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Research Article

Digital Tools in TESOL: An Ethnographic Investigation of Technology Use Among Japanese Senior High School Students

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Abstract

While there is increasing research on digital tools in education, few studies have examined how they might be used in TESOL in senior high school students in Japan. This ethnographic study aims to investigate how senior high school students in Japan use digital resources in English classes in the eikaiwa setting. The results show that although digital tools improve motivation and offer immediate feedback, they are not a complete substitute for traditional methods. Due to institutional and cultural learning expectations, students choose a hybrid approach, striking a balance between traditional methods and digital resources. Advanced linguistic growth is, however, constrained by issues like limited AI responses and a lack of adaptive scaffolding. The study emphasizes the necessity of digital tools integration that is pedagogically sound and compatible with cultural learning preferences and cognitive processes. Lastly, a well-rounded strategy that carefully combines digital and traditional approaches promotes a more successful and inclusive language learning environment. The study's findings have implications for eikaiwa administrators, curriculum designers, educators, and legislators, providing methods to improve the incorporation of digital resources in TESOL while taking into account the unique requirements of senior high school students in Japan.

Keywords: TESOL, teaching English, digital tools, ethnography, Japanese students, Japan

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Introduction

Digital tools have transformed the way students learn and engage with information in recent years, revolutionizing the area of education. Technology is becoming an essential part of teaching English all over the world because it enables teachers to design more dynamic, individualized, and engaging learning environments (Abdullaeva & Bafojonova, 2024). Virtual classrooms, multimedia materials, and language learning applications have redefined traditional teaching methods and made English accessible to learners across diverse contexts (Akkara, 2024). Digital tool integration in TESOL (Teaching English to Speakers of Other Languages) is commonly used, but its effects vary based on educational, social, and cultural factors, necessitating localized research to determine its efficacy.

The rapid digitalization of education throughout Asia has had a big impact on learning English, with nations like China (Wang et al., 2024), Singapore (Foong et al., 2024), and South Korea (Park & Kwon, 2024) setting the standard for incorporating advanced technologies into classrooms. Since English remains a key competence in the global workforce, Asian educators and policymakers view digital tools as crucial to preparing students for success (Judijanto

et al., 2024). Many areas still struggle with issues including unequal access to resources, cultural opposition to technological change, and disparities in teacher readiness, despite these advancements (Badiozaman et al., 2024). It is crucial to understand the unique context of Asian classrooms to customize TESOL strategies that suit the needs and learning preferences of the students.

The use of digital tools in English instruction has increased in Japan as a result of government programs like the "GIGA School Program," which gives students individual access to digital gadgets (Oyanagi, 2024). These initiatives show the country's dedication to improving English proficiency, but the traditional teacher-centered method and test-oriented educational system frequently prevent technology from reaching its full potential in the classroom. Examining the usage of digital technologies in this particular context is crucial because senior high school students, in particular, operate in a learning environment that strikes a balance between innovation and long-standing cultural customs.

The researchers' work as English teachers in Japan, specifically in eikaiwa or English conversation schools, has brought to light the advantages and disadvantages of incorporating digital resources into English instruction. Eikaiwa schools, in contrast to traditional educational settings, frequently prioritize conversational language instruction, offering a more adaptable and dynamic learning environment. However, we found that students' use of technology in these contexts varied greatly, depending on their comfort level with technology in general and their experience with digital tools in high school. The necessity to look into how Japanese senior high school students use digital tools in TESOL situations and what factors affect their efficacy was highlighted by these local experiences.

While there is increasing research on digital tools in education or senior high school students in eikaiwa setting (San Jose, 2025), few studies have examined how they might be used in TESOL in senior high school students in Japan. Additionally, there is a dearth of ethnographic research that documents the real-life experiences of teachers and students utilizing digital technologies for English language acquisition in eikaiwa contexts. By shedding more light on the integration of digital technologies into TESOL classrooms in Japanese eikaiwa, particularly from the perspectives of the students, this study seeks to bridge this knowledge gap.

This ethnographic study aims to investigate how senior high school students in Japan use digital resources in English classes in the eikaiwa setting. The specific goal of the study is to comprehend how technology (like mobile applications, games, social media, and AI-powered tools) influences students' involvement, learning experiences, and language acquisition. To shed light on the efficacy and cultural significance of incorporating technology into English language instruction, this study looks at how students behave, think, and interact with digital tools in their typical classroom setting. The results of this study have implications for curriculum designers, educators, and legislators, providing methods to improve the incorporation of digital resources in TESOL while taking into account the unique requirements of senior high school students in Japan.

Methodology

Research Design

This study used an ethnographic research methodology to investigate the utilization of digital tools in English classes by senior high school students in Japan. The use of ethnography in this study is appropriate since it provides a comprehensive, contextualized picture of how students behave, interact, and feel about digital learning tools in their natural settings. The intricacies of integrating technology into English language learning can be effectively captured through ethnography, which focuses on observing and analyzing lived experiences (Risku et al., 2022), in contrast to survey-based or experimental research. This study aims to offer a multifaceted perspective on the function of technology in students' English learning by going into their learning environments and examining how they interact with digital resources.

Participants

The participants of this study were a group of 15 to 20 Japanese senior high school students engaged in English conversation courses in eikaiwa in the school year 2024-2025. This small group was justified because ethnographic studies prioritize depth over breadth (Sarfo et al., 2021), focusing on rich, specific insights rather than statistical generalizability. Senior high school students are an important group to choose from because they are actively learning English in Japan's changing digital education environment. Purposive sampling was used to choose the participants, guaranteeing that they would be regularly exposed to digital resources in an eikaiwa-style English learning environment.

Instrument

This study utilized field observations, student interviews, and digital content analysis to collect extensive data. During English classes, field observations recorded how students behaved and interacted with digital resources. Students' opinions, difficulties, and attitudes regarding the use of technology in English language learning were recorded through semi-structured interviews. Digital artifacts such as student chat logs, learning platform usage, and multimedia assignments were included in the document analysis. A triangulated approach was established by using different instruments, which improved the findings' validity and depth.

Data Collection Procedure

The data collection process unfolded in three phases. The first phase, which was classroom observations were conducted over 35 weeks, observing how students interacted with digital tools in a natural setting. Observations were non-intrusive, allowing students to engage freely while their interactions were documented. The second phase, student Interviews, was conducted in small groups sessions, with open-ended questions about their experiences, preferences, and challenges with digital tools in English learning. The third phase, document collection, digital materials such as students' written reflections, chat logs, and lesson recordings were gathered to analyze how technology was used beyond classroom interactions. This multi-method approach allowed for a holistic understanding of technology use in students' English learning while ensuring that data were rich and contextually grounded.

Data Analysis

The Ethnographic Content Analysis (ECA) (Altheide, 1987; Tisdell et al., 2025) was employed to examine the collected data. Unlike traditional content analysis, ECA is flexible, iterative, and allows for reflexivity, making it ideal for ethnographic research. The following is the step-by-step data analysis procedure. The first step was data familiarization where field notes, interview transcripts, and digital content were reviewed thoroughly to identify emerging patterns. Then, open coding followed where initial themes were generated based on students' engagement, learning strategies, challenges, and cultural attitudes toward digital tools. The third step was constant comparison in which data were systematically compared across different sources (observations, interviews, and digital content) to refine themes and ensure consistency. The fourth step was contextual interpretation in which the findings were interpreted within the cultural and educational framework of Japan, considering social norms, institutional structures, and language learning traditions. The last step was thematic refinement where key themes were finalized and linked to broader discussions on TESOL and technology integration. ECA was appropriate for this study since it allowed not just for identifying trends in digital tool use in learning English but also for interpreting students' lived experiences in a meaningful way.

Data Trustworthiness

The validity and reliability of the findings were ensured by adopting the following strategies. First was triangulation (Morgan, 2024) where the researchers combined observations, interviews, and document analysis to cross-validate data. Second was member checking (Coleman, 2022) by sharing preliminary findings with participants to confirm accuracy and interpretation. Third is the thick description following the MIRACLE (meaningful, interpretative, relational, authentic, contextualized, linked, and emic) framework (Younas et al., 2023) by providing detailed contextual narratives to capture the depth and authenticity of students' experiences. Fourth is reflexivity (Alvesson et al., 2022) by acknowledging the researchers' role and potential biases to ensure that interpretations remain objective and data-driven. By employing these measures, the study established its credibility, transferability, dependability, and confirmability, ensuring robust and trustworthy findings.

Ethical Considerations

To ensure the safety and wellbeing of every participant, ethical guidelines were closely adhered to during the whole study. All participants and their guardians gave their informed consent before any data was collected. They received complete information on the purpose, procedures, and consequences-free withdrawal policy of the study. Students' identities were anonymized, and all gathered data were safely stored to preserve their privacy and confidentiality. Since participation in the study was completely optional, no student felt under pressure to participate. Before starting the research, permission from the Eikaiwa administration was also obtained. By following these ethical criteria, this study maintained high ethical standards, protected the rights of participants, and contributed significant knowledge to the field of TESOL and digital education research.

Results

The results of student interviews, field observations, and digital artifacts showed clear trends in how senior high school Japanese students used internet resources to learn English in the eikaiwa context. Despite being widely accessible and incorporated into lessons, the use of digital resources varied depending on the learning objectives, technological proficiency, and personal preferences of each student. Five major themes emerged from various data sources: engagement with digital learning resources; classroom interaction and digital media; challenges in digital tool utilization; cultural and institutional influences on digital learning; student preferences for digital and traditional learning methods.

Engagement with Digital Learning Resources

In eikaiwa classrooms, observations revealed that a large number of students actively used interactive language learning programs, especially those intended for enhancing vocabulary, pronunciation, and listening comprehension. There was widespread usage of digital tools like multimedia exercises, gamified vocabulary apps, and speech recognition software, and students often showed excitement while using these resources. Nevertheless, interviews and digital artifacts showed that some students still favored traditional learning resources like printed textbooks and notes, citing familiarity and convenience of use as the main justifications, even in the face of the availability of such tools.

Active Engagement with Interactive Language Tools

When using digital learning tools that offered instant feedback, students demonstrated high levels of engagement during observations in the classroom. Students used a speech recognition app to practice their pronunciation during one session. Depending on their results, students' reactions to the app's pronunciation grading ranged from joy to displeasure. One student yelled out: "Yes! I received 90%! That's better than the previous time." Another student who had trouble with some sounds made the following comment: "My 'th' sound is incorrect again, it says. I have no idea how to solve it." The student then made another attempt after the teacher advised on where to put the tongue. This feedback-practice cycle demonstrated how students actively used digital tools when they could observe tangible improvements.

In the same way, learners routinely repeated phrases several times in order to improve their accuracy score in pronunciation apps, according to digital artifacts like recorded practice sessions. Students talking about their accomplishments were also visible in chat logs from an online learning platform:

> Student A: "I finally got 85% on the speaking test! It was just 60% last time.
>
> Student B: "Nice! I still have trouble with 'r' and 'l' sounds. Do you have any tips?"
>
> Student A: "I watched a video about it. You should try slowing down first."
>
> These exchanges demonstrated how digital platforms empowered students to take charge of their learning.

Gamification and Motivation

Additionally, observations showed that students particularly enjoyed gamified activities like online tests and vocabulary-building applications. As students competed to achieve high scores during a vocabulary game session, one student made the following observation: "I like this game because it makes me remember words quickly. It's fun, and I don't feel like I'm studying." Another student mirrored this sentiment: "If I just read vocabulary from a book, I forget it. But if I play this game, I remember more words."

Digital artifacts, such as vocabulary app progress reports, demonstrated that students' word memory improved steadily over time when they used these platforms. One student discussed her experience in an interview: "When I study vocabulary in a notebook, I don't always review it. But this app reminds me to practice every day. And if I make a mistake, I can try again immediately." This instant feedback loop facilitated the persistent use of digital learning platforms.

Preference for Traditional Learning Materials

Despite the widespread use of digital tools, several students stated that they preferred traditional resources like notes and textbooks. In an interview, one student clarified: "I enjoy using my textbook since it allows me to take notes and underline significant passages. I can't do that easily with an app." Another student said: "I feel more comfortable using a notebook. When I write by hand, I remember better than when I just tap on a screen."

These claims were corroborated by observations, which showed that some students continued to consult their notebooks even in the presence of digital

resources. During a conversation, one student said: "I use my phone for listening practice, but for grammar, I always check my book. It's easier to understand." Digital artifacts also reflected these findings. Students talking about their study habits were captured in chat logs from an online study group:

Student A: "I use the app for listening, but for writing practice, I still use my notebook."

Student B: "Me too! I like digital tools, but sometimes I just want to write things down."

In general, students' use of digital learning platforms differed. Others favored traditional methods of learning, although many actively engaged in interactive exercises and gamified activities. According to the results, digital tools can effectively boost motivation and reinforce learning by providing instant feedback, but they cannot entirely replace traditional study techniques. Rather, it appears that students use a hybrid method, blending traditional and digital resources to fit their unique learning styles.

Classroom Interaction and Digital Media

In the eikaiwa classroom, digital media significantly improved speaking and listening exercises. Digital resources in the form of audio recordings, video-based courses, and interactive activities were utilized to contextualize English phrases in real-world contexts and teach new vocabulary. Observations in the classroom demonstrated that students reacted favorably to video-based instruction, especially when it included native speakers in natural dialogue. Digital media definitely improved comprehension, but it had limited effect on spontaneous conversation.

Engagement with Video-Based Lessons

Students were more engaged during video sessions that demonstrated real-world language use, according to observations. Students viewed a brief video of a customer and barista interacting in a café during one of the lessons. Following the video, they were asked to role-play the scenario and respond to comprehension questions. One student enthusiastically said throughout the exercise: "I like this video because it shows how people really talk in English. The pronunciation is clear, and I can see their expressions. It helps me understand the meaning better." An additional student added: "I usually watch English videos at home, but I don't always understand everything. In class, the teacher explains difficult words, so I learn more."

However, several students resisted when invited to have a free discussion based on the video. They used language they had learned from the film rather than creating their own statements. In the field journal, one observation noted:

"*Students were comfortable repeating lines from the video but struggled when asked to modify the conversation or respond spontaneously. Some students asked, 'Can I just say what they said in the video?' instead of creating new sentences.*"

AI-Driven Conversations vs. Human Interaction

Interviews revealed that despite the availability of digital interaction tools like speech recognition software and AI chatbots, students preferred to practice with human teachers or peers. A student clarified:

"I tried using an AI conversation app, but it feels strange. When I talk to a real person, I can see their reaction, and they can help me if I make a mistake. The app just gives a score, and sometimes it doesn't understand my pronunciation even when I say it correctly."

Another student expressed their annoyance at AI interactions' limitations:

"The chatbot only follows a script. If I say something different, it doesn't respond naturally. In real conversation, people react to what I say. That's why I prefer talking to my teacher or classmates."

Digital artifact chat logs corroborated these assertions as well. One student tried to reply imaginatively to an AI prompt during a mock AI discussion, but got an irrelevant response:

AI: "What is your favorite food?"

Student: "I like sushi, but I also enjoy trying new foods. Last week, I ate Thai curry for the first time."

AI: "Great! Sushi is a popular dish in Japan. Do you eat sushi often?"

The idea that AI-driven interactions were excessively stiff was strengthened when the student's attempt to expand the discussion was ignored. Another student considered this restriction:

"If I say something different from the expected answer, the AI doesn't understand. It's not like a real conversation where people react naturally."

Effectiveness of Digital Listening Activities

Although listening skills were improved more effectively by digital media, understanding levels varied according on the content's complexity. Video-

based comprehension exercises, especially those with subtitles, were usually deemed beneficial by students. One student made the following observation:

> *"When I listen to English without subtitles, it's too fast. But when I can read the words, I understand more. After watching with subtitles, I try again without them to see how much I remember."*

When listening tasks were too difficult for their level of ability, some students complained. One student repeatedly rewinded a listening exercise while being observed. In response to the question, they stated:

> *"The speaker talks too fast, and I don't know all the words. Even if I listen many times, I still don't understand everything."*

These difficulties were also confirmed in students' online discussion board as one student posted:

> *"I like using English videos, but sometimes I feel frustrated when I don't understand. I wish there were more videos with slow speech for practice."*

To sum up the classroom interaction and digital media theme, according to the findings, digital media can be a useful tool for building vocabulary and listening comprehension, especially when used in conjunction with video-based lessons that offer contextualized learning. Students still prefer human engagement to AI-driven conversations, therefore its influence on spontaneous conversation is still limited. The dynamics of real-life discussions, which call for spontaneous responses and involvement, are not entirely replicated by digital tools, even while they enhance formal practice.

Challenges in Digital Tool Utilization

Language Accessibility

Digital artifacts, student interviews, and classroom observations revealed a number of issues despite the benefits of digital resources. One recurring problem was that some students had trouble using applications that were based in English. Despite the rising usage of digital learning tools in Japan's educational system, many of the programs were not supported in Japanese, which made it more difficult for students who don't speak English well to use them efficiently. One student voiced his frustration in an interview:

> *"Sometimes, I don't understand the instructions in the app, and there is no translation option. I just keep tapping until I find the right button. If I don't understand a question, I just skip it. It's easier to use a textbook because I can check the meaning in Japanese."*

This worry was expressed by another student, who described how it impacted her educational experience:

> *"I like using apps for learning English, but some of them are too difficult. If the app explains something in English and I don't understand, I just memorize answers instead of really learning. When I use a textbook, my teacher can explain it in Japanese, but the app cannot."*

Observation records also showed this difficulty. A number of students paused before responding to multiple-choice questions during a vocabulary lesson that used a gamified language application. While some students chose their replies at random, others were seen searching for terms on their phones. One student acknowledged, when questioned about her decisions: *"I don't really understand the sentence, so I just guess. If I get it wrong, I try again, but I don't learn why I was wrong."*

Use of Complex Language

Students' tendency to use simple phrase forms when interacting digitally presented another major obstacle. Digital artifacts, including chat logs from online practice sessions, showed that instead of exploring with sophisticated grammatical forms, students frequently fell back on simple sentence structures. Some examples of a normal conversation in an AI-powered chat simulator would be:

Example 1:

AI: "What kind of movies do you like?"

Student: "I like action movies."

AI: "Why do you like them?"

Student: "They are exciting."

Example 2:

AI: "Tell me about your favorite food."

Student: "I like sushi."

AI: "How often do you eat sushi?"

Student: "Every weekend."

Example 3:

AI: "What will you do tomorrow?"

Student: "I will study."

AI: "Where will you study?"

Student: "At home."

These conversations show how students tend to use

straightforward sentence structures and offer little explanation in place of elaborating on their responses with specifics, justifications, or more intricate grammatical constructions.

On the other hand, students produced somewhat lengthier and more diversified responses when they participated in in-person speaking activities with their peers. One interviewee explained why he steered clear of complicated words when using digital tools: *"When I talk to a real person, I can explain more, and if I make a mistake, they understand. But in the app, if I use difficult grammar and it doesn't recognize my sentence, I feel like I failed. So I keep my sentences simple to get the correct response."*

This conclusion was corroborated by observations of speech recognition activities. Some students purposefully changed their pronunciation to fit what they thought the app would recognize when using a pronunciation app that asked them to repeat phrases. One pupil made the following observation: *"Sometimes, when I say a word naturally, the app says it's wrong. But when I say it like a robot, it marks it as correct. It's strange."*

Motivation and Engagement

Motivation and engagement presented another difficulty. Using digital tools was enjoyable for some students, but eventually became less interesting for others. A student said: *"At first, I liked using the app because it was new, but now it feels like a routine. I just click answers without thinking too much. Talking with my classmates is more fun."* As students' involvement in an online discussion forum declined over time, the digital artifact analysis revealed this drop in motivation. Later posts had shorter, less thorough answers, but in the initial weeks, students actively answered with complete phrases.

Furthermore, less tech-savvy students struggled to use several digital platforms, which caused them to become disengaged. In a field observation journal, it was noted:

"During today's lesson, a few students struggled to log into the online practice platform. Instead of asking for help, they waited until a classmate assisted them. Some students lost interest after the delay and did not complete the activity."

All things considered, the results point to the fact that although digital technologies offer worthwhile educational opportunities, they also pose problems with regard to language accessibility, promoting the use of complicated language, and engagement. Digital integration in TESOL classes could be enhanced in areas such as students' dependence on basic structures, challenges with English-only interfaces, and reductions in motivation.

Cultural and Institutional Influences on Digital Learning

One important finding was the influence of institutional structures and cultural norms on digital learning. Instead of engaging, self-paced digital experiences, many students linked learning English to traditional, structured classes. It was shown that when students received specific instruction from the teacher, they were more inclined to interact with digital tools than when they used them on their own. Responses from students during interviews further supported this, emphasizing the value of teacher-led instruction in their language learning process. Additionally, a review of student feedback documents revealed a preference for blended learning strategies, in which online resources enhanced rather than replaced traditional classroom instruction.

Observations in the Classroom

According to field observations, students were more inclined to interact with digital tools when they received clear instructor guidance as opposed to using them on their own. For instance, students engaged fully in a vocabulary lesson that used a gamified learning software when the instructor led the class by providing clarifications and assigning clear assignments. However, there were notable differences in the levels of involvement when students were provided with the same digital tool for independent study. While some students completed the tasks on their own, others paused or just followed the directions without really engaging with the content.

One noteworthy example was when a teacher used an AI-powered platform to introduce a listening comprehension exercise. Students seemed involved in the scheduled class period, repeating words and responding to comprehension questions. When urged to use the tool outside of class, some students acknowledged that they struggled to maintain their motivation in the absence of teacher guidance.

Interview Responses

Interviews also reaffirmed how crucial structured guidance is for digital learning. Several students stated that they believe teacher-led education is essential to successful language acquisition:

"I like using digital tools in class, but I don't always use them at home. In class, the teacher explains things and makes sure we use the tool correctly." (Student A, Interview)

"When the teacher uses a video or an online quiz, I can understand better. But if I have to study with an app alone, I don't know if I'm learning the right way." (Student B, Interview)

"I prefer studying with a teacher because they can answer my questions. Apps are helpful, but they are not the same as a real lesson." (Student C, Interview)

According to these statements, students preferred using digital tools in the controlled setting of a teacher-led classroom over using them as stand-alone learning materials, even though they were thought to be beneficial.

Digital Artifacts and Student Reflections

An examination of online discussion forum chat logs and student reflections revealed a preference for mixed learning strategies. Pupils often reported that while digital tools were useful when incorporated into class activities, they were less interesting when accessed on their own. For example, one student's reflection that was turned in said: "*Using online videos and quizzes helped me understand pronunciation and listening. But I think these are best when the teacher is there to explain more*." This sentiment was reflected by another student's remark in a class discussion forum: "*I like learning English with apps, but I also need textbooks and teacher explanations. The best way is to use both."* According to their reflections, students viewed digital technologies more as supplemental learning resources than as their main teaching strategies.

In general, students' involvement in digital learning was greatly influenced by institutional and cultural factors. Observations, interviews, and student reflections all demonstrated a preference for organized, teacher-led instruction versus self-directed digital learning. These results emphasize how crucial it is to integrate digital resources into blended learning settings so that students can gain from both interactive technology and traditional classroom instruction.

Student Preferences for Digital and Traditional Learning Methods

Several data sources revealed a mixed preference for traditional and digital learning approaches. Interview data showed that many students still preferred the structure and predictability of traditional learning materials, even when digital artifacts, including learning platform logs, demonstrated that students regularly participated in technology-based exercises. While some students pointed out how easy it was to study lessons at home using digital tools, others voiced concerns about screen fatigue and the absence of face-to-face interaction.

Observations in the Classroom

When digital learning activities were organized and incorporated into lessons, students actively participated, according to observations made in the classroom. For instance, students carefully followed the on-screen instructions and repeated lines during a listening exercise that used an AI-driven pronunciation software. However, large numbers of students chose the traditional method when presented with the option of filling out a digital worksheet or writing their responses in a real notebook. One observation was noted during an informal discussion:

"Students engage well with digital tools in class, especially for interactive activities, but when it comes to note-taking or completing exercises, many still prefer using their textbooks or notebooks."

In addition, many students chose the printed edition of the text when given the option to pick between an e-book and a printed copy during a reading comprehension session. One student stated: *"I like reading on paper because I can underline words and write notes. On a screen, it's harder to remember things."*

According to these findings, students frequently turned back to traditional resources for assignments requiring greater concentration and memory, even while they felt at ease utilizing digital tools for interactive and gamified activities.

Interview Responses

Student interviews confirmed the split preference for conventional and digital learning approaches. Although many students agreed that digital tools are useful, especially for revising material outside of class, they also voiced concerns about an excessive dependence on technology.

"I like using apps to practice vocabulary at home. It's easy to do on my phone, and I can review quickly." (Student J, Interview)

"I think online quizzes and listening exercises are helpful, but I don't like studying on a screen for too long. After a while, my eyes get tired." (Student L, Interview)

"In class, I prefer when the teacher explains things using the whiteboard instead of just showing a video. Videos are good, but sometimes I need more explanation." (Student P, Interview)

The statements above demonstrate how students loved the clarity and interaction of traditional classroom learning while still appreciating the accessibility of digital resources.

Digital Artifacts and Student Reflections

Analyses of digital artifacts, including student reflection journals and chat logs, supported these findings. Online discussion forum data showed that while students continued to use traditional study techniques to prepare for tests, they regularly used digital resources to review lectures. In a class discussion board, one student wrote: *"I use the vocabulary app every day, but before a test, I like to write words in my notebook to remember them better."* Another student, in a written reflection on learning strategies, stated: *"Digital exercises are fun, but I still need a real book to study. When I write things by hand, I remember them more."* It appears from these statements that students regarded digital tools to be valuable supplements to traditional teaching techniques rather than as a full replacement.

Overall, the results show that students favored a hybrid approach to language acquisition that combined the reliability and familiarity of traditional methods with the advantages of digital resources. Students still preferred handwritten notes, tangible textbooks, and direct teacher explanations for greater understanding and retention, even if digital platforms provided flexibility and interactive involvement. This emphasizes the necessity of an instructional strategy that is well-rounded and incorporates both traditional and digital components in order to accommodate a range of learning styles.

Discussion

A complex interplay between engagement, cultural expectations, and individual preferences is revealed by the use of digital tools in English language instruction among senior high school students in Japan. Digital tools cannot completely replace traditional methods of education, even though they provide gamified and interactive experiences that can boost motivation and give immediate feedback. In order to accommodate their unique learning preferences, students often adopt a hybrid approach, blending digital and traditional resources.

Engagement with Digital Learning Resources

Active Engagement with Interactive Language Tools. Since interactive digital tools like speech recognition software give instant feedback, they have been shown to increase student engagement. This supports the Input Hypothesis's principles (Luo, 2024), which highlight how crucial timely feedback and comprehensible input are to language acquisition. Recent studies support the findings, showing that instant feedback mechanisms (Fu & Li, 2022; Dai & Wu, 2023) can boost student autonomy and improve their pronunciation. By offering individualized learning experiences, AI-driven applications and learning, for example, may significantly foster student engagement, according to studies by Jawaid et al. (2025) and Ellikkal and Rajamohan (2024). However, these tools' efficacy hinges on their capacity to appropriately identify and react to learner input, since inaccuracies can result in frustration and reduced motivation.

Gamification and Motivation. It has been demonstrated that gamified educational apps, which integrate game-like features into instructional content, improve motivation and make vocabulary acquisition easier. The Self-Determination Theory (Ryan & Deci, 2024), on which this strategy is based, holds that intrinsic motivation is fostered when students' basic requirements for competence, autonomy, and relatedness are met. Gamification has been shown in studies to enhance learning results and boost engagement. According to Huseinović's research from 2023, for instance, gamified learning environments have a favorable effect on students' motivation and academic performance, especially when the game aspects complement the learning goals. According to Safaa Ahmed et al. (2023), gamification strategies also effectively improve student engagement in language learning environments. The findings imply that gamified applications with an effective design can improve the efficacy and satisfaction of learning experiences.

Preference for Traditional Learning Materials. Some students exhibit a preference for traditional learning resources, such as printed textbooks and handwritten notes, regardless of the benefits of digital tools. This preference might be explained by the cognitive advantages of handwriting (Kiefer & Spitzer, 2023), which might improve comprehension and memory recall. Furthermore, some students find comfort and effectiveness in the tactile and familiar learning experience that traditional resources provide. Given the coexistence of digital and traditional resources,

a hybrid strategy that blends the familiarity and physical engagement of traditional materials with the immediacy and interactivity of digital tools may be able to accommodate a range of learning preferences and maximize educational outcomes.

Classroom Interaction and Digital Media

Student engagement has been greatly impacted by the use of digital media in eikaiwa classrooms, especially when it comes to speaking and listening exercises. According to the findings, digital listening methods vary in usefulness based on the complexity of the information, video-based lessons improve comprehension, and AI-driven chats lack the flexibility of human engagement. These findings highlight the advantages and drawbacks of digital media in developing communicative competence, and they are consistent with several language acquisition theories and current empirical research.

Engagement with Video-Based Lessons. Dual Coding Theory (Clark & Paivio, 1991) explains why video-based learning is so effective in language instruction. It suggests that learners process information more effectively when it is delivered through both visual and auditory channels. This idea is consistent with student comments showing that listening to native speakers' conversations improved their comprehension of contextualized vocabulary, pronunciation, and expressions.

The findings are supported by recent studies. Video-based learning enhanced language memory and understanding, especially when combined with teacher assistance to clarify complex terms, according to Zhang et al. (2023). Furthermore, Huang and Cao (2023) noted that multimodal learning—like video classes with subtitles—significantly improves second language learners' listening comprehension.

However, the study additionally revealed that after watching videos, students found it difficult to engage in spontaneous conversation. This is consistent with Krashen's Input Hypothesis (Luo, 2024), which postulates that interaction is necessary for language formation even while exposure to understandable input is crucial. The inability of students to adjust their responses while relying on video phrases they had learned suggests a disconnect between active language usage and passive comprehension.

AI-Driven Conversations vs. Human Interaction. Although chatbots and AI-powered voice recognition software offer organized practice opportunities, students expressed disappointment about their rigidity. AI-driven conversation' lack of natural interaction is consistent with the Interaction Hypothesis theory (Huang et al., 2024), which holds that meaningful, interactive interactions including meaning negotiation are the most effective way for language learners to acquire a language.

This limitation is confirmed by recent studies. According to Jinming and Daniel (2024), AI chatbots in their infancy are still limited in enhancing communicative competence since students find it difficult to participate in dynamic, natural conversations, even though chatbots can help with vocabulary and pronunciation. Similar to this, Jeon and Lee (2023) emphasized the value of teachers' pedagogical knowledge when utilizing AI tools in the classroom, presupposing human interaction offered instantaneous, contextualized feedback—something AI frequently failed to replicate.

Students' frustration when AI responses did not recognize their attempts to extend the conversation is consistent with Huang et al.'s (2022) findings regarding the limitations of AI in language learning. Those limitations, including irrelevant and difficult content, can lead to students' demotivation (Naeem et al., 2023). These results imply that although AI can support organized speaking practice, it is still unable to fully replace the subtleties of human contact in language acquisition.

Effectiveness of Digital Listening Activities. One of the most important aspects of learning a language is listening comprehension, and digital media has been used extensively to improve this ability. Because subtitles lessen cognitive overload and enable learners to concentrate on both meaning and pronunciation before attempting to grasp spoken English without textual support, the Cognitive Load Theory (Kennedy & Romig, 2024) helps explain why students found videos with subtitles advantageous.

Studies demonstrate how crucial it is to adapt listening difficulty to student proficiency. According to research by Astrid et al. (2024), to prevent frustration and ensure progress in listening skills, learners gain the most from listening tasks when they are prepared by the teacher before the listening activities. Moreover, Ahmadi Safa and Motaghi (2024) imply that scaffolding helps the students understand the learning materials like videos, thereby helping them consistently move toward proficiency despite the progressively more challenging content. This supports the study's findings that some students found audio that was too rapid or used strange words difficult to

understand and the teacher provided the necessary scaffolding.

Challenges in Digital Tool Utilization

Language Accessibility. The language barrier that exists in many digital learning applications, which frequently do not support learners' native tongues, is a major impediment. This lack of support for the native tongue might hinder understanding and deter efficient use.

A theoretical framework for comprehending this problem is offered by the Cognitive Load Theory (Kennedy & Romig, 2024). According to this theory, students' ability to digest new information is restricted, and learning can be hampered by cognitive overload caused by instructional materials that are beyond the students' skill levels. Thus, adding native language assistance might lessen unnecessary cognitive burden and better enable learners to concentrate on acquiring new language competencies.

Use of Complex Language. The propensity of students to use simple sentence patterns by default while using digital technologies presents another difficulty. Either the limitations of the instruments themselves or a desire to avoid mistakes may be the cause of this simplification. According to studies, although digital tools might improve language acquisition, they might not adequately encourage the use of sophisticated linguistic structures, which could cause students to rely more on simpler forms. Krashen's Input Hypothesis (Luo, 2024), which contends that language acquisition occurs most efficiently when learners are exposed to input that is just a little bit beyond their current skill level (i+1), is consistent with this finding. Insufficiently challenging input from digital tools could hinder learners' ability to advance in using complex structures.

Furthermore, interactive learning situations that push students just past their independent capacities are crucial, according to Vygotsky's Zone of Proximal Development (ZPD) (Ness, 2023). Without adaptive characteristics, digital tools might not be able to move students into their ZPD, which could lead to stagnation at lower levels of language use.

Motivation and Engagement. Another crucial issue with digital learning tools is maintaining motivation and engagement. As time goes on, initial enthusiasm may fade, resulting in decreased interaction and superficial engagement. According to Vathanalaoha (2022) and Inayati and Waloyo (2022), interactive content and gamification can increase engagement, but their usefulness wanes if they are not continuously modified to accommodate changing learner needs. Self-Determination Theory (Ryan & Deci, 2024) supports this result by highlighting the importance of relatedness, competence, and autonomy in sustaining an intrinsic motivation. In the event that digital tools do not adapt to learners' growing competencies or do not foster a feeling of community, motivation could decline.

Furthermore, according to Dörnyei's L2 Motivational Self System (Rahimi et al., 2022), learners' motivation is impacted by their ideal L2 self, the perceived gap between their current and desired language proficiency, and the learning environment. Digital tools that do not support learners' learning objectives or do not foster a positive learning environment may find it difficult to sustain long-term engagement.

Addressing the Challenges. It is crucial to provide linguistically accessible digital learning resources that promote the usage of complex language structures and sustain student interest in order to overcome these obstacles. According to Cognitive Load Theory, using native language support can ease cognitive load and improve comprehension. The employment of complicated structures can be encouraged via adaptive learning paths that offer input at the right degree of difficulty, hence bolstering Vygotsky's ZPD and Krashen's Input Hypothesis. Self-Determination Theory and the L2 Motivational Self System components can be addressed by including gamification aspects, offering immediate feedback, and cultivating a sense of community in order to sustain motivation.

Cultural and Institutional Influences on Digital Learning

Institutional frameworks and cultural norms have a significant impact on how digital resources are incorporated into language instruction, especially in countries like Japan. Students' engagement with self-directed digital learning platforms may be impacted since they frequently associate good learning to traditional, teacher-led instruction.

Cultural Preferences for Teacher-Led Instruction. Structured, teacher-centered classrooms are highly valued in Japan's educational culture. This method has its roots in the communal learning environment and the social value of deference to authority (Hearn, 2022). Therefore, when teachers incorporate digital tools into their courses rather than letting students utilize them on their own, students may feel more at

ease and inspired. In line with the cultural emphasis on hierarchical learning structures, this preference implies that although students appreciate the advantages of digital resources, they also value the direction and immediate feedback that teachers provide.

Institutional Support and Blended Learning. The implementation of blended learning approaches and institutional support are also necessary for digital learning technologies to be effective. It has been demonstrated that blended learning, which combines traditional in-person instruction with online materials, improves language acquisition by offering a variety of learning modes (Majeed & Rehan Dar, 2022). However, rigorous pedagogical and technological support, consistent learning objectives, and careful course design are necessary for its success. The transition to blended learning in Japan, where educational institutions have historically favored standardized teaching techniques, necessitates careful integration to meet current curriculum objectives and guarantee that teachers and students receive adequate support.

Challenges in Autonomous Digital Learning. Even though digital tools have the potential to support self-directed learning, students frequently encounter difficulties when utilizing them without teacher guidance. Effective use may be hampered by factors like lack of confidence, limited self-regulation abilities, and uncertainties regarding the correctness of their learning techniques. Self-paced digital learning is less desirable in educational environments that value group learning over individual learning, which exacerbates this problem. Therefore, it is crucial to give students clear instructions, scaffolded support, and culturally and contextually appropriate materials in order to promote successful autonomous learning.

Student Preferences for Digital and Traditional Learning Methods

Students' levels of engagement vary according to the type of learning activity and the media used, according to empirical findings. Incorporating interactive activities into classroom settings, including pronunciation drills powered by artificial intelligence, frequently results in increased participation rates (Yuan & Liu, 2025). Some students, on the other hand, show a preference for traditional tools when it comes to tasks like taking notes or finishing exercises.

The dichotomy in student preferences is further shown by interviews. Concerns regarding extended screen time are common, despite the fact that digital programs are flexible and especially helpful for at-home practice. Learning may be hampered by bodily discomforts like headaches and eye strain that have been linked to excessive screen usage (Samantha Marsh et al., 2024).

Students frequently use a hybrid approach to learning, according to analyses of digital artifacts such as online forums and reflection notebooks. While traditional approaches are preferable for in-depth study and retention, digital technologies are often used for early engagement and practice. This hybrid approach implies that although technology is a useful a supplement, it does not entirely replace the effectiveness of traditional educational resources (Silva et al., 2024).

The cognitive load theory (Kennedy & Romig, 2024) might be used to contextualize the observed preferences. According to this theory, learning occurs most effectively when teaching strategies match the structure of the human cognitive architecture. Print texts and other traditional materials may improve understanding and retention by lowering unnecessary cognitive strain. On the other hand, because of the possibility of distractions and sensory overload, digital interfaces may raise cognitive load, making students choose traditional techniques for tasks that call for intense focus.

Synthesis

The use of digital resources in senior high school English language instruction in Japan involves a complex interplay between student engagement, cultural norms, and personal learning preferences. Even though digital resources—especially gamified and AI-powered applications—improve motivation and offer instant feedback, they can't completely replace traditional learning strategies. A hybrid method is used by many students, who combine traditional materials for comprehension and retention with digital tools for practice and interaction.

The ability of digital tools to offer structured and interactive learning experiences determines how effective they are. Gamified apps and AI-powered speech recognition support language learning theories by encouraging self-reliance and motivation. However, their overall efficacy is diminished by drawbacks like inaccurate feedback and constrained AI dialogues. Dual Coding Theory-backed video-based training highlight the difference between passive learning and active language use by enhancing listening comprehension but falling short in preparing students for spontaneous conversation.

Barriers to accessibility, simplifying of linguistic structures, and decreasing motivation over time are some of the ongoing issues with the use of digital tools. These problems might be lessened, according to Cognitive Load Theory, by including adaptive learning features and native language support. Additionally, gamification can maintain interest, but if it does not adapt to the needs of learners, its usefulness decreases. Student preference for teacher-led teaching versus totally autonomous digital learning is one example of how cultural and institutional variables influence the adoption of digital learning. This reflects broader cultural attitudes that place a high importance on learning environments that are hierarchical and structured.

Finally, the success of digital tools depends on their design quality, institutional support, and cultural adaptability, even though they improve English language acquisition by offering immediate and interactive learning experiences. The best way to accommodate a range of student preferences and maximize learning outcomes is to integrate digital and traditional approaches in a balanced way while adhering to pedagogical best practices.

Implications for Digital Tool Integration

Adopting a blended learning strategy that integrates the advantages of traditional instruction with technological advances is essential to maximizing the benefits of digital tools in language education within such institutional and cultural contexts. This approach entails incorporating digital materials into the curriculum in a way that enhances and supplements activities led by teachers. The gap between traditional approaches and contemporary digital tools can also be closed by offering professional development to teachers so they can successfully integrate technology into their lesson plans. Teachers can establish a more stimulating and productive language learning environment by coordinating the use of digital tools with institutional structures and cultural preferences.

Conclusion

Japanese senior high school students' use of digital tools in English language learning demonstrates an intricate balance between student engagement, cultural norms, and personal learning preferences. Traditional approaches cannot be entirely replaced by gamified platforms and AI-driven apps, even though they improve motivation through interactive experiences. Students instead use a hybrid approach to learning, which reflects a larger change in education by combining traditional methods with digital resources. However, the effectiveness of digital tools depends on their ability to provide accurate, responsive, and contextually appropriate feedback, highlighting the irreplaceable role of human interaction in language acquisition.

This study casts doubt on the idea that improvements in technology inevitably result in improved academic performance. The persistent inclination towards traditional educational resources, such handwritten notes and printed textbooks, highlights the cognitive and affective aspects of learning that digital tools might not be able to completely replicate. Students' interactions with digital resources are also influenced by institutional and cultural variables, which highlights the importance of integrating them in a pedagogically sound manner. A more successful and inclusive language learning environment can be created by educators by taking a balanced approach that makes use of both digital and traditional approaches. This way, technology will be used to enhance meaningful instruction rather than replace it.

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