conclusions of this moderate category are in line with the six barriers to ICT literacy, namely limited ownership of laptops, limited availability of ICT infrastructure in schools, unstable Internet networks, lack of policies on the use of specific applications in English learning, and budgets for Internet data packages, as well as students' interests and initiatives. All stakeholders are expected to work together and make significant contributions to overcoming the factors that prevent high school students from acquiring ICT skills, and to promote the development of their ICT skills and autonomy in English learning.

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