JOLLT Journal of Languages and Language Teaching
https://e-journal.undikma.ac.id/index.php/jollt
Email: jollt@undikma.ac.id
DOI: https://doi.org/10.33394/jollt.v13i2.13338

April 2025. Vol.13, No.2
p-ISSN: 2338-0810
e-ISSN: 2621-1378
pp. 718-731

ENHANCING SECONDARY EDUCATION VIEWING SKILLS THROUGH DIFFERENTIATED MOBILE LEARNING: A LESSON LEARNED FROM TEACHERS' PERSPECTIVE

[1]*Intan Widora, [1]Muhamad Laudy Armanda, [1]Yuyun Yulia, [1]Agatha Christiyanti Manullang

[1]English Education Department, Faculty of Language, Arts, and Culture, Yogyakarta State University, DI Yogyakarta, Indonesia

*Corresponding Author Email: intanwidora.826@gmail.com

Article Info

Article History
Received: October 2024
Revised: December 2024
Published: April 2025

Keywords
21st century skills;
Differentiated learning;
Mobile learning;
Viewing skills;
Critical thinking skill;

Abstract

The proliferation of mobile learning has introduced a wide range of educational apps and flexible learning supports, extending education beyond traditional constraints of time and location. While mobile learning has proven effective for language acquisition, its potential extends into areas of digital engagement critical to modern education. Differentiated instruction, essential for personalized learning, can particularly benefit from mobile learning platforms, as demonstrated in this study's focus on viewing skills, a component highlighted in Indonesia's Independent Curriculum but less explored in research. This qualitative study reflects on English teachers' experiences using mobile learning to teach viewing skills to secondary students across Indonesia, utilizing interviews, focus groups, and digital artefacts to gather insights. Findings reveal that mobile learning facilitates differentiated instruction in viewing skills, fosters student motivation and critical thinking, enhances digital literacy, and requires teacher strategies to mitigate distractions. These results suggest that structured mobile learning integration can effectively promote differentiated learning across diverse skills, offering educators a flexible tool for skill-specific instruction.

How to cite: Widora, I., Armanda, M.L., Yulia, Y., & Manullang, A.C. (2025). Enhancing Secondary Education Viewing Skills Through Differentiated Mobile Learning: A Lesson Learned from Teachers' Perspective, *JOLLT Journal of Languages and Language Teaching*, 13(2), 718-731. DOI: https://doi.org/10.33394/jollt.v13i2.13338

INTRODUCTION

Perpective scaffolding teaching activities have an engagement plan for developing students' digital literacy by using the mobile learning and differentiated learning environments (Trede et al., 2019; Westman, 2018). Beyond that, it is required to consider language skills for supporting the differentiated instruction. According to Brown & Lee (2015), language skills have four domains such as listening, speaking, reading, and writing. However, in Indonesia's Independent Curriculum there are additional skills. They are viewing and presenting skills (BSKAP, 2024). It has been considered for its crucial relationship in 21st century skill, especially in critical viewing skills toward understanding level (Cash, 2017). Corpuz & Bullecer (2017) suggested that teaching viewing skills in a digital environment requires English language teachers to emphasize digital literacy. Viewing, in particular, is seen as a crucial skill to develop, and teachers should also acquire soft skills for effective instruction in this area (Brown & Lee, 2015).

This emphasis on viewing skills within a mobile learning framework aligns with the need for innovative approaches. They leverage technology to meet diverse learning needs (Tucker, 2020). Mobile learning offers a flexible, personalized platform where students can engage with digital content in ways that match their individual learning preferences, supporting

differentiated instruction (Trede et al., 2019). However, effectively incorporating viewing skills into mobile learning requires teachers not only to possess a deep understanding of digital tools but also to be skilled in selecting and adapting content that fosters critical viewing (Corpuz & Bullecer, 2017). To achieve this, teachers must be trained in both digital literacy and differentiated instruction, particularly given the challenges of addressing varied learning styles in a digital format (Abel et al., 2022).

However, teachers' competence and ability are the most important factors to create ideal instructional technology activities (Abel et al., 2022). It means that teachers need to be more familiar with learning and teaching technologically to face students as native digital, for example the use of mobile learning in the class (Biswas et al., 2018; Elverİcİ, 2023). Focusing on secondary education is especially relevant because students at this stage are developing critical analytical and interpretative skills, making viewing instruction essential for enhancing their understanding of complex visual media (Ningsih et al., 2022). However, limited training and resources often hinder teachers' efforts to effectively implement mobile learning for differentiated instruction. This study explores teachers' perspectives on using mobile learning to enhance viewing skills in secondary education, examining how they incorporate differentiated instruction and the challenges they face. By understanding these experiences, the research aims to offer valuable insights for digital tool integration in language education, with practical implications for policy, teacher training, and curriculum development.

Digital Literacy in Language Learning

Digital literacy encompasses the skills required to navigate, interpret, and critically assess information in digital formats, which is becoming increasingly essential in language learning (Harmer, 2015). Today's students, often considered "digital natives," interact with digital media on a daily basis, and as a result, language instruction must incorporate digital literacy to remain relevant and engaging (Abel et al., 2022). For language learners, digital literacy includes the abilities to process visual and multimedia content. The compentencies support comprehension, critical viewing, and communicative competence in a digital context (Brown & Lee, 2015; Corpuz & Bullecer, 2017).

Mobile learning has emerged as a powerful tool to foster digital literacy in language education, providing interactive and accessible resources that align with students' natural digital habits (Elverİcİ, 2023). By integrating digital literacy into language learning, educators can help students develop crucial skills for engaging with digital content and becoming proficient in interpreting complex multimedia information (Janiarta et al., 2023). Further, mobile learning, in particular, has emerged as a transformative tool to foster digital literacy in language education (Sheerah, 2022). By utilizing mobile tools that students already incorporate into their daily lives, educators can introduce interactive and accessible digital resources tailored to the needs of diverse learners. For example, language apps and online platforms offer features such as interactive visuals, quizzes, multimedia explanations, and instant feedback that reinforce understanding and engage students in active learning (Cranton, 2016; Gunawan et al., 2023). Mobile learning aligns seamlessly with students' natural digital habits, encouraging autonomy and flexibility in language practice.

Viewing skills in Modern Curriculum

Indonesia's education system is undergoing a rapid transformation, embracing visual thinking strategies through technology-driven language learning (Syahrir et al., 2024; Yuliani et al., 2023). This shift acknowledges students' digital fluency and dependence on visual aids for comprehension (Rofi'i et al., 2023). Consequently, educators are integrating critical viewing skills alongside the four other core language competences: listening, speaking, reading, and writing (Zhang, 2016). This focus aligns with the Independent Curriculum based on regulation of BSKAP No. 032 (2024), which incorporates viewing as a core element in English language

learning. While research on viewing skills remains limited, this study explores how students, by secondary level, can independently navigate various texts, including visual and digital content, to locate key information, evaluate its purpose, and draw inferences from both explicit and implicit details.

Today's classroom has dramatically changed. Following the curriculum development, it is needed to involve adaptive technology (Chabibie, 2023). Evolution in technology like one-to-one tablet or laptop initiatives, continued advancement in learning and brain theories, and expansion of knowledge are just a few of the demands educators to change the way they teach students (Cash, 2017). Considering the modern teaching method, there is also an increasing number of 'bring your own technology/device' (Garzón et al., 2023). Teachers and students are increasingly making use of the mobile tools that so many of us use in our ordinary lives outside the classroom (Harmer, 2015).

Challenges in Differentiated Instruction

In secondary education, the adoption of mobile learning is often hindered by challenges such as infrastructure issues, teachers' technological knowledge, and school policies (Ningsih et al., 2022). These barriers emphasize the need for robust support systems, including professional development and training for educators. In addition to modern methods, teachers should also consider the implementation of student-centeredness in differentiated instruction (Ann Tomlinson, 2014; Markoglou, 2019). Differentiated learning helps students improve their viewing skills using digital tools in various ways of learning (Corpuz & Bullecer, 2017; Zhang, 2016). Teachers use these activities to support students at different levels. Cash (2017), stated that differentiated learning consists of four parts such as environment, content, process, and product. Recent studies highlight the complex challenges teachers face in implementing a curriculum that effectively addresses students' varied learning styles through differentiated instruction (Sitorus et al., 2022). According to Westman (2018), differentiated instruction requires educators to adapt content, process, and assessments to meet individual learning needs, which can be demanding in a diverse classroom setting. In addition to customizing instructional materials, teachers encounter significant challenges in managing the classroom environment, especially when integrating mobile learning resources (Tucker, 2020).

Furthermore, classroom management becomes increasingly challenging as teachers strive to ensure equitable access to mobile learning tools tailored to support students with diverse learning preferences. Visual, auditory, and kinesthetic learners, for example, each benefit from different types of digital content, requiring careful planning and resource allocation to keep all students engaged (Benlaghrissi & L. Meriem, 2023). Additionally, teachers must address varying levels of digital literacy among students, as not all learners are equally proficient with mobile devices. These factors create extra layers of complexity, demanding that teachers balance differentiated instructional strategies with the practicalities of integrating technology in the classroom. Recent research underscores the importance of aligning mobile learning with differentiated instruction to meet the diverse needs of secondary school students. This alignment can enhance the effectiveness of mobile technology integration in language learning, ensuring that students receive personalized learning experiences (Dilekçi & Karatay, 2023; Corpuz & Bullecer, 2017).

Purpose of The Study

The recent studies found that the effectiveness and motivational benefits of mobile learning make it a valuable asset in language learning competences (Benlaghrissi & L.Meriem, 2023; Ishaq et al., 2020; Mortazavi et al., 2021; Valeeva et al., 2019; Yuliani et al., 2023). However, it is well known that traditional language learning focuses on listening, speaking, reading, and writing, but the digital age demands more (Dilekçi & Karatay, 2023). Viewing skills in using digital tools are becoming increasingly important aspects of language acquisition

(Trede et al., 2019; Victor Lim & Tan-Chia, 2023). This research breaks new ground by exploring the integration of mobile learning within differentiated instruction, with a specific focus on viewing skills which has limitations in existing studies.

This research addresses critical gaps in our understanding of effective language learning strategies in the 21st century. Firstly, it delves into the uncharted territory of integrating mobile learning with differentiated instruction, specifically focusing on its impact on viewing skills. This area has received limited research attention, and a deep analysis of mobile learning's potential. Secondly, the research tackles the ongoing challenge of accurately classifying students based on their learning styles within the viewing process. By exploring this disconnect and seeking best practices, the study aims to bridge the gap between learner categorization and the realities of classroom instruction. Finally, this research pioneers the use of mobile learning within differentiated viewing instruction for elements of English in the Independent curriculum. This innovative approach presents a novel pathway to enhance language acquisition in the digital age. In line with the purpose of ths study, answers to the following questions were sought in this study:

1. What is the impact of integrating mobile learning with differentiated instruction on viewing skills in language learning?
2. How can differentiated instruction classify students' learning styles in the viewing process?

RESEARCH METHOD

Research Design

This study belongs to a qualitative case study, as defined by (Creswell, 2012) a variation of ethnography in which the researcher investigates a constrained system based on extensive data collection. Meanwhile, Cohen et al. (2007) described a case study that is employed to demonstrate, examine, and interpret the uniqueness of individuals and situations through easily understandable narratives, investigate the complexity of behavior, enable researchers to take action and intervene, and portray reality in a manner that evokes a feeling of presence. The unit of analysis for this qualitative case study is based on English teachers' views on using mobile learning to teach viewing skills for secondary education.

Research Participants

To clarify, the study adopted a purposive sampling technique in order to intentionally select participants who possess specific characteristics relevant to the research questions. Thus, the researchers invited 10 English teachers voluntarily from some provinces of Indonesia that have adequate technology facilities for their students. This requirement is also bound to the fact that this study is limited to investigating some representative English teachers in Indonesian schools. This focus on schools with robust technological support highlights the study's scope, as it primarily represents settings where mobile learning is feasible, potentially limiting the findings' applicability to schools with less-developed infrastructure. Each teacher was assigned a pseudonym to maintain confidentiality throughout the study.

Instruments

The researchers performed some distinct instruments to answer the research aims. First, semi-structured interviews were designed to investigate teachers' experiences in implementing mobile learning for differentiated instruction, with specific questions to expose its influence on viewing skills. Second, focus group discussions provided a collaborative space for teachers to share and contrast their observations on students' viewing skills development, offering a range of perspectives and insights. Lastly, digital artifacts were analyzed to gain additional context on instructional practices and their direct impact on viewing skills.

There were three data collection steps in the study. The researchers begin with the navigation of the participants involved based on the criteria. Once 10 participants were identified, they were allocated to participate in online structured interviews via Zoom and focus group discussions online and offline. The questions protocol covered the following areas: background and experience, mobile learning, differentiated viewing learning, and reflection to future use. To ensure this, the final interview guidelines had already been validated by an English Language Education lecturer. Through this guidance, the researchers confirmed that it enabled them to obtain the English teachers' reflections.

Data Analysis

This study performed Thematic Analysis (TA) procedures to evaluate qualitative data systematically. Qualitative research requires the most precise interpretation of participant's ideas and actions. That is why thematic analysis is preferable, as it serves a more profound understanding of any issues. Given that this study included only 10 participants, themes were identified by recording and underlining them. The present study's data analysis employed six phases of thematic analysis proposed by Clarke & Braun (2022): familiarizing with the data, generating initial codes, searching for themes, reviewing themes, defining and naming themes, and reporting the results. The analysis processes were conducted manually, which is essential for capturing evolving reflections or context-dependent details. The manual process allowed researchers to interpret data within its specific context, making it easier to recognize and preserve the unique aspects of participants' perspectives. Nevertheless, the researchers tried to maintain the consistency of the themes and codes that accurately reflect the data by reviewing the data interpretation results with a lecturer simultaneously, reducing subjective bias and enhancing the objectivity of interpretations.

RESEARCH FINDINGS AND DISCUSSION

Research Findings

Regarding the study's objectives, this paper aims to capture the reflections of teachers from various provinces in Indonesia about how mobile learning combined with differentiated instruction affects viewing skills. Then, it tackles the challenge of accurately classifying students by their learning styles during the viewing process. To ensure a clear and comprehensive analysis, this research followed the Consolidated Criteria for Reporting Qualitative Research (COREQ) table. This guideline focuses on three key areas: the research participant, the research design, and the analysis and results. By adhering to these guidelines, the study aims to provide valuable information for both researchers and readers (Tong et al., 2007).

The findings will be displayed in a table summarizing the Thematic Analysis derived from interviews and focus group discussions. The protocol questions address six aspects: learning experiences, mobile learning, differentiated instruction, viewing skills, challenges in using mobile learning for viewing skills, and expected learning outcomes. The analysis involves 10 teachers from 5 different provinces in Indonesia. The detailed TA is presented in Table 1.

Table 1
Themes and codes of teachers' reflection experiences

Theme	Code				
	Province 1 (1)	**Province 2 (4)**	**Province 3 (1)**	**Province 4 (3)**	**Province 5 (1)**
Learning experiences	a. 11 years b. All grades in Junior High School	a. Average > 10 years b. All grades in Junior High School	a. 20 years b. All grades in Junior High School	a. Average > 9 years b. All grades in Junior High School	a. 5 years b. All grades in Junior High School

Learning experiences, on average, these educators have spent around a decade in teaching secondary level. However, experience varies from 5 to 20 years. Interestingly, all teachers teach across all junior high school grades. So, this can serve as a strong foundation for gathering information from the participants.

Table 2
Themes and Codes of Teachers' Reflection about Digital Literacy in Mobile Learning

Theme	Code				
	Province 1 (1)	**Province 2 (4)**	**Province 3 (1)**	**Province 4 (3)**	**Province 5 (1)**
Digital literacy in mobile learning	a. Use mobile phones b. Students install Quizizz, Wordwall, Canva, TikTok in their phones.	a. Use iPad, Android, and Chromeboo k. b. Use various platforms and applications c. Students install Canva, video editor, simple present tense apps, and sketches d. Teacher create interactive multimedia by themselves	a. Use mobile phone, laptop, or tablet b. Use digital books, videos, and slides. c. Teacher create interactive multimedia by using articulate storyline	a. Use Android, tablet, laptop, Chromebook b. Use various platforms and applications c. Students install Canva, Google Classroom d. Teachers also use digital games, Bing creator, Wordwall, and AI	a. Use Android b. Use various platform and applications c. Students install CapCut

Digital Literacy in Mobile Learning, the teachers utilize mobile learning in various ways within the digital literacy process. Some use mobile phones, while others employ iPads, Android devices, and Chromebooks. They integrate a range of platforms and applications such as Quizizz, Wordwall, Canva, TikTok, video editors, and so on. Teachers also create interactive multimedia, independently by using tools like Articulate Storyline and Smart Apps Creator. They leverage digital resources like books, videos, slides, Google Classroom, and CapCut, along with digital games and AI tools to enhance the learning experience of digital literacy.

Table 3
Themes and Codes of Teachers' Reflection about Differentiated Instruction

Theme	Code				
	Province 1 (1)	**Province 2 (4)**	**Province 3 (1)**	**Province 4 (3)**	**Province 5 (1)**
Differentiated Instruction	a. Conduct diagnostic test b. Set the lesson plan c. Use different method d. Promote learning styles and different capabilities	a. Conduct diagnostic test b. Implement content and product differentiation c. Easy use differentiated instruction as like their learning styles	a. Use one or combine differentiated learning instruction (content, process, product)	a. Use process and content differentiati on b. Use differentiate d instruction by giving different task for various levels	a. Conduct diagnostic test b. Use differentiat ed instruction (process, content, and product)

Differentiated Instruction, even though all participants wanted to use different learning methods with mobile learning, they didn't all do it the same way. Most agreed on giving diagnostic tests at the beginning to see what each student needed help with. Then, teachers could change the learning materials, activities, and how students showed what they learned (assignments) to fit each student's strengths and weaknesses. Some ideas included making appropriate lesson plans for various students, and using different methods to help students who learn in different ways. Other suggestions included using a combination of all three ways to change learning (content, process, product). This shows that the main idea is to give each student a personalized learning experience with mobile learning, and teachers can use different methods to do this for each student.

Table 4
Themes and Codes of Teachers' Reflection in Viewing Skills

Theme	Code				
	Province 1 (1)	**Province 2 (4)**	**Province 3 (1)**	**Province 4 (3)**	**Province 5 (1)**
Viewing skills	a. Easier assessment b. More simple learning	a. Trained well by using mobile learning b. Understand the material c. Increasing participation wi multimodal content	a. Mobile learning enhances viewing skills b. View in digital, critical thinking is increase	a. Mobile learning supports much in viewing skills b. Drill viewing skills by watch learning videos c. Viewing activity in beginning lesson as stimulus	a. Effective assessment b. Mobile learning enhances viewing skills

Viewing skills, the teachers' perspectives on how mobile learning impacts viewing skills are quite positive. Mobile learning facilitates easier and more effective assessment and simplifies viewing learning processes. It enhances viewing skills, increases critical thinking, and boosts participation through multimodal content. Viewing skills is improved through training with mobile learning tools, and using digital content to understand material better. Additionally, activities like watching learning videos and using viewing exercises at the beginning of lessons serve as effective stimuli. Overall, mobile learning significantly supports and drills viewing skills.

Table 5
Themes and Codes of Teachers' Reflection about the Challenges

Theme	Code				
	Province 1 (1)	**Province 2 (4)**	**Province 3 (1)**	**Province 4 (3)**	**Province 5 (1)**
Challenges in using mobile learning of differentiated viewing learning	a. Signal and quota b. External distraction c. Time management	a. Signal and quota b. External distraction c. Teachers' skill d. Time manageme nt	a. External distraction b. Type of gadget c. Unsupportive parents of students' screen time at school	a. Advance students need complex task b. External distraction c. Parents' expectation d. Student lose the process step because finish the task more instant e. Students have lack of motivation	a. Difficult to treat a specific application

Challenges in using mobile learning of differentiated viewing learning, while teachers see potential in mobile learning for developing viewing skills, they also acknowledge challenges in using. Technical limitations like weak internet signals, data limitations, time

management, unfamiliar applications, lack of motivation, and even the type of device students have can create obstacles. A major concern is external distractions that can hinder student focus. Moreover, unsupportive parents regarding students' screen time at school, the need for more complex tasks for advanced students, and high parental expectations complicate the learning process of viewing skills.

Table 6
Themes and Codes of Teachers' Reflection about the Benefits

Theme	Code				
	Province 1 (1)	**Province 2 (4)**	**Province 3 (1)**	**Province 4 (3)**	**Province 5 (1)**
Student Engagement	a. Mobile learning is interesting and familiar with students	a. Mobile learning is interesting, effective, and helpful b. Student can adjust their interest enthusiastic ally c. Fulfil learning objectives d. Students more active, interested, excited, and motivated e. Abundant resources	a. Students' motivation is powered up b. Students' talent appears (advanced skill in creating products) c. Mobile learning is effective d. Enhance students critically and creatively view, understand, and analyze e. Easy to solve problem f. Student more enthusiastic	a. Mobile learning is useful, effective, and good in viewing skills b. Student more enthusiastic c. Abundant resources d. Mobile learning motivates students	a. No limitation of time and places b. Mobile learning is interesting, effective, and useful to improve viewing skills

Student Engagement, mobile learning include its interesting and familiar nature for students, making it an effective and helpful educational tool. It allows students to adjust their interests enthusiastically and fulfills learning objectives while meeting the demands of the modern era. Mobile learning boosts student activity, interest, excitement, and motivation, providing abundant resources. It enhances students' critical and creative skills in viewing, understanding, analyzing content, and making problem-solving easier. Additionally, it reveals students' talents, particularly in creating products. Additionally, mobile learning seems well-suited for differentiated instruction. It also caters to students' individual interests and learning styles.

Table 7
Themes and Codes of Teachers' Reflection about Expected Learning

Theme	Code				
	Province 1 (1)	**Province 2 (4)**	**Province 3 (1)**	**Province 4 (3)**	**Province 5 (1)**
Expected learning	a. Mobile learning can be used in parallel class b. No distraction during learning process c. Use different methods d. Mobile	a. Mobile learning will be integrated with AI b. There is a complete application to avoid distraction and limitation of signal and quota	a. Mobile learning is available for AR and VR b. No distraction during learning process c. Mobile learning increase viewing skills	a. Mobile learning become effective tools to master English b. Mobile learning increase viewing skills c. Mobile learning is available to visualize the material like in a real (integrated with AI) d. Implement	a. Mobile learning provides directive feedback b. Mobile learning increase viewing skills c. Easy to deliver materials

Theme	Code				
	Province 1 (1)	**Province 2 (4)**	**Province 3 (1)**	**Province 4 (3)**	**Province 5 (1)**
	learning increase viewing skills	c. An application with open ended questions d. Students will be more independent in learning		differentiated instruction well	

Teachers expressed optimistic expectations regarding the future of mobile learning, particularly in its potential to enhance differentiated instruction in the teaching of viewing skills. They foresee significant improvements driven by advancements in educational technology, especially with the integration of artificial intelligence (AI). AI is expected to enable personalized learning experiences that cater to individual student needs, learning styles, and pace. Teachers also anticipate the development of mobile applications that can tackle current challenges, such as student distraction and inconsistent internet connectivity, thereby making mobile learning more reliable and effective. In addition to individual support, educators expect mobile learning tools to be used in parallel classes, offering consistent and simultaneous delivery of content across different groups. These tools are also projected to include features like open-ended questions and real-time directive feedback, which will assist teachers in implementing differentiated instruction more efficiently and meaningfully.

Another anticipated advancement is the integration of augmented reality (AR) and virtual reality (VR), which will offer students immersive and engaging learning experiences. These technologies are particularly valuable in language subjects like English, where visual and contextual understanding is essential. By visualizing concepts and content more realistically, students are expected to master complex material more easily. To summarize these findings, a summary table has been prepared to highlight key themes such as mobile learning integration, differentiated instruction, and improvements in viewing skills. This table provides a concise and organized overview of the major insights gathered, facilitating a clear understanding of how mobile learning can support more inclusive and effective language instruction.

Table 8
Summary Table

Theme	Key Findings
Learning Experiences	Teachers across provinces have extensive experience, typically over 10 years, covering all junior high grades.
Mobile Learning Usage	Teachers use diverse mobile tools and platforms (e.g., Quizizz, Canva, digital books), creating interactive multimedia to enhance engagement.
Differentiated Instruction	Instruction is customized through diagnostic tests and varied approaches (content, process, product), catering to students' learning styles.
Viewing skills	Mobile learning improves viewing skills by increasing engagement, critical thinking, and comprehension through multimodal content.
Challenges	Teachers face issues such as connectivity problems, time management, distractions, and lack of support from parents.
Benefits	Mobile learning boosts student motivation, engagement, and critical thinking, allowing for effective, flexible teaching.
Expected Learning Outcomes	Teachers anticipate that mobile learning, especially when integrated with differentiated instruction, will further improve viewing skills and enable adaptive, independent learning.

This summary table presents a quick reference for understanding how mobile learning and differentiated instruction are being used and their influence on student learning, especially viewing skills. Each theme provides essential insights relevant to the research questions on the integration of technology and instructional differentiation in language education. As the deep observation, teachers' digital artefact is also collected and analyzed as follows:

Table 9
Artefacts analysis

Digital artefact	Mobile Learning	Differentiated Instruction	Viewing skills	Integration
Lesson plan	Shows digital tools in learning process (Android, iPad, tablet, Chromebook, laptop, and projector)	Shows one of differentiated instructions such as content, process, or product. Sometimes, teachers combine two of them in the lesson plan	Through process and aim of learning, it shows that students are engaged in viewing skills	The lesson plans mostly integrate the use of mobile learning in several methods by using differentiated viewing learning.
Assignment	Shows the use of mobile learning in learning materials and do the task	Teachers let students to finish the specific task by their interest ways	Mostly the task or practice involve viewing skills through some devices	The assignment integrates all elements

Lesson plans use various digital tools and differentiated instruction (content, process, product) to engage students in viewing activities. Then, Assignments leverage mobile learning materials and tasks, allowing students choice based on their interests. This successful integration shows mobile learning can enhance differentiated instruction for better viewing skills development.

Discussion

The findings from the study offer significant insights into the role of mobile learning in enhancing viewing skills through differentiated instruction. First, mobile learning has proven to be effective in supporting differentiated viewing instruction. Teachers use a variety of digital tools, such as Quizizz, Canva, and video editors, to tailor learning materials, processes, and assignments based on students' individual needs. This personalization aligns with the study's key takeaway that mobile learning can accommodate different learning styles, making the viewing process more inclusive and engaging for students (Khoo & Churchill, 2013).

Furthermore, digital literacy in mobile learning has been found to increase student motivation and critical thinking (Agustina et al., 2022; Ahmad et al., 2020; Boari et al., 2023; Firipis et al., 2018). By utilizing multimodal content, such as videos and interactive multimedia, teachers engage students in viewing activities that encourage participation and deeper analysis (Khoo & Churchill, 2013; Zhang, 2016). This boost in motivation and critical thinking is consistent with the abstract's emphasis on mobile learning's potential to enrich the learning experience. Additionally, the use of various digital platforms enhances students' digital literacy (Irzawati, 2021). As students interact with tools like Google Classroom, AI applications, and digital games, they become more adept at navigating digital resources, which is crucial in today's digital age.

However, the study also highlights the challenges teachers face in implementing mobile learning, particularly in managing distractions and overcoming technical limitations (Ishaq et al., 2020; McQuiggan et al., 2015). One specific challenge in enhancing viewing skills through mobile learning was managing students' attention amidst various digital distractions, such as notifications or the temptation to browse unrelated content. Teachers addressed this by designing structured viewing activities that required active engagement and periodic checks to ensure focus. Additionally, incorporating interactive elements in videos, such as quizzes or

reflections within the content, helped maintain students' engagement and provided a way to assess their comprehension throughout the activity. Issues such as poor internet connectivity, unfamiliarity with certain apps, and external distractions can impede the effectiveness of mobile learning.

Besides that, the study reveals teachers' high expectations for the future of mobile learning. They envision the integration of advanced technologies like AI, augmented reality (AR), and virtual reality (VR) to further personalize the learning experience and overcome current challenges (Crompton et al., 2024; Zhou et al., 2023). These advancements could make mobile learning even more effective in promoting differentiated viewing instruction, as teachers anticipate more structured and engaging lessons that cater to students' individual interests and learning needs (McQuiggan et al., 2015; Zhou et al., 2023).

Lastly, in schools with limited technology access, adopting a resource-sharing model, such as rotating devices among classrooms or using mobile devices in pairs or groups, could make mobile learning more accessible. By considering these strategies, schools could make progress toward offering differentiated and digitally supported learning experiences despite resource constraints. Additionally, the findings suggest important implications for educational policy, particularly in terms of resource allocation for technology in schools. Policymakers might consider prioritizing investments in infrastructure that support mobile learning, as well as training programs that equip teachers with skills to manage digital tools effectively. For teacher training, a focus on differentiated instruction in digital contexts could help educators tailor content to students' varied learning styles, thus maximizing engagement and learning outcomes. In conclusion, while mobile learning presents challenges, its potential to enhance viewing skills, increase student motivation, and improve digital literacy is clear when integrated into structured lesson plans and supported by effective classroom management.

CONCLUSION

The findings of the study suggest that the integration of mobile learning with differentiated instruction is highly effective in enhancing key learner competencies such as motivation, creativity, critical thinking, and problem-solving. One of the most notable benefits was observed in the development of students' viewing skills, a language domain that has often been overlooked in traditional classroom instruction. Mobile learning offers a dynamic and flexible platform that allows educators to respond to diverse learning styles by tailoring content and instructional strategies to meet individual needs. This adaptability not only fosters student engagement but also promotes a more inclusive and supportive learning environment.

Despite the challenges of classifying students according to their learning styles—especially during viewing-based tasks—these can be mitigated through well-structured lesson plans that incorporate differentiated teaching strategies. Addressing issues such as time constraints and classroom distractions is also critical in optimizing the mobile learning experience. To enhance the effectiveness of instruction, teachers are encouraged to use multimodal resources (such as videos, animations, and audio-visual texts), collaborative group activities, and customized assignments that resonate with students' individual preferences and needs. Moreover, professional development for educators remains a crucial factor. Continuous training in the use of mobile learning tools and differentiated instruction techniques will better equip teachers to handle the complexities of tech-enhanced classrooms. Future research should explore the broader application of mobile learning to other core language skills such as listening, speaking, and writing. Additionally, developing user-friendly apps that promote resource sharing and support schools with limited technological infrastructure could help bridge the digital divide, ensuring that mobile learning becomes a practical and equitable solution in diverse educational contexts.

REFERENCES

Abel, V. R., Tondeur, J., & Sang, G. (2022). Teacher Perceptions about ICT Integration into Classroom Instruction. In *Education Sciences* (Vol. 12, Issue 9). MDPI. https://doi.org/10.3390/educsci12090609

Agustina, N., Mayuni, I., Iskandar, I., & Ratminingsih, N. M. (2022). Mobile Learning Application: Infusing Critical Thinking in the EFL Classroom. *Studies in English Language and Education*, *9*(2), 724–743. https://doi.org/10.24815/siele.v9i2.23476

Ahmad, M., Mansor, N. R., Sung, C. M., Rashid, R. A., Abdullah, N. A. C., Zakaria, R., & Azmy, S. N. M. S. (2020). Mobile Technology in Enhancing Students' Higher Order Thinking Skill. *Journal of Physics: Conference Series*, *1529*(4). https://doi.org/10.1088/1742-6596/1529/4/042057

Ann Tomlinson, C. (2014). *The Differentiated Classroom (2nd ed.)*. Alexandria: ASCD.

Benlaghrissi, H., & L.Meriem, O. (2023). *The Impact of Mobile-Assisted Language Learning on Developing EFL Learners' Vocabulary Knowledge*. *17*(22), 38–51. https://doi.org/10.3991/ijim.v17i22.41665

Biswas, S., Bhatibari, V. P. O.-, & Alipurduar, D. (2018). *Constructivism in Teacher Education : An Overview*. *6*(1), 1018–1022.

Boari, Y., Megavitry, R., Pattiasina, P. J., Ramdani, H. T., & Munandar, H. (2023). The Analytical of Effectiveness of Mobile Learning Media Usage in Train Student's Critical Thinking Skills. *Mudir: Jurnal Manajemen Pendidikan*, *5*(1), 172–177.

Braun, V., & Clarke, V. (2022). *Thematic Analysis*. UK: SAGE Publication.

Brown, H. D., & Lee, H. (2015). *Teaching by Principles: An Interactive Approach to Language Pedagogy* (4th ed.). New York: Pearson Education.

BSKAP, K. (2024). *Capaian Pembelajaran Pada PAUD, DIKDAS, DIKMEN pada Kurikulum Merdeka*. *021*.

Cash, R. M. (2017). *Advancing Differentiation: Thinking and Learning for 21st Century*. Minneapolis: Free Spirit Publishing.

Chabibie, M. H. (2023). *Digital Leadership: Masa Depan Pendidikan, Manajemen Data dan Indonesia 2045*. Indonesia: Parist.

Cohen, L., Manion, L., & Morrison, K. (2007). Research Methods in Education. *In Psychology* (Issue 1). New York: Taylor & Francis.

Corpuz, W., & Bullecer. (2017). Viewing skills: Understanding the word and the world. *Asia Pacific Journal of Multidisciplinary Research*, *5*(3), 87–94.

Cranton, P. (2016). *Understanding and promoting transformative learning: A guide to theory and practice* (3rd ed., Issue 2). USA: Stylus Publishing.

Creswell, J. W. (2012). *Educational Research: Planning, Conducting, and Evaluating Quantitative and Qualitative Research*. Boston: Pearson.

Crompton, H., Edmett, A., Ichaporia, N., & Burke, D. (2024). AI and English language teaching: Affordances and challenges. *British Journal of Educational Technology*, *September 2023*, 1–27. https://doi.org/10.1111/bjet.13460

Dilekçi, A., & Karatay, H. (2023). The effects of the 21st century skills curriculum on the development of students' creative thinking skills. *Thinking Skills and Creativity*, *47*(December 2022), 101229. https://doi.org/10.1016/j.tsc.2022.101229

Elverİcİ, S. E. (2023). *80 . Mobile assisted language learning : investigating English speaking performance and satisfaction Mobil destekli dil öğrenimi : İngilizce konuşma performansı ve memnuniyetin araştırılması*. *3*(14). https://doi.org/10.29000/rumelide.1379355

Firipis, A., Chandrasekaran, S., & Joordens, M. (2018). Influence of Critical Thinking on Creativity When Using Mobile Devices for Learning. *Asian Education Studies*, *3*(2), 40. https://doi.org/10.20849/aes.v3i2.366

Garzón, J., Lampropoulos, G., & Burgos, D. (2023). Effects of Mobile Learning in English

Language Learning: A Meta-Analysis and Research Synthesis. *Electronics (Switzerland)*, *12*(7). https://doi.org/10.3390/electronics12071595

Gunawan, S., Erlina, D., & Saputra, E. (2023). Teacher Perception on the Use of Quipper School Application in Teaching English. *Journal of Research on Language Education (JoRLE)*, *4*(1), 8–14.

Harmer, J. (2015). English Language Teaching. In *ELT Book*. Pearson. https://doi.org/10.1093/elt/XVIII.1.1

Irzawati, I. (2021). The utilization of digital platforms in online learning: EFL students' perspectives. *Indonesian EFL Journal*, *7*(2), 131–138. https://journal.uniku.ac.id/index.php/IEFLJ/article/view/4566

Ishaq, K., Rosdi, F., Azan, N., Zin, M., & Abid, A. (2020). *Usability and Design Issues of Mobile Assisted Language Learning Application*. *11*(6), 86–94.

Janiarta, P. A. K., Mahendrayana, G., Dewi, K. S., & Wiliastrini, N. L. A. (2023). *Mobile Assisted Language Learning in Blended Learning Context: How is it used and Students' Anxiety*. https://doi.org/10.4108/eai.6-10-2022.2327425

Khoo, K. Y., & Churchill, D. (2013). The framework of viewing and representing skills through digital text. *Educational Technology and Society*, *16*(3).

Markoglou, D. A. (2019). Differentiated Instruction and Pupil Motivation in Language Teaching. *European Journal of Education*, *2*(2). https://doi.org/10.26417/ejed-2019.v2i2-58

McQuiggan, S., Kosturko, L., McQuiggan, J., & Sabourin, J. (2015). *Mobile Learning: A handbook for Developers, Educators, and Learners* (Issue september 2016). Canada: John Wiley & Sons.

Mortazavi, M., Nasution, M. K. M., Abdolahzadeh, F., & Behroozi, M. (2021). *Sustainable Learning Environment by Mobile-Assisted Language Learning Methods on the Improvement of Productive and Receptive Foreign Language Skills : A Comparative Study for Asian Universities*. https://doi.org/10.3390/su13116328

Rofi'i, A., Sumartini, S., Susilo, S. V., & Tundreng, S. (2023). Designing Mobile Games Application for Digitalization of English Teaching and Learning Materials for Elementary School. *Indonesian Journal of Educational Research and Review*, *6*(3), 488–500. https://doi.org/10.23887/ijerr.v6i3.66234

Ningsih, S. K., Suherdi, D., & Purnawarman, P. (2022). Secondary School Teachers' Perceptions of Mobile Technology Adoption in English As a Foreign Language Learning: Trends and Practices. International Journal of Education and Practice, 10(2), 160–170. https://doi.org/10.18488/61.v10i2.3004

Sitorus, P., Simanullang, E. N., Manalu, A., Laia, I. S. A., Tumanggor, R. M., & Nainggolan, J. (2022). Effect of Differentiation Learning Strategies on Student Learning Results. *Jurnal Penelitian Pendidikan IPA*, *8*(6), 2654–2661. https://doi.org/10.29303/jppipa.v8i6.2114

Syahrir, S., Pujiriyanto, P., Musdalifa, M., & Fitri, S. (2024). The Implementation of Merdeka Curriculum to Realize Indonesia Golden Generation: A Systematic Literature Review. *AL-ISHLAH: Jurnal Pendidikan*, *16*(2), 1434–1450. https://doi.org/10.35445/alishlah.v16i2.4872

Tong, A., Sainsbury, P., & Craig, J. (2007). Consolidated criteria for reporting qualitative research (COREQ): A 32-item checklist for interviews and focus groups. *International Journal for Quality in Health Care*, *19*(6), 349–357. https://doi.org/10.1093/intqhc/mzm042

Trede, F., Markauskaite, L., Mcewen, C., & Macfarlane, S. (2019). *Understanding Teaching-Learning Practice Education for Practice in a Hybrid Space Enhancing Professional Learning with Mobile Technology*. Springer Nature Singapore. http://www.springer.com/series/14356

Tucker, C. R. (2020). Balance With Blended Learning: Partner With Your Students to Reimagine Learning and Reclaim Your Life. In Thousand Oaks, USA: Corwin.

Valeeva, N. G., Pavlova, E. B., Zakirova, Y. L., & Federation, R. (2019). *M-Learning in Teaching ESP: Case Study of Ecology Students*. *8*(4), 920–930. https://doi.org/10.13187/ejced.2019.4.920

Victor Lim, F., & Tan-Chia, L. (2023). Designing Learning for Multimodal Literacy: Teaching Viewing and Representing. In *Routledge*. Routledge. https://doi.org/10.4324/9781003258513

Westman, L. (2018). *Student-Driven Differentiation: 8 Steps to Harmonize Learning in the Classroom*. California: Corwin A SAGE Company.

Yuliani, S., Kaur, N., & Singh, A. K. . (2023). *M-Learning in ELT : Avenues and Challenges that Confront Teaching and Learning at Higher Education*. *7*(3), 377–392. https://doi.org/10.26858/ijole.v7i3.18983

Zhang, L. J. (2016). *Teaching Reading and Viewing to L2 Learners*. 127–141. https://doi.org/10.1007/978-3-319-38834-2

Zhou, Q., Hashim, H., & Sulaiman, N. A. (2023). Interactive Mobile Technologies. *International Journal of Interactive Mobile Technologies*, *17*(15), 20. https://doi.org/10.3991/ijim.v17i24.42019