

INVESTIGATING THE CHALLENGES OF DIGITAL COMPETENCE AMONG ENGLISH TEACHERS IN METRO LAMPUNG JUNIOR HIGH SCHOOLS

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Received: January 2026	Accepted: May 2026	Published: May 2026
DOI: https://doi.org/10.33650.pjp.v13i1.14665		

Abstract : *This study aims to investigate the problem of Digital Competence 2.2 of English instructors of Metro Lampung junior high school. This qualitative study used semi-structured interviews with 20 English teachers from public and private junior high schools in urban, semi-urban and rural areas. Participants were purposefully sampled to represent a variety of teaching scenarios. The five DigComp 2.2 competence areas: Information & Data Literacy, Communication & Collaboration, Digital Content Creation, Safety, and Problem were used to analyze data using theme analysis. Solving-Triangulation, member checking, and peer debriefing were used to establish trustworthiness. The results suggest teachers confront different barriers in the DigComp areas. Teachers are challenged in information and data literacy with search methods, information verification, and digital file management. Basic messaging apps are used more for communication and cooperation than pedagogically rich collaborative systems. The biggest issues teachers have included lack of confidence in designing digital materials, understanding copyright rules, and adapting multimedia resources. Teachers are less aware of data security, cyber hygiene, and digital well-being.*

Keywords : Digital Competence; English Language Teachers; Teacher Digital Literacy.

Abstrak : *Penelitian ini bertujuan untuk mengetahui masalah Kompetensi Digital 2.2 instruktur Bahasa Inggris SMP Metro Lampung. Penelitian kualitatif ini menggunakan wawancara semi terstruktur terhadap 20 guru bahasa Inggris dari SMP negeri dan swasta di perkotaan, semi perkotaan, dan pedesaan. Peserta sengaja dijadikan sampel untuk mewakili berbagai skenario pengajaran. Lima bidang kompetensi DigComp 2.2: Literasi Informasi & Data, Komunikasi & Kolaborasi, Pembuatan Konten Digital, Keamanan, dan Masalah digunakan untuk menganalisis data menggunakan analisis tema. Penyelesaian- Triangulasi, pengecekan anggota, dan pembekalan sejawat digunakan untuk membangun kepercayaan. Hasilnya menunjukkan bahwa para guru menghadapi berbagai hambatan di bidang DigComp. Guru ditantang dalam literasi informasi dan data dengan metode pencarian, verifikasi informasi, dan pengelolaan file digital. Aplikasi perpesanan dasar lebih banyak digunakan untuk komunikasi dan kerja sama dibandingkan sistem kolaboratif yang kaya akan pedagogi. Masalah terbesar yang dihadapi guru adalah kurangnya rasa percaya diri dalam merancang materi digital, memahami aturan hak cipta, dan mengadaptasi sumber daya multimedia. Guru kurang menyadari keamanan data, kebersihan dunia maya, dan kesejahteraan digital.*

Kata Kunci : Kompetensi Digital; Guru Bahasa Inggris; Literasi Digital Guru.

INTRODUCTION

The rapid digital transformation in education has drastically reshaped pedagogical frameworks, classroom practices, and teacher professional expectations across the globe. The integration of digital technologies is no longer optional; rather, it has become a central requirement for effective teaching, learning, and assessment processes (Alenezi et al., 2023; Bitar & Davidovich, 2024; Mohamed Hashim et al., 2022; Timotheou et al., 2023). As educational systems transition toward technology-enhanced learning environments, the ability of teachers to operate confidently, critically, and responsibly within digital ecosystems has emerged as a pivotal determinant of instructional quality. Digital competence, therefore, has become a foundational component of teachers' professional competence, influencing their pedagogical decision-making, classroom practices, and engagement with learners (Danzan et al., 2025; Garcia-Sampedro et al., 2024; Morales-Cevallos et al., 2025). The accelerating pace of digital transformation in education has compelled scholars and practitioners to refine conceptualizations of teacher competence to explicitly include digital dimensions (Ilomäki et al., 2016; Redecker & Punie, 2017; Saidi & Hussein, 2024). Digital competence is no longer an optional adjunct to pedagogical skill; rather, it has become a core professional requirement that underpins teachers' capacity to design learning, engage learners, assess learning digitally, and safeguard learners' wellbeing in online environments (Syahid et al., 2026; Van Audenhove et al., 2024). For English language teaching (ELT), which traditionally emphasizes communicative interaction and multimodal input, digital competence also creates opportunities and demands that are specific to language pedagogy (Golonka et al., 2014; Kahfi et al., 2021; Shadiev & Wang, 2022).

The Digital Competence Framework for Citizens (DigComp), most recently updated to DigComp 2.2, provides one of the most comprehensive and internationally recognized models for conceptualizing digital skills (Garavaglia et al., 2022; Guitert et al., 2021). DigComp 2.2 articulates digital competence across five domains information and data literacy, communication and collaboration, digital content creation, safety, and problem solving, offering detailed descriptors that aid teachers, policymakers, and institutions in evaluating digital readiness and identifying competence gaps (Carretero et al., 2017; Milana et al., 2025; Suhono et al., 2025). Digital competence has been defined in multiple, sometimes overlapping ways across disciplines. Broadly, it denotes a composite of technical skills, cognitive strategies, socio-emotional practices, and ethical awareness that enable an individual to use digital technologies effectively, safely, and critically for personal, social, educational, or professional purposes (Ilomäki et al., 2016; Redecker & Punie, 2017; Wei et al., 2025). Conceptualizations emphasize that digital competence is not reducible to

technical literacy alone; rather, it is a socio-technical competence that incorporates information literacy, communication and collaboration, content creation, safety (including privacy and digital wellbeing), and problem solving (Guitert et al., 2021; Redecker & Punie, 2017)

In teacher education literature, digital competence is frequently nested within broader frameworks of teacher professional competence. Tondeur et al. (2017) and Tan (2023) emphasize the interplay between pedagogical knowledge and technological knowledge, echoing the TPACK conceptualization. However, while TPACK frames how technology integrates with content and pedagogy, frameworks like DigComp offer a fine-grained mapping of the different domains of competence required in digitally mediated contexts (Van Audenhove et al., 2024). Scholars argue that an effective teacher stance requires both domain-specific digital practices (e.g., using corpora or language apps in ELT) and transversal competencies (K. S. & Batta, 2024; Kiryakova & Kozhuharova, 2024; Klimova et al., 2023; Quoc Tran et al., 2023). Although DigComp has been widely adopted in European policy discourses, its relevance has increasingly extended to non-European educational contexts, including Southeast Asia, where digital integration is progressing but remains uneven due to infrastructural constraints, socio-economic disparities, and varied institutional capacities.

Within Indonesia, the urgency to strengthen digital competence among teachers has intensified following nationwide reforms that emphasize technology-mediated learning, such as the Merdeka Belajar policy and the expansion of digital learning platforms supported by the Ministry of Education, Culture, Research, and Technology. Despite these initiatives, research suggests that many Indonesian teachers continue to face challenges in achieving comprehensive digital competence, including limited pedagogical mastery of digital tools, insufficient training opportunities, and varying degrees of digital literacy (Rahmawati et al., 2025; Reksiana et al., 2024; Robandi et al., 2025; Rustandi et al., 2024). These challenges are particularly pronounced in English language teaching (ELT), where digital technologies are essential for supporting multimodal input, authentic language exposure, communicative interaction, and differentiated learning (Auernhammer et al., 2025; Golonka et al., 2014; Shadiev & Wang, 2022; Shadiev & Yang, 2020).

The province of Lampung presents a compelling context for examining digital competence in ELT due to its diverse socio-economic composition, its mix of urban and rural schools, and its ongoing efforts to strengthen educational quality. While some schools have made significant strides in adopting digital tools, others continue to struggle with infrastructure limitations, digital inequality, and limited teacher empowerment. Previous studies in Lampung have explored teachers' digital literacy and ICT integration in broad

terms, but systematic investigations aligned specifically with DigComp 2.2 remain scarce. Moreover, little is known about the unique challenges encountered by junior high school (SMP) English teachers, especially in metro city who play a critical role in preparing students for increasingly digital learning trajectories.

Understanding the challenges teachers face in meeting DigComp 2.2 standards is essential for designing targeted professional development programs, guiding policy interventions, and informing school-level support mechanisms (Falloon, 2020; Fernández-Batanero et al., 2022; Gisbert Cervera & Lázaro Cantabrana, 2015; Olofsson et al., 2020). Without a clear diagnosis of these challenges, efforts to integrate digital competence into ELT are likely to be fragmented, inconsistent, and misaligned with teachers' actual needs. Therefore, empirical research that situates DigComp 2.2 within the local realities of English teachers in Metro Lampung's junior high schools is urgently needed.

In response to this research gap, the present study aims to investigate the challenges of digital competence (DigComp 2.2) among English teachers in Metro Lampung junior high schools. Specifically, it seeks to identify the barriers teachers face across DigComp's five domains, explore contextual factors that shape digital competence development, and analyze how these challenges influence instructional practices in ELT classrooms. By focusing on a regionally significant yet underexplored educational context, this study contributes to the global discourse on teacher digital competence while offering evidence-based insights relevant to Indonesian policymakers, school administrators, and teacher-training institutions. Ultimately, the findings are expected to inform a more strategic, context-sensitive approach to strengthening digital competence among English teachers in Indonesia and beyond.

METHOD

This study employed a qualitative descriptive design to investigate the challenges of digital competence experienced by English teachers in junior high schools in Metro Lampung, Indonesia. A qualitative approach was selected because it enables an in-depth exploration of teachers' experiences, perceptions, and contextual realities in using digital technologies aspects that cannot be comprehensively captured through quantitative methods (Creswell & Cheryl N. Poth, 2016). The study was conducted in four junior high schools representing urban, semi-urban, and rural settings to capture variations in infrastructure and socio-economic conditions that may influence the development of teachers' digital competence. Participants were selected through purposive sampling based on three criteria: they actively taught English in public junior high schools, had a minimum of two years of teaching experience, and had experience integrating digital technologies into classroom instruction. A total of 20 English teachers participated in the study, with diverse

backgrounds in teaching experience, certification status, school characteristics, and access to digital facilities. Prior to data collection, all participants received detailed information regarding the objectives of the study, procedures, confidentiality, and their right to withdraw at any stage without consequence.

Data were collected through semi-structured interviews, as this method provides flexibility for exploring participants' perspectives while allowing researchers to probe deeper into emerging issues during the conversation (Vaivio, 2012). The interview protocol was developed based on the five competence domains of the DigComp 2.2 framework: Information and Data Literacy, Communication and Collaboration, Digital Content Creation, Safety, and Problem Solving. These domains guided the development of 15 core interview questions designed to examine teachers' abilities to search and evaluate digital information, communicate, and collaborate through digital platforms, develop, and adapt digital learning resources, understand issues related to digital safety and privacy, and solve technical or pedagogical challenges associated with technology integration. To ensure the relevance, clarity, and content validity of the interview guide, the instrument was reviewed and validated by two senior lecturers with expertise in digital pedagogy.

The interview process was carried out over an eight-week period. Depending on participants' availability and accessibility, interviews were conducted either face-to-face at their respective schools or through video conferencing platforms. Each interview lasted approximately 45–70 minutes and was conducted in either English or Bahasa Indonesia according to participants' preferences to facilitate richer and more authentic responses. With participants' informed consent, all interviews were audio-recorded and subsequently transcribed verbatim. Interviews conducted in Bahasa Indonesia were translated into English during the transcription process while maintaining the original meaning, context, and expressions to preserve the authenticity of participants' perspectives.

The collected data were analyzed using the six-step thematic analysis procedure proposed by Braun and Clarke (2006), consisting of familiarization with the data, generation of initial codes, searching for themes, reviewing themes, defining and naming themes, and producing the final report. The coding process combined deductive and inductive approaches. Deductive coding was guided by the five domains of the DigComp 2.2 framework, while inductive coding allowed additional themes to emerge from participants' experiences that were not explicitly represented within the framework. This hybrid analytical strategy strengthened both theoretical consistency and contextual sensitivity. To enhance the trustworthiness of the findings, two researchers independently coded 20% of the interview transcripts to establish intercoder reliability. Any discrepancies in coding were

discussed until consensus was achieved, and the refined coding framework was subsequently applied to analyze the entire dataset.

RESULT AND DISCUSSION

1. Results

This section presents the findings derived from semi-structured interviews with 20 English teachers in junior high schools across Metro Lampung . Data analysis was organized according to the five domains of DigComp 2.2. Within each domain, themes and subthemes that frequently emerged from participants' accounts are described in detail, supported by verbatim excerpts.

a) Information and Data Literacy

The interview findings revealed that information and data literacy remain one of the most challenging dimensions of digital competence among English teachers. Although all participants regularly used digital technologies to prepare teaching materials and support classroom activities, their ability to search, evaluate, and manage digital information varied considerably. Three recurring patterns emerged from the interviews. First, teachers relied on simple and familiar search strategies when locating instructional resources. Second, many participants experienced uncertainty in evaluating the credibility of online information. Third, teachers reported difficulties in organizing and managing digital teaching materials that had accumulated over time.

Most participants explained that Google had become their primary source for searching lesson materials, worksheets, grammar explanations, videos, and other instructional resources. However, their search practices were generally limited to entering simple keywords and selecting information from the first few search results. Advanced search operators, filtering options, and more specific keyword combinations were rarely used. Teachers acknowledged that this approach was adopted because it was quick, familiar, and required little effort during lesson preparation. As one participant described:

"Usually, I just type the topic and click the first website that appears. I'm not really sure how to refine the search more precisely." (T4)

The interviews further showed that this searching habit was shared by almost all participants. Seventeen out of the twenty teachers admitted that they seldom compared learning materials from multiple websites before using them in the classroom. Instead, they tended to revisit websites that had previously provided useful materials. Several participants explained that limited preparation time encouraged them to prioritize speed and convenience rather than conducting a

broad search for alternative resources. Consequently, instructional materials were often selected based on familiarity instead of a systematic search process.

Besides limitations in searching for information, participants also described difficulties in evaluating the reliability and accuracy of digital resources. Teachers frequently encountered different explanations of grammar rules, vocabulary usage, or reading materials across websites but were often uncertain about which source should be trusted. Rather than verifying information through multiple references or authoritative educational sources, many participants relied on personal judgment or continued using websites they had accessed before. One teacher explained this challenge by stating:

"Sometimes the material is different from the textbook, but I cannot judge which one is more accurate." (T11)

Several participants also mentioned that evaluating online information had become increasingly difficult because educational materials were now available from numerous websites, blogs, social media platforms, and AI-assisted applications. Although these resources provided abundant teaching materials, teachers felt that distinguishing accurate information from less reliable content required skills that many of them had not yet fully developed. As a result, uncertainty in selecting appropriate learning resources remained a common experience among participants.

Another challenge identified through the interviews concerned the management of digital teaching resources. Participants explained that they had accumulated numerous lesson plans, presentation slides, worksheets, videos, assessment files, and teaching documents over several years of teaching. However, many admitted that these resources were stored without a consistent organizational system. Files were often saved in different folders, multiple storage devices, or cloud services without standardized naming conventions, making them difficult to retrieve when needed during lesson preparation or classroom instruction. One participant commented:

"My laptop is full of random folders. Sometimes I cannot find the lesson plan when I need it in class." (T9)

The difficulty in managing digital files appeared to be more common among teachers with longer teaching experience. Several senior teachers explained that their transition from paper-based teaching materials to digital resources occurred gradually over many years, resulting in large collections of files that were not systematically organized. In contrast, younger teachers generally reported using cloud storage and more structured folder systems, although they still experienced occasional difficulties in locating previously created materials. Regardless of teaching experience, participants agreed that ineffective file organization often increased preparation time

and occasionally disrupted classroom activities when required resources could not be located immediately.

Overall, the findings indicate that English teachers have integrated digital resources into their daily teaching practices and demonstrate confidence in accessing online materials. Nevertheless, the interviews consistently revealed three interconnected challenges within the Information and Data Literacy domain: limited information-searching strategies, uncertainty in evaluating the credibility of digital resources, and ineffective management of digital teaching materials. These patterns emerged across participants from different schools and teaching backgrounds, suggesting that information and data literacy remains an important area for further development in teachers' digital competence.

b) Communication and Collaboration

The interview findings revealed that communication and collaboration represented another significant dimension of digital competence experienced by English teachers. Although digital communication had become an integral part of daily instructional activities, its implementation remained largely administrative rather than pedagogical. Teachers commonly used digital platforms to distribute announcements, assignments, and learning materials, while collaborative learning through digital technologies was implemented only to a limited extent. The analysis further identified three major categories characterizing teachers' experiences: limited pedagogical use of digital communication, challenges in facilitating digital collaboration, and limited mastery of Learning Management Systems (LMS). The coding results are summarized in Table 1.

Table 1: Communication and Collaboration Challenges among English Teachers

Interview / Observation Data	Description	Code
<i>"WhatsApp is enough for me. I rarely use Google Classroom or others because they require more steps, and students often forget passwords." (T6)</i>	Teachers primarily relied on WhatsApp for classroom communication because it was considered simple and familiar.	Limited Pedagogical Digital Communication
Most participants used digital platforms only to send homework, announcements, attendance information, and examination schedules.	Digital communication focused on information delivery rather than interactive learning.	Administrative Communication Practices
<i>"When I ask them to collaborate using Google Docs, many students don't know how to open or edit it." (T13)</i>	Students experienced difficulties participating in collaborative digital activities.	Challenges in Digital Collaboration

Teachers preferred conventional group discussions because online collaboration was often interrupted by technical problems and unequal participation.	Face-to-face collaboration was considered more manageable than digital collaboration.	Limited Collaborative Learning Implementation
<i>"Google Classroom looks complicated to me. I only understand how to upload assignments, not the other tools."</i> (T1)	Teachers only mastered basic LMS features while advanced functions remained underutilized.	Limited LMS Mastery
Teachers reported unstable internet access and limited student devices as barriers to implementing LMS-based learning.	Contextual constraints reduced the use of institutional digital platforms.	Technological and Infrastructure Constraints

Table 1 illustrates that communication and collaboration challenges extended beyond teachers' ability to operate digital platforms. The findings demonstrate that communication technologies were mainly utilized to facilitate routine classroom administration, while more interactive and collaborative digital learning practices remained relatively limited.

First, limited pedagogical digital communication emerged as the dominant pattern across participants. Interview data indicate that WhatsApp served as the primary communication platform because it was already familiar to teachers, students, and parents. Most participants explained that the application was easy to access, required minimal technical skills, and functioned effectively even with limited internet connectivity. Consequently, teachers relied heavily on WhatsApp to communicate classroom information throughout the academic year.

Second, administrative communication practices characterized the way teachers interacted with students through digital technologies. Rather than encouraging discussion or collaborative learning, digital communication was generally used to distribute assignments, remind students about homework, announce examination schedules, or provide attendance information. Only a small number of participants reported using digital communication to facilitate continuous learning interactions or reflective discussions outside the classroom.

Third, challenges in digital collaboration became another recurring finding. Participants explained that collaborative activities using shared digital platforms were difficult to implement because many students lacked sufficient digital skills to operate applications such as Google Docs or other collaborative tools. Teachers frequently

encountered situations in which students were unable to access shared documents, edit files simultaneously, or complete collaborative online tasks independently.

Fourth, limited collaborative learning implementation reflected teachers' responses to these challenges. Several participants explained that they eventually preferred conventional face-to-face group work because it allowed them to monitor students' participation more easily. Teachers also noted that digital collaboration was often disrupted by unstable internet connections, unequal student participation, and varying levels of digital literacy among learners. These conditions reduced teachers' confidence in implementing collaborative digital learning activities on a regular basis.

Fifth, limited LMS mastery also emerged from the interview data. Although most teachers were familiar with Learning Management Systems such as Google Classroom or Moodle, only a few participants reported using these platforms regularly. Teachers generally limited their use to uploading learning materials, distributing assignments, and recording attendance. More advanced features, including discussion forums, online quizzes, peer assessment, learning analytics, and collaborative assignments—were rarely explored because participants considered them difficult to operate.

Sixth, technological and infrastructure constraints further influenced teachers' communication and collaboration practices. Participants working in schools with unstable internet connectivity explained that digital learning activities frequently had to be simplified because students experienced difficulties accessing online platforms. Several teachers also reported that not all students possessed personal digital devices capable of supporting multiple educational applications. As a result, teachers often selected communication platforms that required lower bandwidth and simpler operational procedures.

Overall, the findings indicate that digital communication has become an established component of English teachers' instructional practice. However, its implementation remains predominantly administrative, while collaborative learning through digital technologies is still constrained by teachers' digital competence, students' technological readiness, and the availability of supporting infrastructure. These findings demonstrate that communication and collaboration continue to represent important areas for the further development of teachers' digital competence.

c) Digital Content Creation

The interview findings revealed that digital content creation remains one of the most demanding aspects of digital competence among English teachers. Although participants regularly utilized digital learning materials in their instructional practices, most relied on existing online resources rather than developing original content. Teachers acknowledged the importance of producing engaging digital learning materials; however, they experienced various challenges in designing

instructional media, modifying existing resources, and understanding ethical aspects related to copyright and digital ownership. The thematic analysis generated three major categories describing these experiences: low confidence in developing digital learning materials, limited ability to modify digital resources, and insufficient awareness of copyright and licensing practices. The coding results are presented in Table 2.

Table 2: Digital Content Creation Challenges among English Teachers

Interview / Observation Data	Description	Code
<i>"I know Canva, but only the simple templates. I cannot make something more interactive."</i> (T7)	Teachers used digital design applications at a basic level without exploring interactive features.	Limited Digital Content Design Skills
Several participants explained that creating digital learning materials required considerable time and technical expertise.	Teachers lacked confidence in producing original digital instructional resources.	Low Confidence in Content Development
<i>"I want to edit YouTube videos for my class, but I don't know which application to use. Usually, I just send the link."</i> (T15)	Teachers experienced difficulties modifying existing digital learning resources.	Limited Digital Resource Adaptation
Most participants preferred downloading ready-made worksheets, presentations, and videos instead of customizing them.	Existing digital resources were used without substantial modification.	Dependence on Ready-Made Materials
<i>"I never check the license. If it is online, I think it is okay to download and use."</i> (T2)	Teachers had limited understanding of copyright regulations and digital licensing.	Low Copyright Awareness
Attribution and licensing considerations were rarely included when using online learning resources.	Ethical aspects of digital content use received limited attention.	Limited Digital Content Ethics

Table 2 demonstrates that the challenges associated with digital content creation extended beyond technical skills. Teachers encountered difficulties throughout the process of designing, adapting, and ethically utilizing digital instructional resources. These findings indicate that digital content creation remained largely dependent on available online materials rather than on teachers' own creative production.

First, limited digital content design skills emerged as the most frequently identified challenge. Participants explained that they were familiar with several

educational applications, including Canva, Quizizz, Wordwall, and Microsoft PowerPoint. Nevertheless, their use of these applications was generally restricted to basic functions such as selecting templates, inserting text, or adjusting simple visual elements. Interactive features that could enhance student engagement were rarely utilized because teachers felt they lacked sufficient technical knowledge.

Second, low confidence in content development was consistently reported by participants. Teachers explained that producing original digital learning materials required creativity, technical competence, and additional preparation time. Several participants perceived digital content creation as a specialized skill that demanded experience beyond their current level of expertise. Consequently, they often chose existing online resources instead of developing their own instructional media from the beginning.

Third, limited digital resource adaptation became another recurring finding. Interview data revealed that participants frequently downloaded worksheets, presentation slides, videos, and learning activities from educational websites or social media platforms. However, only a few teachers modified these resources to suit their students' learning needs. Many participants admitted that they were unfamiliar with software for editing videos, redesigning interactive presentations, or adapting multimedia content according to different levels of English proficiency.

Fourth, dependence on ready-made materials reflected teachers' everyday instructional practices. Participants explained that existing digital resources were considered practical because they reduced preparation time and were readily available on various educational platforms. Rather than customizing learning materials, teachers commonly shared downloaded presentations, online worksheets, or video links directly with students. This approach was particularly common during periods of heavy teaching workloads when lesson preparation time was limited.

Fifth, low copyright awareness emerged as an important finding within this domain. Most participants acknowledged that they had never received formal guidance regarding copyright regulations, open educational resources, or digital licensing. Consequently, teachers generally assumed that instructional materials available on the internet could be freely downloaded, modified, and distributed for classroom purposes without considering legal or ethical implications.

Sixth, limited digital content ethics also characterized participants' experiences. Interview data showed that attribution of original authors, verification of licensing status, and acknowledgement of copyrighted materials were rarely considered when teachers prepared digital learning resources. Although participants recognized the importance of respecting intellectual property after discussing the issue during interviews, they admitted that ethical aspects of digital content creation had not yet become part of their routine instructional practices.

Thus, the findings indicate that English teachers actively integrate digital learning resources into classroom instruction but remain more comfortable using existing materials than creating new digital content independently. The challenges identified in this domain encompass technical competence, creative confidence, resource adaptation, and ethical awareness, suggesting that digital content creation continues to represent an important area for the development of teachers' professional digital competence.

2. Discussion

The findings of this study demonstrate that English teachers' digital competence extends beyond the ability to operate digital technologies and is strongly influenced by their capacity to critically access, evaluate, create, and manage digital resources within authentic teaching contexts. Although the participants reported frequent use of digital technologies in their daily instructional practices, the results reveal that their competence remains uneven across the five DigComp 2.2 domains. Teachers generally exhibited confidence in performing routine digital tasks, such as searching for instructional materials or communicating with students through familiar platforms (Cabero-Almenara et al., 2021; Ghafouri et al., 2024). However, more advanced competencies involving critical information evaluation, collaborative digital pedagogy, content creation, cybersecurity awareness, and technology-supported problem solving were less consistently demonstrated. These findings reinforce the argument that digital competence should be understood as a multidimensional professional capability rather than a collection of isolated technical skills.

The challenges identified in information and data literacy indicate that teachers' digital practices remain largely operational rather than strategic. Participants commonly relied on familiar search engines and previously accessed websites when preparing instructional materials, while the credibility of online information was often determined through personal experience instead of systematic verification (Kakogianni et al., 2025; Xie et al., 2025; Yaseen et al., 2025). This tendency reflects a practical response to limited preparation time and the overwhelming volume of digital information available to teachers. Within the DigComp 2.2 framework, however, information literacy encompasses not only the ability to locate digital resources but also the competence to critically evaluate their reliability, relevance, and pedagogical appropriateness (Shadiev & Wang, 2022; Stockwell, 2024). Previous studies have similarly reported that teachers frequently demonstrate confidence in accessing digital information while encountering greater difficulty when required to assess the quality of online resources or organize digital knowledge effectively (Smestad et al., 2023; Revuelta-Domínguez et al., 2022). For English language teaching, these competencies are particularly important because

authentic texts, videos, grammar references, and AI-generated learning materials require careful evaluation before being integrated into classroom instruction. The findings therefore suggest that strengthening teachers' critical information literacy should become a priority within professional development initiatives.

The findings also reveal that digital communication has been widely adopted in schools, yet its educational potential remains underutilized. Teachers predominantly employed digital platforms to distribute announcements, assignments, and learning materials, while opportunities for collaborative learning and interactive communication were comparatively limited (Eşki et al., 2025; Kerimbayeva et al., 2024; Musliadi et al., 2024; Singh et al., 2022). This pattern suggests that digital technologies continue to function primarily as administrative tools rather than as environments that support collaborative knowledge construction. DigComp 2.2 emphasizes that communication and collaboration involve active participation in digital communities, collaborative problem solving, and meaningful interaction through technology. The limited use of collaborative platforms observed in this study appears to be associated not only with teachers' technological confidence but also with students' digital readiness, institutional infrastructure, and classroom management considerations. Similar conclusions have been drawn in previous studies, which argue that successful digital collaboration depends on the interaction between teachers' pedagogical competence, technological resources, and supportive learning environments rather than technology availability alone. These findings imply that future professional development should integrate collaborative instructional design with technology training so that digital communication can contribute more effectively to language learning and student engagement.

Another important finding concerns teachers' limited confidence in creating original digital learning content. Although participants routinely incorporated digital materials into classroom instruction, most preferred adapting or directly using existing online resources instead of developing their own instructional media. This reliance on ready-made materials appears to reflect both limited technical expertise and the practical demands of teachers' daily workloads. DigComp 2.2 conceptualizes digital content creation as a creative and pedagogical process involving the design, adaptation, and ethical use of digital resources (Karakainen & Saikkonen, 2021; Saikkonen & Karakainen, 2021). Accordingly, the ability to create learning materials should not be interpreted solely as technical proficiency but also as evidence of teachers' capacity to transform curriculum objectives into meaningful digital learning experiences. Previous research has similarly indicated that teachers often feel confident using digital technologies while expressing lower confidence in multimedia production, interactive

instructional design, and copyright management. The present findings therefore highlight the importance of professional learning opportunities that integrate instructional design, multimedia development, and digital ethics to strengthen teachers' creative competence in English language teaching.

The findings further demonstrate that digital competence cannot be separated from issues of digital safety and problem solving. Teachers acknowledged the importance of protecting personal data, maintaining cybersecurity, and responding to technical difficulties during instruction; however, these competencies were often developed through individual experience rather than systematic professional training (Caena & Redecker, 2019; Miguel-Revilla et al., 2020; T. Q. Nguyen et al., 2024). As digital technologies become increasingly integrated into classroom instruction, teachers are expected not only to protect digital environments but also to respond adaptively when technological challenges emerge. DigComp 2.2 identifies these competencies as essential for ensuring sustainable and responsible technology integration (Pettersson, 2018; Rawal, 2024; Willermark et al., 2024). The persistence of technical and security-related challenges observed in this study therefore suggests that professional development programs should extend beyond technology operation by incorporating cybersecurity awareness, digital wellbeing, troubleshooting strategies, and adaptive technological decision-making. Such competencies are particularly important in English language teaching, where the increasing use of cloud-based applications, online assessment platforms, and generative artificial intelligence introduces new pedagogical opportunities alongside emerging ethical and technological risks.

Taken together, the findings suggest that the five DigComp 2.2 domains should not be viewed as independent dimensions but rather as interconnected components of teachers' professional digital competence. Difficulties in evaluating digital information influenced teachers' ability to create high-quality instructional materials, while limited digital communication skills reduced opportunities to implement collaborative learning activities (Guàrdia et al., 2023; L. A. T. Nguyen & Habók, 2024). Similarly, insufficient confidence in problem solving constrained teachers' willingness to experiment with innovative digital platforms. These interrelationships indicate that improving one dimension of digital competence is likely to strengthen other areas simultaneously, highlighting the need for integrated professional development rather than fragmented technology training.

This study offers several important contributions to the literature on teachers' digital competence. Unlike many previous studies that have relied primarily on quantitative self-assessment instruments, the present research provides an in-depth qualitative understanding of how English teachers experience digital competence

challenges in their everyday instructional practices. By employing the DigComp 2.2 framework as an analytical lens, the study demonstrates that teachers' digital competence is shaped not only by individual technological skills but also by pedagogical demands, institutional support, and contextual conditions. These findings contribute to extending DigComp 2.2 from a descriptive competency framework toward a more context-sensitive perspective that explains how digital competence is enacted within English language teaching.

Despite these contributions, several limitations should be acknowledged. The study involved English teachers from a limited number of junior high schools within one geographical context, which may restrict the transferability of the findings to other educational settings. In addition, the research relied primarily on semi-structured interviews without incorporating classroom observations or longitudinal data that could capture teachers' digital practices over time. Future studies are therefore encouraged to employ mixed-methods or longitudinal designs involving different educational levels, geographical regions, and subject areas to obtain a more comprehensive understanding of teachers' digital competence. Further research may also examine the effectiveness of targeted professional development programs designed around the DigComp 2.2 framework, particularly in response to the rapid integration of generative artificial intelligence and other emerging digital technologies in language education.

CONCLUSION

This study concludes that addressing digital competence requires recognizing teachers' emotional and cognitive load in digitally mediated environments. Digital wellbeing should be integrated into teacher support systems, ensuring that digital technologies enhance rather than overwhelm the teaching experience. In summary, this study reveals that English teachers in Lampung face multifaceted digital competence challenges across all DigComp 2.2 domains, shaped by individual skills, institutional constraints, and structural limitations. While the findings confirm global trends in teacher digital competence, they also highlight unique contextual barriers that require localized, systemic solutions. By addressing these challenges holistically, educational stakeholders can promote more equitable, effective, and sustainable digital pedagogy ultimately ensuring that digital transformation in education supports both teachers and learners in meaningful ways.

ACKNOWLEDGMENT

This research was supported by a research grant from Litapdimas, Ministry of Religious Affairs of the Republic of Indonesia under the Interdisciplinary Basic Research

Cluster 2025. The authors would like to express their sincere gratitude to the Ministry of Religious Affairs of the Republic of Indonesia for the trust and financial support provided.

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