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Digital Literacy in Action: An Ethnographic Study of EFL Classrooms in Indonesian Senior High School

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Abstract

Digital literacy is essential in contemporary Education, research in rural or under-resourced environments is scarce, especially on its cultural and pedagogical aspects. The study employed a qualitative ethnographic methodology, conducted over six months at SMA Negeri 10 Kota Ternate, which incorporated participant observation, semi-structured interviews, document analysis, and field notes. The findings indicated that Education based on digital literacy was executed in three fundamental phases: planning, implementation, and evaluation. Educators incorporated available digital resources, such as YouTube, Canva, Google Forms, and Kahoot, to create engaging and interactive learning environments. Nonetheless, infrastructure limitations and varied levels of digital proficiency posed ongoing obstacles. Three emerging cultural themes—pedagogical adaptation, negotiated involvement, and reflective assessment—highlighted how educators tailored digital practices to their sociocultural setting. The study suggests that digital literacy in EFL education is both a technical process and a contextual social practice, influenced by factors such as context, agency, and resource availability. It advocates for improved teacher professional development and infrastructure to facilitate equitable and contextually relevant digital instruction in marginalised educational environments. This study is limited to one rural Indonesian senior high school, five EFL teachers, and a six-month ethnographic observation, restricting broader generalizability across diverse institutional, geographic, and socio-educational contexts.

Keywords: *Digital Literacy; Action; Ethnography; Indonesian EFL classrooms*

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1. Introduction

The rapid integration of digital technology into various aspects of life has revolutionized communication, information access, and participation in social and educational endeavors (Levin et al., 2025; Zou et al., 2025). In the 21st century, digital literacy has emerged as a fundamental skill, frequently regarded as equally vital as conventional literacy and numeracy (Henne et al., 2024; Mejías-Acosta et al., 2024). The extensive adoption of digital technologies in educational environments highlights the need for both learners and educators to possess proficiency in the technical application of these tools, as well as an understanding of their impact on learning, communication, and identity (Barreras et al., 2024; Umarova, 2024). As societies become increasingly digitized, education systems face the challenge of fostering digital literacy in students to equip them for engagement in a digitally interconnected global society (Baskara, 2024; Buchan et al., 2024). Digital literacy extends beyond basic operational skills; it includes critical thinking, online communication, ethical digital conduct, and cultural understanding in digital environments.

In the context of English as a Foreign Language (EFL) Education, digital literacy holds considerable importance. English language learners must handle not only the linguistic demands of learning a second language but also the digital modalities through which language instruction is increasingly delivered. (Anwar & Anjarningsih, 2024; Chan & Lo, 2024) The transition to technology-enhanced language learning environments has presented novel pedagogical opportunities and problems for educators and learners (Cabellos et al., 2023). In countries like Indonesia, where educational reforms have incorporated digital technology into curricula, digital literacy has become a crucial component of the teaching and learning process in EFL classrooms. The implementation of digital literacy in EFL classrooms throughout Indonesia, particularly in public senior high schools, exhibits significant variability (Akbari et al., 2024; Anwar & Anjarningsih, 2024). Geographic location, infrastructural constraints, teacher readiness, and sociocultural factors influence the inconsistent adoption and integration of digital tools (Atmojo et al., 2022; Isma et al., 2023). In remote or under-resourced

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areas, digital learning initiatives may be hindered by inadequate access to digital devices, unreliable internet connectivity, and limited professional development opportunities for educators. As a result, children in these circumstances may not receive equitable advantages from the potential of digital learning.

Although there is a growing academic focus on digital literacy in Education, current research frequently emphasizes a technical or policy-driven approach that prioritizes access to digital tools and infrastructure, neglecting the social and cultural aspects of digital literacy practices. Research has frequently concentrated on urban or technologically sophisticated educational institutions, where the incorporation of digital technologies is more comprehensive and systematic (Barreras et al., 2024; Cabellos et al., 2023; Vallès-Peris & Domènech, 2023). This has led to a limited understanding of how digital literacy develops in peripheral or rural settings, where technological challenges intersect with local educational and cultural factors. Furthermore, a significant portion of research concerning digital literacy in EFL education predominantly utilizes quantitative or survey-based methodologies that identify overarching trends, including students' digital literacy and reading comprehension, the influence of digital literacy in university blended learning contexts, high school English learning materials, the incorporation of digital literacy across various disciplines to promote students' holistic development as digital citizens, and underscoring that successful technology integration is contingent upon teacher preparedness and institutional support, which includes adequate facilities and resources (Sari et al. (2024; Hanif et al., 2024; Palupi & Subianto, 2024; Suryantari, 2023; Batubara, 2021). However, disregard the lived experiences of students and educators. Such approaches may neglect the contextual aspects that influence the perception, practice, and valuation of digital literacy within particular learning communities. Thus, a notable deficiency persists in ethnographic studies that investigate digital literacy as a contextual and socially created phenomenon in EFL classes, especially in Indonesian senior high schools.

In light of these complexities, there is a growing need to understand how digital literacy is enacted in diverse educational settings. An ethnographic perspective provides a valuable lens through which to explore how digital literacy is lived,

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experienced, and negotiated within specific classroom contexts. By observing and engaging with the daily practices of teachers and students, researchers can uncover the nuanced ways in which digital technologies shape language learning processes, social interactions, and educational identities. This study aims to investigate the implementation of digital literacy in Indonesian EFL classrooms through an ethnographic perspective, addressing existing gaps. This study introduces novelty by adopting an ethnographic approach to examine digital literacy in rural Indonesian EFL classrooms, an area often overlooked in existing research. Unlike prior studies that emphasize technical access or policy-driven integration, this research highlights lived experiences, cultural adaptation, and social practices shaping digital literacy in under-resourced contexts.

2. Materials and Methods

2.1. Research Design

This study employs a qualitative approach, drawing on an ethnographic perspective. Ethnographic studies aim to deliver a comprehensive description, analysis, and interpretation of learning cultures through the application of digital literacy-based Education in Indonesian EFL classrooms. Ethnographic studies can be conducted within educational settings to examine the behavioural patterns of groups of teachers and students during the learning process, as well as the role of school leaders as policymakers (Creswell & Creswell, 2023). The six-month research period (equivalent to one semester) aligns with the academic calendar. Researchers establish the schedule according to the location and extent of the investigation within the educational setting, particularly in ethnographic studies. An ethnography generally involves a research duration ranging from six months to over two years on the topic of study (Fetterman, 2010). The investigation was conducted at SMA Negeri 10 in Kota Ternate, North Maluku Province. SMA Negeri 10 Kota Ternate has been selected as the research site due to several attributes that correspond with the requirements of this study.

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2.2. Research Participants

The researchers employ a purposive sampling technique to select participants for the study, as these selections are expected to provide concentrated insight into research issues and phenomena (Creswell & Creswell, 2023). The researchers engaged five EFL teachers from SMA Negeri 10 Kota Ternate as participants in the study. These individuals are referred to as gatekeepers, key informants, or participants (Creswell, 2012). All participants in this study originate from the same educational environment or local community. They have established enduring social bonds, engaged in prolonged contacts, and shared similar cultural backgrounds and objectives within their group (Creswell & Creswell, 2023; Spradley, 2006). Five EFL teachers participated in this research, comprising four females and one male. The participants were chosen according to the subsequent considerations and criteria: (1) Four EFL instructors possess a bachelor's degree in English, while one holds a master's degree; (2) five EFL instructors have teaching experience in EFL classes spanning three to thirty years; and (3) they have considerable expertise in imparting instruction grounded on digital literacy inside EFL classrooms.

2.3. Research Instruments

This study utilized various instruments to validate and measure data, which are dependent on quality, including: *Researchers as the Primary Instrument*. In the qualitative approach, the researcher serves as the principal instrument for data collection. The researchers gather and examine the data (Creswell & Creswell, 2023). *Interview Protocol and Audio Recorder*. The interview procedure is one of the devices employed throughout the participant interview process. *The smartphone application's voice recorder* feature captures the interview process between the researchers and participants. These instruments were employed during interviews with educators to collect information pertinent to the research objective.

2.4. Procedure for collecting data

In ethnographic research, investigators gather comprehensive data about behaviour through observation, interviews, record analysis, and artefact examination (Fetterman, 2010; Spradley, 1979). Data collected via interviews,

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participant observation, and the examination of various documents, including school policy documents, attendance records, and field notes (Mills & Gay, 2016). The phases of the data collection process are: (1) Semi-Structured Interview. This research employed semi-structured interviews as a data-gathering method to obtain detailed information from participants. (2) Participant Observation. The researchers examine the behaviours of teachers and students both within and beyond the school environment. (3) Document Analysis. The study performed a document analysis, involving the collection of diverse documents utilised by EFL teachers and students in the educational process, including lesson plans, teaching modules, instructional materials, digital learning media, digital tools, facilities that enhance the learning experience, school policy documents, and attendance records. (4) Filed Notes. Field notes constitute one component of the data collection employed by the researchers in this study. It documented thoroughly the activities undertaken by participants regarding digital literacy-based instruction in EFL classrooms.

2.5. Data Analysis Technique

Qualitative data analysis requires the researcher to exhibit patience and introspection while systematically analysing diverse data sources, including field notes, interviews, questionnaires, maps, photographs, audio transcripts, and video observations (Mills & Gay, 2016). The researchers conducted a qualitative analysis of data obtained from participant observation, semi-structured interviews, document analysis, and field notes. The stages of data analysis employ Spradley's (2006) models, which commence with domain analysis, followed by taxonomic analysis, component analysis, and the identification of cultural themes. Spradley's (2006) data analysis paradigm delineates the stage as follows:

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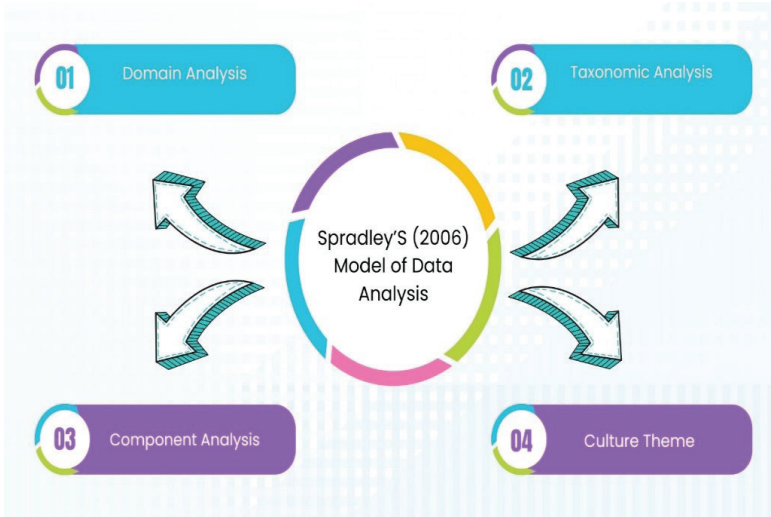

Figure 1. Spradley's (2006) Model of Data Analysis

Decryptions:

1. Domain analysis: The researcher obtains a holistic and thorough understanding of items or social contexts.
2. Taxonomic Analysis: The researcher chose domains that provide greater specificity for internal patterns.
3. Component Analysis: Distinguish unique characteristics of each internal pattern by comparative examination of the elements.
4. Cultural Theme: Investigating the interconnections among domains and their relation to the entirety, with themes that align with the primary and secondary emphasis of the research.

3. Results and Discussions

The findings indicated that the implementation of digital literacy-based instruction in EFL classrooms occurred through three stages: (1) the planning stage, (1) the implementation stage, and (3) the evaluation stage, and cultural themes.

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3.1. Planning Stage

The findings indicate that educators' instructional preparation focused on digital literacy is increasingly systematic, yet still contingent upon institutional regulations and the readiness of individual teachers. Interview results reveal that instructors have consistently utilised digital technology from the early stages of instructional preparation, including the development of lesson plans and teaching modules. The statements from participants SRF, IN, SN, and FS suggest that digital media, particularly YouTube videos, Canva, and Google Forms, ought to be incorporated into their planning materials. There is a significant variety in the creation of instructional documents. Participants IN and SN, for instance, tend to rely more heavily on educational modules that integrate digital media into the core components of the instructional material. Participant HR stated that digital media may not be explicitly included in the lesson plan (RPP); however, their use is deemed essential to the instructional methodology. This indicates a dual technique that includes formal documentation and a more flexible, practice-oriented planning approach. The examination of instructional material (lesson plans and teaching modules) and field notes supports these findings, demonstrating that educators included digital media and platforms in the early-semester preparation process.

Regarding the selection of digital media, the majority of educators favour platforms that are easily accessible and familiar to both themselves and their pupils, such as YouTube and PowerPoint. Participant FS enhanced instructional preparation by employing Canva and Google Forms for assessment and content dissemination. This demonstrates that digital literacy in the planning process extends beyond simply offering digital material; it encompasses the strategic use of media to promote active student engagement. Although the majority of instructors reported no significant obstacles during the preparation phase, apprehensions over time and technology readiness remain as fundamental challenges. Participant SN noted that digital lesson planning requires more time than conventional methods. This highlights that incorporating digital technology into instructional planning entails resource utilisation and demands a shift in pedagogical paradigms, necessitating innovation, time investment, and considerable adaptability. The

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results from the planning phase demonstrate that the integration of digital literacy in EFL lessons has been recognised as a standard practice at the conceptual level. However, it requires improving documentation consistency, ongoing professional development for educators, and providing adequate time and resources to establish effective and inclusive digital instruction.

Here is the evidence of the planning stage of implementing digital literacy-based learning in EFL classrooms, as reported by EFL teachers.

Extract 1	*"The first time I designed learning activities, I read the guidelines, such as the Basic Competencies (KD) that need to be achieved. After that, I began to make the Lesson Plan (RPP). When designing a Lesson Plan, I immediately search for relevant videos for classroom use. Therefore, these videos are planned and included in the learning materials." (Interview with SRF, 13/01/2025)*
Extract 2	*"Everything that will be used is included in the teaching module before the learning process begins, and technology has already been integrated since the planning stage." (Interview with IN, 14/01/2025).*
Extract 3	*"Yes, the material is included in one of the components of the teaching module. It contains media or learning tools." (Interview with SN, 16/01/2025)*
Extract 4	*"Yes, in my teaching module, I include learning media. For instance, for the analytical exposition text material, I use Google Forms and include it in the media section of the teaching module." (Interview with FS, 17/01/2025).*
Extract 5	*"Digital platforms and/or digital media are reflected in the lesson plans or teaching modules prepared by teachers before the learning process." (Document Analysis, 2025).*
Extract 6	*"The teaching plan is carried out at the beginning of the semester through the Musawara Guru Mata Pelajaran (MGMP) activities organised by the school." (Field Notes, 2025).*

3.2. Implementation Stage

The results confirm that the implementation phase represents the actualisation of digital learning efforts in the classroom. Interview findings indicate that the incorporation of digital literacy in EFL classrooms is characterised by pedagogical innovation, varied media usage, and adaptive responses to students' needs and the educational environment. Each educator demonstrated proactive efforts to provide relevant and engaging digital learning experiences. Participants SRF and IN consistently utilised YouTube videos as their primary educational tools. These

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films functioned as both informative resources and stimulants for discussion and reflection. Participant SN expanded the media landscape by incorporating auditory and visual elements, emphasising the importance of compelling introductions before engaging with digital material. This technique highlights the need to pedagogically regulate digital media usage to prevent its reduction to mere passive consumption by students.

Furthermore, participant FS demonstrated an interactive and participatory implementation approach, employing platforms such as Kahoot for quizzes and Canva for digital design tasks. Rather than merely imparting knowledge, FS illustrated processes in class, allowing students to observe and actively replicate these techniques. This illustrates a constructivist approach in digital EFL education, where learning occurs through information sharing and experiential engagement. Nonetheless, execution encountered multiple issues. Technical issues emerged as ongoing obstacles, including unstable internet connections, malfunctioning projectors, and limited access to devices for students. Participants SRF and FN acknowledged that these technical issues often obstructed the smooth execution of teaching initiatives. Furthermore, variations in pupils' learning styles, particularly among those with kinesthetic preferences, posed further challenges. Educators adapted instructional activities, shown by SRF's implementation of collaborative assignments and dialogic exercises.

Embracing digital literacy entails both the distribution of content via digital means and the use of inclusive and adaptive classroom management strategies. The interviewed educators demonstrated active engagement with digital media, taking into account the emotional and social aspects of their pupils. Digital tools were utilised to enhance learning in a contextual, relevant, and participatory manner. The implementation phase integrates an innovative curriculum that prioritises creativity and adaptability. Digital literacy in EFL courses has evolved into an interactive endeavour. Nevertheless, it is constrained by architectural limitations and varying levels of technology readiness among schools.

The following extract demonstrates the implementation of digital literacy-based teaching by EFL teachers in EFL classes.

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Extract 7	*"I carry out the activities as planned. For example, if there is a task to observe a video, I prepare it on the laptop and bring it to the class. The video is played using the projector available in the classroom" (interview with SRF, 13/01/2025).*
Extract 8	*"As outlined in the lesson plan. For example, when using YouTube, we first need a projector, a laptop, and a stable internet connection. If the video has not been downloaded, we will open it via a link. However, if the video has been downloaded, the students are directed to watch the video in class" (interview with IN, 14/01/2025).*
Extract 9	*"Usually, there is an introduction at the beginning of the activity. I prepare a short video, such as an animated film, to be shown at the start of the lesson. If a video is not used, audio or images may also be utilised" (interview with SN, 16/01/2025).*
Extract 10	*"In the implementation process, I typically show an English-language video related to the topic, for example, an analytical exposition text. After the students had watched the video, I asked them about its content. After presenting the material, I used Kahoot. The students compete to answer questions about the material taught, and the scores are immediately displayed on the screen. I also use Canva. For instance, I create a poster design, and the students observe my design process in real-time. Afterward, they are asked to create their designs." (Interview with FS, 17/02/2025).*

Furthermore, observational data offered unequivocal evidence regarding the application of digital literacy in instructional procedures and the students' responses to these practices.

Table 1. The results of classroom observations on implementing

Participant	Observation Date	Class	Findings
Participant (SRF)	January-May 2025	XII IPA-1	*The teacher uses video-based materials accessed via YouTube and integrates them with textbook materials. The teacher also plays videos using a speaker and a projector.*
Participants HR	January-April, May (2025).	XII IPA-2	*The teacher uses digital materials, integrated with printed books, via YouTube. The teacher also uses the Vocabulary Spelling City app on smartphones.*
Participant IN	January-May (2025).	XI-2	*Digital and printed materials are integrated into a presentation format. Students use smartphones to access various materials as instructed by the teacher.*

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Participant	Observation Date	Class	Findings
Participant SN	January-May (2025).	X-1	*The teacher uses link-based materials accessed through YouTube and integrated into PowerPoint presentations. Group learning is conducted using electronic texts.*
Participant FS	January-May 2025	XI-6	*Utilises the Kahoot app, which is integrated into the learning process. The teacher elaborates on both digital and printed materials. Video materials are played through a projector and accessed via YouTube.*

In the beginning phases of teaching, it was observed that digital learning resources, particularly instructional videos accessed via platforms such as YouTube, constituted a principal method for implementing digital literacy. Utilising films as educational tools reflects an effort to enhance student engagement through visually and aurally presented content. This approach acknowledges that multimedia, especially video, may effectively capture students' interest and attention during the learning process. This process is augmented by the integration of multimedia devices, like projectors and speakers, which provide a more engaging and dynamic content delivery. Moreover, utilising smartphones in the classroom, beyond simply accessing resources through applications or videos, fosters more dynamic learning experiences for students. Educational platforms such as Vocabulary Spelling City and Kahoot facilitate increased student engagement with learning materials, primarily through interactive games and quizzes. The implementation of these technologies demonstrates an effort to transform conventional digital tools, improving educational quality and promoting greater student engagement in the learning process.

A taxonomic analysis reveals a notable trend in the integration of digital and print media. A multitude of educators do not rely solely on digital resources but amalgamate them with conventional materials such as textbooks and worksheets. This integrated strategy aims to harmonise technological progress with traditional educational practices. It enriches the student's educational experience and fosters diversity in instructional methods, accommodating the diverse needs and learning styles of students. This connection is evident in the use of QR codes to

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access digital content, providing students with straightforward access to a vast array of educational resources directly through their mobile devices. This strategy exemplifies a broader trend of leveraging technological advancements to create a more flexible and accessible educational environment that transcends temporal and spatial limitations.

Data suggest that learners are typically eager and actively involved in digital instruction. The utilisation of cell phones enables students to participate in the learning process with greater autonomy and interactivity. They access content and do activities both independently and collaboratively using electronic devices. The results demonstrate that, when properly integrated, technology can enhance learner autonomy and increase student engagement in instructional activities. The incorporation of digital literacy in EFL classes signifies a significant shift in educational culture. Technology improves the educational process and fosters a more transparent and cooperative relationship between instructors and students.

3.2. Evaluation Stage

The results indicate that evaluation is a crucial component of the digital learning cycle, as it measures the effectiveness of technology integration in Education. EFL teachers demonstrated diverse evaluation methodologies through interviews, encompassing both traditional and digital methods, as well as oral and written formats, and individual and communal feedback. These activities demonstrate a comprehensive understanding of the importance of assessment in digital literacy. The participant SRF conducted evaluations through classroom dialogues and online quizzes, taking into account the technology limitations of students. Activities were conducted in the computer laboratory where feasible; nevertheless, a flexible approach was preferred to ensure involvement from all students in the assessment. This approach posits that evaluation in a digital context includes both technology and accessibility.

In the meantime, Participant IN emphasised the use of oral and reflective assessment techniques. The lecturer encouraged pupils to provide feedback on the educational process and instructional methodologies using sticky notes. This

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approach illustrates a participatory evaluation culture and improves students' metacognitive awareness. The instructor assessed cognitive understanding and gathered feedback on their teaching methods and the students' educational experiences. Participant SN implemented an anonymous reflection technique, enabling students to express their understanding and views of the digital media used. This method strongly supports formative assessment practices and cultivates a safe environment for students to articulate their thoughts freely.

In contrast, Participant FS conducted a comprehensive assessment process that included diagnostic, formative (group work observation), and summative phases (digital posttests). Utilising Google Forms to document students' reflections shows a pedagogically advanced approach to implementing technology-based assessment. Participant HR established a task-focused evaluation technique requiring students to answer questions via smartphones and submit their projects digitally. This methodology is more pragmatic, taking into account temporal and technological limitations while maintaining a process-oriented evaluation framework focused on textual comprehension. The statistics demonstrate that educators utilised technology for both instructional purposes and assessment tools. Nonetheless, technical challenges, like device accessibility and students' digital literacy, remain significant issues. Furthermore, not all educators consistently employed assessment data to adjust subsequent instruction, while some showed and demonstrated a reflective awareness concerning the effectiveness of the utilised media.

The subsequent evidence supports the implementation of digital literacy-centred learning assessments in EFL classes.

Extract 11	*"Evaluation is typically conducted through discussions or the provision of questions related to the material in the video. I also use digital quizzes when possible. However, the challenge lies in the limitations of the students' devices. In certain situations, evaluation is conducted in the computer lab." (Interview with SRF, 13/01/2025).*
Extract 12	*Evaluation takes place after the learning session. I primarily use oral assessments. I not only evaluate the material, but I also ask students to reflect on the material and my teaching methods. I use sticky notes, and students are asked to write their opinions and attach them to the board." (Interview with IN, 14/01/2025).*

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Extract 13	*"After the lesson, I usually conduct reflections. I assess whether the media used was effective based on the students' responses in the class. I also provide some questions for the students to write on paper without including their names so that they can express their impressions and understanding honestly." (Interview with SN, 16/01/2025).*
Extract 14	*"I evaluate three stages. First, a diagnostic evaluation is conducted at the beginning of the lesson to assess the student's condition, such as inquiring about their well-being or whether they have eaten. Second, evaluation is conducted when students work in groups to observe their teamwork and collaboration. Third, evaluation through a posttest to ensure that the learning objectives have been achieved. I use Google Forms and Kahoot for pre-tests and posttests." (Interview with FS, 17/01/2025).*
Extract 15	*Evaluation is usually conducted at the end of the lesson. Due to time constraints, I often assign tasks to students, such as five questions. Students often choose to take photos of their answers and send them. These evaluation tasks usually require students to identify concepts, social functions, or the structure of specific texts, such as discussion texts. The evaluation is carried out in the form of assignments that also utilise the students' smartphones." (Interview with HR, 17/01/2025).*
Extract 16	*"The type of evaluation employed by teachers following the classroom learning process is reflected in their instructional tools (such as lesson plans and teaching modules). These evaluations are documented in digital and conventional formats within the instructional materials." (Document analysis, 2025)*

The observational data highlighted the techniques utilised by teachers in assessing digital literacy instruction in EFL classrooms.

Table 2. The observation findings on the evaluation

Participant	Observation Date	Class	Findings
Participant SRF	January-May 2025	XII IPA-1	*Reflection through oral questions Kahoot app for tests, Paper tests, use of a projector, and smartphones for evaluation.*
Participant HR	January-May 2025	XII IPA-2	*Students answer questions using smartphones, with paper tests distributed by the teacher.*
Participant IN	January-May (2025).	XI-2	*Reflection During lessons, students provide feedback verbally. Paper tests used for evaluation*

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Participant	Observation Date	Class	Findings
Participant SN	January-May (2025).	X-1	*Students respond verbally to the teacher's questions.*
Participant FS	January-May (2025).	XI-6	*Alternating between oral and Kahoot-based questions for student interaction and feedback.*

Classroom observations regarding the implementation of assessments for digital literacy training in EFL contexts reveal distinct patterns that demonstrate the diverse assessment approaches employed by educators. These evaluations employ several procedures and methodologies, incorporating both modern and conventional approaches. Observational data indicate that some educators have included digital technologies, such as Kahoot, to enhance interactive assessments. This was particularly evident in the twelfth-grade science class (XII IPA-1), when participant SRF utilised the Kahoot app for evaluation and oral reflection. This technology enhanced student engagement in the learning process and offered prompt feedback, fostering a more dynamic teaching environment. In contrast, in the eleventh-grade class XI-2, as observed with participant IN, while students offered verbal reflections, evaluations predominantly depended on paper-based tests, indicating that the integration of technology in assessment methods has not been uniformly implemented throughout classrooms.

In a distinct twelfth-grade science class (XII IPA-2), the participant allowed students to use smartphones to respond to queries using Google Forms, exemplifying an effort to incorporate digital literacy into the evaluation. The continued reliance on paper-based examinations in this context signifies a hybrid approach that combines digital and traditional methods. In class XI-6, participant FS demonstrates various strategies to maintain student engagement by alternating between spoken questions and Kahoot-based evaluations. Despite the use of digital technologies such as Kahoot and cellphones in evaluation methodologies, the majority of educators continue to rely primarily on paper-based testing. This indicates that although there are emerging efforts to integrate digital literacy into

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classroom evaluations, such incorporation remains in a developmental phase and has not yet been fully optimised in the observed classrooms.

Based on these findings, the following figure illustrates a taxonomy identifying the application of digital literacy in EFL learning settings.

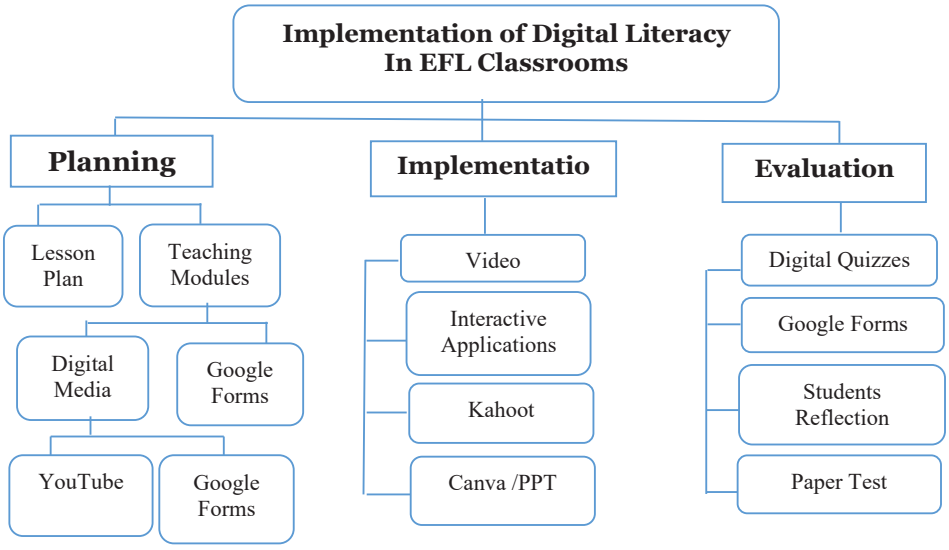

Figure 2. Taxonomy of digital literacy implementation in EFL classrooms

The incorporation of digital literacy in EFL classrooms has demonstrated significant progress across all stages of instructional planning, execution, and assessment. Educators have initiated a methodical yet flexible approach to planning digital media use, integrating various digital technologies to enhance student engagement. During the deployment phase, many media applications and pedagogical innovations exhibit adaptive responses to classroom conditions. Nonetheless, technical obstacles, architectural limitations, and disparities in students' digital literacy skills persist as substantial impediments to the successful implementation of this effort. To achieve a more efficient and equitable integration of digital literacy, it is essential to improve teacher professional development, upgrade digital infrastructure, and implement a more cohesive, technology-oriented evaluation system.

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3.3. Culture Theme

Culture themes illustrate the collective attitudes, values, practices, and contextual modifications that define the learning environment and the implementation of digital literacy in the classroom. The following are rising cultural themes based on research findings:

3.3.1. The Culture of Pedagogical Adaptation through Digital Media

The culture theme highlights how EFL educators adapt to and respond to digital transformation by incorporating popular platforms—such as YouTube, Canva, Google Forms, and Kahoot—into their instructional planning and classroom activities. Educators do not simply utilise technology; they adapt it in culturally significant ways that align with their teaching philosophies and resource limitations. The findings demonstrate that educators intentionally choose resources that are contextually accessible and pedagogically pertinent, highlighting a culture of adaptive digital engagement grounded in pragmatism, familiarity, and creativity. This culture asserts that digital literacy in practice transcends tools, focusing instead on recontextualising pedagogical practices to align with the evolving standards of advancing technology.

3.3.2. The Culture of Negotiated Participation and Classroom Inclusion

The digital literacy practices in the observed EFL classes are influenced by a collective dedication to equitable participation, notwithstanding infrastructure inequalities. Educators employ adaptable strategies—such as allowing assessments on smartphones, incorporating collaborative group work, and utilising oral reflections—to address diverse levels of digital accessibility and learning preferences. This subject illustrates a classroom culture in which involvement is negotiated rather than presumed. Educators facilitate the intersection between digital ambitions and students' actual experiences, cultivating a learning atmosphere that prioritises collaboration, inclusivity, and equity. The digital classroom transforms into a social

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environment where cultural ideals of unity and mutual adaptation are fundamental to teaching practices.

3.3.3. The Culture of Reflective and Situated Digital Assessment

The third theme focuses on how assessment in digital literacy instruction surpasses standardised testing by including reflective, formative, and multimodal evaluation techniques. Educators integrate student input via oral discussions, sticky notes, anonymous reflections, and digital platforms such as Google Forms and Kahoot. These evaluation approaches are fundamentally rooted in the social and emotional dynamics of the classroom, reflecting a culture that prioritises student voice, metacognition, and the emotional nuances of learning. Evaluation is regarded not merely as a metric of accomplishment but as a cultural practice that validates student agency, cultivates trust, and situates learning within the quotidian lives of both educators and learners.

3.4. Discussion

This ethnographic study demonstrates that implementing digital literacy in EFL classrooms involves a systematic process consisting of three pedagogical phases: planning, execution, and evaluation. Each phase demonstrates varying levels of integration, innovation, and responsiveness to contextual factors, including institutional policies, teacher readiness, and infrastructural constraints. This framework corresponds with the instructional design frameworks suggested by Reigeluth (1999), which highlight iterative and adaptable phases in technology-enhanced training. Hornberger (2005) introduced the concept of implementation space in language education, referring to the physical and social environments in which language learning occurs. Strategies, implementations, and assessments influence these environments, dictating students' prospects for language acquisition and application (Wedin, 2021). Hornberger's implementation idea underscores that plans constitute the design language of educational programs, actions actualise instructional methodologies, and evaluation measures students' competency and effectiveness. These components work together to generate opportunities for enhancing and advancing language skills (Hornberger, 2005).

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During the planning phase, educators in this study demonstrated an increasing awareness of the importance of incorporating digital resources into their lesson plans and instructional modules. Incorporating YouTube videos, Google Forms, and digital presentations demonstrates a proactive approach to selecting digital resources that align with educational objectives. This corresponds with the SAMR model (Puentedura, 2006), namely the substitution and augmentation tiers, wherein digital tools enhance conventional jobs. Nevertheless, the findings indicate that most educators are at the augmentation stage, employing technology to enhance instructional efficiency rather than effecting transformation.

During the implementation phase, digital literacy was implemented through video-based learning, interactive platforms such as Kahoot, and content creation using Canva. Educators employed multimedia presentations, digital assessments, and classroom dialogues to enhance student participation. These approaches align with Mayer's (2009) cognitive theory of multimedia learning, which emphasises the effectiveness of visual and auditory stimuli in enhancing student understanding. Incorporating YouTube and animated films to contextualise English lessons signifies a pedagogical shift towards multimodal learning, where content delivery surpasses static text and incorporates multiple sensory modalities. Notwithstanding these advancements, the methodology remains predominantly teacher-centred, with technology serving primarily as a conduit rather than an enabling environment for student-driven inquiry or collaborative learning. This observation aligns with Warschauer's (2006) assessment that technology integration in language classrooms often perpetuates conventional transmission methods of instruction in many developing countries. A more revolutionary implementation would engage students in producing digital content, conducting peer reviews, or participating in online forums —activities that were infrequently observed in the study.

The evaluation stage primarily utilised Google Forms and quizzes to assess student learning outcomes. This indicates a first shift towards data-driven training, yet the evaluation methods are confined to summative assessment without formative feedback or adaptive learning pathways. This aligns with the conclusions of Ertmer and Ottenbreit-Leftwich (2010), who argue that successful technology integration

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requires access, motivation, and a pedagogical shift. In addition, infrastructure limitations such as restricted internet access, inadequate digital devices, and unreliable classroom connectivity presented substantial obstacles to consistent and equitable execution. These issues emphasise Pelgrum's (2001) results, which identified infrastructure as a primary obstacle to the utilisation of technology in Education worldwide, particularly in rural areas.

Digital literacy-based instruction has a significant impact on EFL learning. Technological advancements have profoundly altered language education by offering sophisticated systems for learning management, autonomous and adaptable learning, collaborative instruction, and the acquisition of target languages using socio-constructivist methodologies (Alakrash & Razak, 2021). Implementing digital literacy-based instruction yields beneficial outcomes while simultaneously presenting various hurdles. Educators faced three principal challenges in executing digital literacy-focused Education: limited access to essential materials and digital tools, and a deficiency in digital literacy competencies among instructors and learners (Purmayanti, 2022). Moreover, implementing digital literacy must be meticulously planned and performed (Hamida, 2021). In summary, although incorporating digital literacy-focused Education in the examined EFL classrooms has significantly advanced the integration of digital tools throughout instructional phases, it still exists at a nascent stage of innovation. Schools must invest in teacher training, technical infrastructure, and regulatory frameworks that facilitate experimentation and collaborative digital pedagogy to achieve more transformative and student-centred outcomes.

Furthermore, this ethnographic study clarified that digital literacy in Indonesian EFL classrooms transcends mere access or competency; it is a contextualised cultural practice influenced by pedagogical principles, infrastructural conditions, and communal learning standards. The culture of pedagogical adaptation demonstrates how educators systematically incorporate accessible platforms, such as YouTube, Canva, and Google Forms, to align with curricular objectives and local constraints. This discovery corroborates Warschauer's (2006) assertion that the utilisation of technology in language classes is frequently influenced by sociocultural contexts rather than being exclusively driven by policy or infrastructure.

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This study highlights adaptable innovation in under-resourced settings, in contrast to prior studies that concentrated on urban or well-resourced schools (e.g., Cabellos et al., 2023). The culture of negotiated participation and classroom inclusion demonstrates instructors' dedication to equity by modifying practices to facilitate students' access to devices and varying digital competencies. These inclusive practices reflect the conclusions of Vallès-Peris and Domènech (2023), who emphasise the significance of digital citizenship as a democratic and pragmatic involvement in Education. The third part, reflective and contextual assessment, signifies a transition from standardised testing to emotionally attuned and student-focused evaluation techniques. This aligns with Buchan et al. (2024), who emphasize the importance of formative, multimodal assessments in promoting digital literacy among adolescents. These themes together contest ethnocentric theories of digital literacy, advocating for a sociocultural approach that perceives digital competence as integrated within local practices, beliefs, and limitations (Gee, 2015). Consequently, digital literacy in rural Indonesian EFL classrooms emerges as a negotiated and dynamic cultural process, underscoring the necessity for pedagogical frameworks that emphasise contextual adaptation and cultural relevance.

This study concludes that digital literacy implementation in EFL classrooms is contextually constructed, requiring adaptive pedagogical strategies, infrastructural support, and reflective assessments to overcome challenges and foster inclusive, culturally relevant learning practices. Findings confirm that digital literacy-based instruction progresses through planning, implementation, and evaluation, highlighting teachers' creativity, infrastructural challenges, and sociocultural negotiation as decisive factors shaping equitable and transformative English language learning experiences. Moreover, Digital literacy in Indonesian EFL classrooms is not merely technical skill acquisition but a negotiated cultural practice, reflecting teachers' agency, institutional constraints, and students' participation in shaping meaningful and inclusive learning environments.

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4. Conclusion

This ethnographic study demonstrates that integrating digital literacy in Indonesian EFL classrooms is a dynamic, contextually situated process comprising three essential pedagogical phases: planning, implementation, and evaluation. Educators have shown enhanced competence and purposefulness in incorporating digital tools—such as YouTube, Google Forms, Canva, and Kahoot—into their instructional design and delivery. The study revealed that although digital resources were consistently integrated into lesson design, obstacles such as infrastructure constraints, disparate digital competences, and device availability affected the extent of integration. During the implementation phase, educators demonstrated creative practices and adaptive ways to improve student engagement; yet, the instructional paradigm largely remained teacher-centred. Evaluation tactics integrated digital and conventional methodologies, utilising formative and reflective assessments to enhance student engagement.

Notwithstanding ongoing problems, the results highlight an emerging culture of instructional adaptability, negotiated inclusion, and contextualised digital evaluation. The research confirms that digital literacy in EFL education transcends mere access to technology; it is a socially constructed practice influenced by local values, resource availability, and instructional agency. Investment in teacher training, infrastructure, and pedagogical innovation is needed to promote a more transformative application of digital tools. These findings enhance the comprehension of digital literacy as a cultural and educational phenomenon within EFL contexts. Teachers should design flexible, context-sensitive digital pedagogy, balancing available tools with students' competencies, while fostering inclusivity, creativity, and reflective assessment practices to enhance learner engagement and equitable digital participation. Policymakers must prioritize equitable digital infrastructure, sustained teacher training, and supportive policies that bridge rural-urban disparities, ensuring that digital literacy integration in EFL classrooms aligns with contextual realities and long-term development. Further, Curriculum developers should integrate digital literacy explicitly across EFL curricula, embedding multimodal learning, formative digital assessment, and sociocultural

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adaptability to prepare students for dynamic digital citizenship in linguistically diverse contexts.

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Conflicts of Interest

The authors declare no conflict of interest

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