

Learning English in the Context of Digital Transformation: New Pressures on Middle School Students and Approaches to Respond

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ABSTRACT

Digital transformation is profoundly reshaping the foreign language learning environment, affecting everything from access to learning materials and the organization of learning activities to communication, feedback, and self-directed study. For lower secondary school students, this shift not only expands opportunities to access English learning but also imposes new demands regarding attention, information processing, digital literacy, self-regulated learning, and emotional management. This article reviews and analyzes domestic and international research to clarify the nature of the digital context in English learning, the mechanisms by which this context exerts pressure on students, the primary forms of such pressure, and potential coping strategies. The findings indicate that the digital context should not be viewed merely as the presence of digital devices, but rather as a learning environment characterized by connectivity, multimodality, continuity, and personalization—increasingly mediated by algorithms and artificial intelligence. In this environment, learner pressure manifests across six key dimensions: cognitive load, attentional maintenance, digital competence requirements, self-regulation demands, emotional strain, and social-evaluative pressure. However, the impact of technology is not deterministic; research shows that outcomes depend significantly on the purpose of use, pedagogical design, the level of teacher support, and the learner's self-regulation capabilities. Consequently, the solution lies not in simply restricting technology, but in creating a learner-centered digital English learning environment where technology is utilized purposefully—managing cognitive load and protecting attention—while simultaneously fostering digital literacy, self-directed learning skills, and the responsible use of artificial intelligence.

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Introduction

Digital transformation is becoming a key feature of contemporary education. The evolution of mobile devices, online learning platforms, social media, digital learning resources, language learning apps, and—more recently—generative artificial intelligence has significantly expanded the scope and methods of learning. UNESCO recognizes that digital technology in education serves not merely as a teaching aid but also as a means of delivering education, a competency to be cultivated, a management tool, and an integral part of the socio-cultural context in which learning takes place (UNESCO, 2023).

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This shift holds particular significance for English language learning. Unlike many subjects that merely use technology as a supplementary tool, English is pervasive within the digital landscape itself: videos, podcasts, games, social media, forums, search engines, language-learning apps, and artificial intelligence systems can all serve as sources for language exposure and practice. Consequently, digital transformation not only alters the way English is learned but also transforms the very environment in which the language is acquired and used.

Vietnam's 2018 General Education Program designates the "First Foreign Language" as a compulsory subject from grades 3 through 12, aiming for the comprehensive development of listening, speaking, reading, and writing skills to enable students to use the language for academic and communicative purposes. Meanwhile, Circular 02/2025/TT-BGDĐT has officially issued a Digital Competence Framework for learners, mandating the development of digital competence within the national education system. This indicates that students are increasingly required to meet two sets of demands simultaneously: language proficiency and the ability to function effectively in a digital environment.

However, increased opportunities do not necessarily mean the learning process becomes easier. A recent systematic review of technology and foreign language anxiety—analyzing 99 empirical studies conducted between 2004 and 2024—reveals that technology can alleviate anxiety through personalized feedback and a sense of psychological safety, yet it can also heighten anxiety due to cognitive overload and reduced human interaction (Huang & Liu, 2025). Another systematic review focusing on technology-supported collaborative language learning indicates that technology can enhance language proficiency and social outcomes, although studies also note specific pressures associated with online collaborative activities.

For lower secondary school students, this issue is particularly significant, as this stage marks a period when learners are developing their abilities to self-regulate, manage attention, control emotions, and select learning strategies. As the English learning environment becomes both richer and more complex, students must not only master English content but also learn how to search for, select, evaluate, utilize, and adapt their English acquisition processes within the digital landscape.

A study involving 324 students at a lower secondary school in Ho Chi Minh City revealed that students rated their digital competence as average; while they demonstrated relatively strong skills in information searching and digital safety, they showed limitations regarding digital content creation and the flexible application of AI in learning English (Nguyen Dac Thanh et al., 2025). These findings highlight a critical issue: the digital environment may be expanding English learning resources at a pace that outstrips students' ability to effectively leverage them.

Based on the issues outlined above, this article focuses on answering four questions: (1) How is the digital context of English language learning structured? (2) Why can this context generate new pressures for lower secondary school students? (3) In what ways do these pressures manifest? and (4) What directions should be taken to transform the digital environment from a source of pressure into a source of support for developing English language proficiency?

Literature Review: The nature of the digital context in english language learning From “using technology” to “digital context”

A simplistic view of digital learning equates it merely with introducing computers, mobile phones, or the Internet into the classroom. This perspective fails to fully capture the essence of digital transformation. UNESCO points out that technology in education serves simultaneously as an input, a delivery medium, a set of skills to be developed, and a socio-cultural context.

Therefore, in the context of English language learning, the “digital context” should be understood as an environment where activities such as acquisition, processing, practice, communication, feedback, assessment, and self-study are increasingly mediated by digital devices, platforms, content, and technologies.

This approach brings about a significant theoretical shift. If phones or applications are viewed merely as “tools,” the primary research question becomes: Does this tool help students learn English better?. However, if technology is viewed as a learning context, the question must be broadened: How does technology alter the conditions, behaviors, demands, and experiences of English language learners?, This represents a shift from researching the effectiveness of tools to examining the transformation of the learning environment.

Key characteristics of the digital context

First, connectivity: Students can engage with English beyond the confines of the classroom and textbooks. Videos, podcasts, games, social media, and online communities create richer opportunities for language exposure.

Second, multimodality: A single learning unit can simultaneously incorporate text, audio, images, video, animations, and interactive elements. This expands the scope of language reception but also increases the volume of information sources learners must process.

Third, continuity: Learning English does not necessarily end when the lesson concludes. Students can watch English videos, look up words, practice pronunciation, complete exercises, or communicate in English at any time.

Fourth, personalization: AI applications and systems have the capability to provide feedback, suggestions, or content tailored to the needs of individual learners. Research on AI in English language learning indicates that the technology has the potential to support various language skills and aspects. A 2024 meta-analysis based on 40 empirical studies involving 3,290 participants found that AI has a positive impact on English learning achievement, although its effectiveness depends on the context and implementation (Deng & Li, 2024).

Fifth, algorithmic nature and the problem of choice overload: This is an increasingly significant characteristic. Students are not merely provided with materials; they must choose from a vast array of resources, applications, and solutions. With generative AI, students can even ask the system to generate reading passages, explain grammar, correct written work, facilitate conversation practice, or translate texts.

Thus, the digital landscape simultaneously expands available resources and increases the number of decisions learners must make.

Methodology

This manuscript is a literature-based review and analytical synthesis. The source manuscript states that it reviews and analyses domestic and international research to clarify the nature of the digital context in English learning, the mechanisms through which this context may create pressure, the major forms of pressure, and possible response strategies. The source manuscript does not report a systematic search protocol, databases, search period, inclusion and exclusion criteria, or a formal quality-appraisal procedure; these details are therefore not added in this adapted version.

Research Design: Literature review and analytical synthesis.

Data Collection and Analysis: The manuscript synthesizes findings reported in the cited domestic and international literature and develops an analytical/conceptual interpretation of pressures in digital English learning.

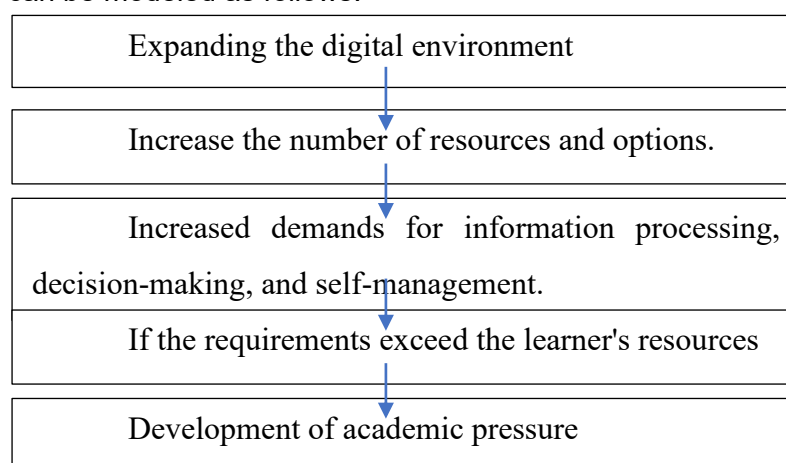
Scope and Limitations: Because the source manuscript does not provide a systematic review protocol, the synthesis should be understood as an analytical literature review rather than a systematic review or meta-analysis.

Results

Why can the digital context create pressure for lower secondary school students?

It is important to emphasize that technology does not generate pressure on its own. Pressure arises from the interaction between the characteristics of the digital environment and the learner's information processing capabilities, self-regulation skills, digital competence, and psychological traits.

This process can be modeled as follows:



Under this approach, "pressure" is not equated with stress or psychological disorders, but rather understood as an increase in the cognitive, emotional, behavioral, and social demands that students must meet while learning English in a digital environment.

Major pressures facing lower secondary school students

- Cognitive pressure: an overload of information and channels

One of the paradoxes of digital English learning is that the abundance of learning materials can become a cognitive burden. In a traditional setting, teachers and textbooks play a key role in selecting and organizing content. In a digital environment, however, students can simultaneously access videos, text, images, subtitles, translations, dictionaries, and automated feedback. If these information sources are not organized appropriately, learners must undertake additional tasks involving the selection, integration, and filtering of information. Research on cognitive load management in technology-enhanced language learning indicates that while technology can facilitate information processing, it also carries the risk of creating unnecessary cognitive load if the learning design is inadequate.

A 2026 overview and meta-analysis regarding cognitive load and foreign language anxiety also revealed a significant positive correlation between the two; an analysis of 11 studies involving 1,250 learners yielded a pooled correlation coefficient of approximately $r = .41$. However, the majority of research in this field has not focused specifically on lower secondary school students; therefore, these results should not be interpreted as direct evidence applicable to Vietnamese students.

Thus, the pressure involved is not merely about "studying more," but rather: having to process multiple sources of information while simultaneously maintaining language-related objectives.

- The challenge of maintaining attention

The digital landscape turns student attention into a contested resource. A single device can simultaneously host: , English lessons, social media notifications, entertainment videos, games, messages, search engines, AI applications.

PISA 2022 data indicates that approximately 30% of students in OECD countries report being distracted by digital devices during most or all mathematics lessons; about 25% also report being distracted by other students using digital devices. Students who frequently use phones at school tend to report higher levels of distraction. While this does not constitute direct evidence regarding English classes specifically, it provides large-scale evidence of a mechanism relevant to learning in general: digital devices serve as both learning tools and sources of distraction. This is particularly significant for middle school students, whose ability to self-regulate attention is still developing. Consequently, digital English learning requires students not only to possess English proficiency but also to manage their own attention.

- Demands regarding digital competence

A fundamental difference between traditional and digital English learning is that students require an additional set of competencies to use technology effectively. They must know how to: search for information, evaluate the reliability of sources, select learning materials, use dictionaries and support tools, communicate online, protect personal data, create digital content, use AI, verify the accuracy of AI-generated output. The digital competence framework for learners in Vietnam, issued under Circular 02/2025/TT-BGDĐT, formally integrates digital competence into the national education system.

Notably, a study involving 324 students at a secondary school in Ho Chi Minh City revealed that the students rated their own digital competence as average; while they demonstrated relatively strong skills in information retrieval and digital safety, they showed limitations in digital content creation and the flexible application of AI in English learning (Nguyen Dac Thanh et al., 2025). This gives rise to a paradox: Technology expands the resources available for learning English but simultaneously creates additional "prerequisites" that students must meet to effectively utilize those resources. If students lack digital competence, technology can become yet another subject to master rather than simply a tool to support their English learning.

- Pressures of self-directed learning and self-regulation

The digital environment increases flexibility but simultaneously reduces the level of direct teacher control. Students must make their own decisions regarding: what to learn, when to learn, which resources to use, how long to study, whether to trust a given resource, when to consult the teacher, whether to use AI.

A study involving 158 high school students in Vietnam regarding online English self-study revealed that students frequently utilize online dictionaries, YouTube videos, and social media; meanwhile, financial constraints were identified as a significant limitation. Such results indicate that digital English learning is not merely a matter of transferring lessons from paper to a screen; it requires the ability to self-manage the learning process.

Recent studies on AI and self-regulated language learning also highlight AI's role in supporting self-regulation, requiring learners to plan, monitor, and evaluate their use of the tool rather than relying on it passively.

For lower secondary school students, this requirement can become a significant source of pressure.

- Emotional pressure and anxiety in foreign language learning

Learning a foreign language can inherently generate anxiety, particularly during speaking activities, communication, and instances where one must demonstrate proficiency in front of others. Digital environments can alter the nature of this anxiety. Students may be required to: speak on camera, record their voices, deliver online presentations, communicate with others via digital platforms, receive automated feedback, compare their own work with high-quality examples found online.

However, one should avoid the conclusion that technology invariably increases anxiety. A systematic review by Huang and Liu (2025) reveals two opposing mechanisms: technology can alleviate anxiety by fostering a sense of security and providing personalized feedback, yet it can also heighten anxiety through cognitive overload and reduced human interaction. Consequently, the emotional impact depends on how technology is designed and utilized.

- Social pressure and evaluation

The digital context also expands the scope of social comparison for students. In a traditional classroom, students primarily compare themselves to their classmates. In a digital environment, however, they may encounter English learners of varying proficiency levels as well as language outputs that have been edited or technologically enhanced.

Nevertheless, direct evidence regarding this mechanism among Vietnamese lower secondary school students remains limited. Therefore, this should be viewed as a hypothesis warranting further research rather than an established conclusion.

What is more certain is that the digital environment enhances opportunities for communication and collaboration while creating new demands regarding how students present ideas, provide feedback, and coordinate with others. Systematic reviews of technology-supported collaborative language learning indicate that such approaches can improve language proficiency and social outcomes, though results vary significantly depending on the design of the activities.

A Paradox of English Language Learning in the Digital Context

From the above summary, a significant paradox emerges: While the digital environment expands access to English, it simultaneously increases the number of choices and demands that students must manage on their own.

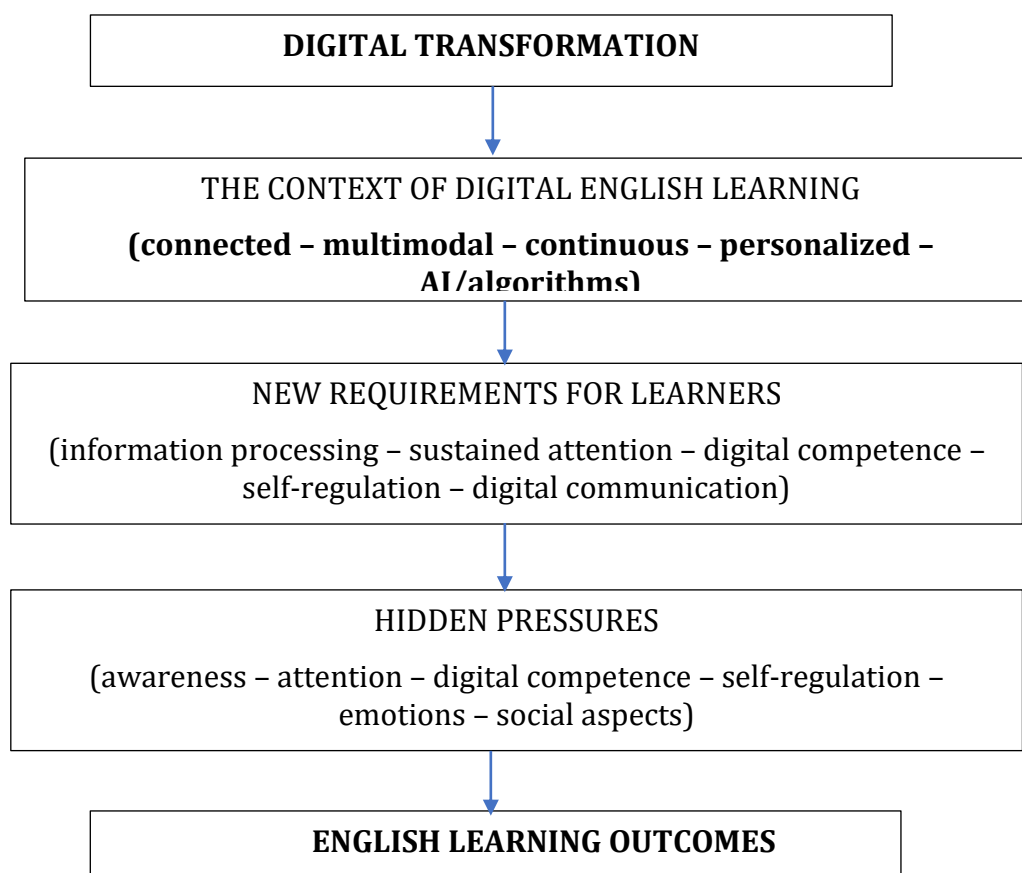
This can be summarized as follows: More technology → more learning resources → more options → more decisions → more self-management requirements.

However, this process does not necessarily lead to a negative outcome. Conversely: More technology → more opportunities to practice → faster response → higher level of personalization → more opportunities for communication → the ability to better support learners.

Recent syntheses support this dual perspective. A 2026 meta-analysis of new technologies in English language teaching—based on 33 experimental and quasi-experimental studies involving 3,181 learners—found an overall positive effect ranging from small to moderate ($g = .38$), yet noted significant heterogeneity across studies ($I^2 = 90.14\%$). Notably, the effects varied according to educational level and the type of technology used. This indicates that one cannot simply ask: “Is technology good for learning English?” A more appropriate scientific question is: “Which technologies—used in what ways, with which students, under what conditions, and through what mechanisms—can improve English learning without imposing demands that exceed learners' capabilities?”

Discussion

Based on a synthesis of studies, the paper proposes the following model:



However, this relationship is not a deterministic linear one. Several factors can alleviate pressure: digital competence + self-regulation + pedagogical design + teacher support + family support + school environment. Therefore: Digital context → pressure. It does not always happen. A more suitable relationship is: Digital context × learner resources × pedagogical design → learning experience.

This is the most important point of the article: the pressure is not inherent in the technology itself; rather, it arises from the mismatch between the demands of the digital environment and the learner's resources, while also being strongly influenced by the pedagogical design.

Conclusion

Digital transformation is fundamentally reshaping the English learning environment for lower secondary school students. This shift is not merely reflected in the classroom use of computers, smartphones, the Internet, or AI; more profoundly, it marks the emergence of a digital English learning context characterized by connectivity, multimodality, continuity, personalization, and increasing technological mediation.

This new landscape offers significant opportunities for English learning, such as expanded learning resources, enhanced practice capabilities, rapid feedback, personalized support, and increased communication opportunities. However, these opportunities also bring new demands. Students must process larger volumes of information, maintain focus amidst numerous distractions, develop digital literacy, self-regulate their learning processes, manage their emotions, and adapt to new forms of communication and assessment.

A synthesis of the evidence identifies six primary categories of pressure: cognitive load, sustained attention demands, digital competence requirements, self-regulation demands, emotional strain, and social-evaluative pressure. However, existing evidence does not support the view that technology inherently causes negative effects. Conversely, reviews indicate that outcomes depend significantly on the purpose of use, the type of technology, activity design, and learner characteristics.

Therefore, the central issue regarding digital transformation in English language teaching and learning is not "whether to use technology," but rather "how to design digital English learning environments that align with the developmental capabilities of lower secondary school students." This necessitates a shift in focus: from merely increasing technology usage to developing the competence to use technology purposefully; from providing vast amounts of learning materials to curating selective resources; from requiring students to adapt to technology to designing technology that suits the learner; and from relying on tools to fostering self-regulation skills. For lower secondary students, the ultimate goal is not to become the most prolific users of technology for English learning, but to become English learners capable of using technology proactively, selectively, responsibly, and with self-regulation. This can be considered a key requirement for English language education in the context of digital transformation.

Recommendations

Shifting from “increasing technology” to “purposeful technology use”

A common pitfall in digital transformation is equating the quality of education with the quantity of technology employed.

UNESCO warns that robust evidence regarding the added value of technology in education remains limited and emphasizes the need to place learner interests at the center, rather than allowing technology to replace human interaction.

Therefore, every digital tool used in English language teaching must address three questions:

1. What learning problem does this tool solve?
2. What added value does it offer compared to non-technological methods?
3. Are the cognitive and technical demands placed on students commensurate with the benefits?

Reducing cognitive load in digital lesson design

Teachers should avoid incorporating too many platforms, links, videos, and tasks into a single activity. Instead, they should:

- + Limit the number of information sources;
- + Organize content in a step-by-step manner;
- + Provide guidance on using videos and subtitles;
- + Break complex tasks down into smaller ones;
- + Intentionally combine visual and verbal channels;
- + Provide clear criteria for students to select sources.

The goal is not to create a "tech-heavy" lesson, but rather to ensure technology reduces unnecessary cognitive load instead of adding to it.

Developing self-regulated learning competence

If the digital environment expands students' range of choices, English language education must simultaneously develop their ability to manage those choices. Secondary school students need guidance on:

- + Setting English learning goals;
- + Creating study plans;
- + Managing time;
- + Managing notifications;
- + Scheduling uninterrupted study time;
- + Tracking progress;
- + Evaluating learning resources;
- + Self-assessing outcomes.

Thus, self-regulated learning is not merely a supplementary skill but becomes a component of English learning competence in the digital environment.

Developing digital literacy directly integrated with English language learning

Digital literacy should not be taught merely as a standalone topic. In English classes, students can develop these skills through tasks such as:

- + Verifying the credibility of an English-language website;
- + Comparing two translations;
- + Evaluating AI-generated responses;
- + Identifying misinformation;
- + Creating digital content in English;
- + Using AI for feedback while personally revising the work;
- + Citing sources when using online content.

This approach integrates digital literacy into English language proficiency rather than creating a separate subject. Research conducted in Ho Chi Minh City on the digital literacy of lower secondary students also highlights the need to enhance skills in creating digital content and using AI flexibly and ethically in English learning.

Using AI based on the principle: "AI supports – students decide"

AI can assist students in:

- + Explaining vocabulary;
- + Generating conversations;
- + Practicing writing;
- + Correcting errors;
- + Practicing pronunciation;
- + Creating questions;
- + Simulating communication scenarios.

However, if AI directly generates the entire learning output, students may complete the task without actually engaging in the necessary cognitive processes. Studies on ChatGPT in language learning indicate that learners use the tool for various purposes—such as reading, writing, vocabulary, and grammar—but its adoption and continued use depend on perceptions of usefulness, usability, trust, self-efficacy, and technology-related anxiety. Therefore, the appropriate principle for lower secondary students is: AI provides suggestions and feedback, while students must handle the thinking, decision-making, verification, and finalization.

Safeguarding human interaction

Technology should not entirely replace interactions between teachers and students or among students themselves. UNESCO emphasizes that technology should support education based on human interaction rather than aiming to replace it. In English language learning, this is particularly important for:

- + Communication;
- + Pronunciation development;
- + Emotional feedback;
- + Collaboration;
- + Handling communicative situations;
- + Building confidence.

Therefore, the appropriate model is not: Digital instead of human, but rather: Digital + human interaction.

Strengthening collaboration between schools and families

The digital landscape blurs the boundaries between learning and daily life. Therefore, schools and families need to agree on certain fundamental principles regarding:

- + Uninterrupted study time;
- + Time spent on digital entertainment;
- + Mobile phone usage;
- + Social media notifications;
- + Data safety;
- + AI usage;
- + Verifying information sources.

The goal is not to control every aspect of students' digital activities, but rather to help them gradually take charge of their own digital behavior.

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The authors declare no conflict of interest.

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