Unlocking Practical Implications of Digital Game-Based Learning in EFL Education

Eulices Cordoba Zuniga , **Esteban Mayorga** and **Nancy Ruiz**
Corporacion Universitaria Adventista -UNAC
Medellin, Colombia

Abstract. This research investigated the potential of Digital Game-Based Learning (DGBL) to boost higher-order thinking (HOT) and social skills, personalized learning, and language performance in secondary English as a foreign language (EFL) education. We used a documentary method to examine the results of 30 studies on DGBL in secondary EFL instruction. We predefined inclusion and exclusion criteria to ensure that articles were published in the last five years, indexed in academic databases, and examined the benefits of DGBL in EFL education. Data were collected using checklists, journal entries, and sequential documentary summaries. The analysis included five stages: article examinations, data reduction, comparison, data display, meaning-making, and final reasoning. The findings indicated that 40% of the reviewed studies agreed that DGBL can foster higher-order thinking by engaging students in digital games such as Mondly, Metaverse, and Pokémon Go. In addition, 20% of the studies approved that DGBL can foster networking opportunities in EFL instruction by enhancing mutual understanding, co-responsibility, and respectful communication. Additionally, 12% of these articles supported that such a method strengthens autonomous and self-directed learning by engaging students in interactive and immersive self-learning digital games that can lead to greater awareness and independence. The remaining percentage (28%) endorsed that DGBL increased language exposure by enhancing rehearsal opportunities, inputs, and resources. The findings indicated that DGBL could be a multifunctional, adjustable, and goal-oriented instructional alternative for developing higher-order thinking, social skills, and personalized learning in secondary EFL education.

Keywords: autonomy; digital game-based learning; games; higher-order thinking; performance

1. Introduction

DGBL has been a pedagogical alternative for delivering EFL instruction in many local and international schools seeking pathways to foster motivation, entertainment, and joyful classroom opportunities. As a teaching and learning approach, DGBL utilizes online educational games to encourage students to

practice various game-based functional language skills. Kazu et al. (2023) emphasized that DGBL is a method that incorporates formative games capable of capturing student interest, increasing classroom participation, and engaging students in daily basic situations. Hartt et al. (2020) also affirm that DGBL encourages teachers to use games to motivate and engage students. In this sense, Wang et al. (2022) presented DGBL as a methodology that could potentially benefit the EFL teaching and learning process. From this perspective, DGBL is an additional methodology teachers can integrate into their EFL instruction to provide a technology-based strategy to facilitate the teaching and learning process.

DGBL could be a good opportunity to empower secondary EFL education. Lee (2019) argued that DGBL could help teachers by providing challenging games that catch students' attention. Mohanty et al. (2021) and Su (2023) agreed that such a method trains students to become aware of participating in the lessons. Yukselturk (2018) said this approach encourages students to look for the best solutions for what they must do to complete the assignments. Huang et al. (2020) concluded that DGBL enables students from various backgrounds and countries to learn using a standardized technology-based methodology. However, DGBL could have other potential benefits for secondary EFL instruction, such as enhancing problem-solving and critical thinking skills and promoting collaborative work and decision-making skills. These insights are still necessary to unveil the practical implications of Digital Game-Based Learning in developing HOT and social skills, personalized learning, and language performance in secondary EFL education. Therefore, we decided to conduct this meta-analysis research to investigate the potential of Digital Game-Based Learning (DGBL) to foster HOT and social skills, personalized learning, and language proficiency in secondary EFL formation. Consequently, this study attempts to answer the question: What practical potential applications can game-based methods bring to benefit EFL in secondary instruction?

2. Literature review

Nowadays, Digital Game-Based Learning (DGBL) has gained widespread recognition as a pedagogy that extends beyond merely engaging EFL learners in classroom instruction to promoting other skills that reshape EFL education. Hwang and Chen (2022) defined DGBL as an EFL teaching and learning approach aimed at mastering language competencies and helping students develop additional skills. Assapun and Thummaphan (2023) expressed that such a methodology could expand EFL teaching and learning experiences by incorporating online and offline assignments that match students' learning styles. Wang and Tahir (2020) expressed that DGBL offers a rich platform to improve EFL education by implementing a data-based pedagogy that supports teachers to have quick-to-access records and data to adjust EFL instruction. Xu et al. (2019) and Ghazy et al. (2021) determined that DGBL can pave the way for teachers to provide students with more feedback and adjustable ways to advance in their EFL education than in an ordinary class. As an approach, DGBL could offer a systematic introduction of purposeful educational games to empower language competencies and to achieve the curriculum objective. Then, DGBL goes beyond assuming classroom games as a joyful and playful opportunity because this model

allows teachers to deliver purposeful game lessons that match the EFL course content and standards. However, we consider that to implement this approach. It is necessary to consider the study plans, objectives, standards, and competencies teachers must develop to design what game accommodates each teaching and learning situation.

Further, Hung (2018) stated that DGBL encourages learners to develop problem-solving skills by exposing them to finding solutions, negotiating with their classmates, and agreeing on the best thoughts to complete tasks. Chang and Hwang (2019) said that DGBL can prepare learners to foster their creativity by negotiating, decision-making, and thinking critically about how they need to complete their assignments. Nguyen (2020) indicated that DGBL contributes to developing advanced thinking skills by promoting adaptability, decision-making, and flexibility. However, Rachayon and Soontornwipast (2019) and Wang et al. (2022) established that skills such as analysis, synthesis, and critical thinking are among the most challenging to foster through DGBL. One way to support decision-making is by introducing the students to the digital assignment that demands that they choose ideas, polish them, and select the best alternative solution to do the tasks. In this respect, Wang et al. (2022) and Kavak (2022) encouraged that this approach helps develop critical thinking skills by exposing learners to the synthesis, analysis, and evaluation of their ideas as they attempt to provide solutions to schoolwork. We agree with the author that DGBL is a multi-purpose method that can introduce students to game-based assignments that demand creativity, critical thinking, data analysis, synthesizing, and ideas for completing the game. Wang et al. (2022) and Kavak (2022) suggested that another way to foster thinking skills is by implementing STEM-based games, problem-based games, project-based games, and case-based learning games that generate opportunities to compare and evaluate ideas before students come up with solutions to the assignments.

Additionally, Kailani et al. (2019) and Dashtestani (2022) argued that DGBL prepares learners to collaborate with their classmates through interaction and negotiation. McNichols (2018) used trading card games designed for team and small group assignments. Alawadhi and Abu-Ayyash (2021) stated that this method can be a way to introduce peer work in the lessons. Durriyah and Zuhdi (2018) confirmed that DGBL benefits the EFL teaching and learning process by introducing an innovative education technique that engages students in teamwork, collaboration, and interaction. Huang et al. (2020) utilized Socrative, Quizlet, and Kahoot to mingle students in their classes. As noticed, teachers may use diverse educational goals to encourage collaboration in EFL education. Sharing decision-making is not exclusively a benefit that game instruction offers; traditional classrooms enable students to work together, cooperate, and reach a mutual agreement.

Nevertheless, game education provides more flexibility to build a learning community by using multiple resources, online and offline techniques, applications, and software that have already been demonstrated to be effective in fostering networking learning opportunities. One tangible example that teachers may use is Canva for education, Genially, Jumboard, and Random. The final decision on what type of game to apply, to pair up or have students working

together depends on the accessibility to resources, the context, the content, and the target learning goal the teachers intend to work on.

Furthermore, Hwang and Chen (2022) said that DGBL offers teachers endless possibilities to promote language proficiency and personalized instruction through diversified inputs and flexible learning experiences. Wang et al. (2022) and Yang et al. (2019) established that such a method augments pedagogical flexibility in EFL formation. Teachers can access millions of resources, platforms, software, and tech-based didactic materials and equipment to prepare multilevel classroom outcomes that best suit learning styles, accommodations, and student levels. It is necessary to note that such accommodation can be done in an ordinary classroom. However, digital-based education offers quick access to feedback, data, and multiple classroom products and can accommodate diverse learners easily. Müller (2018) and Rinekso et al. (2021) communicated that when teachers use DGBL in their classrooms, they increase trial and error, rehearsal, communicative opportunity, and autonomy. DGBL provides opportunities for students to self-access their learning, check their progress, raise their awareness, and master their language abilities by practicing with their peers in a less threatening environment.

3. Methodology

3.1. Research design

This study was a meta-analysis of thirty research articles about DGBL in EFL education. A qualitative documental research method was used to deepen the understanding of the practical implications of DGBL in EFL education. According to Ahmed (2010), documentary research provides opportunities to explore, examine, compare, and interpret the work of other scholars to identify potential implications for a particular field of study. To deepen the understanding of the practical implications of DGBL in EFL education, we add the discussion of the meta-analysis documental research method here.

3.2. Method

We adopted Ahmed's (2010) model to select and collect data from 30 research articles about DGBL in EFL instruction. This model proposed four key stages for choosing the articles: credibility, authenticity, representativeness, and meaning. To ensure credibility, we followed five steps. First, we brainstormed on the DGBL in secondary EFL education, then we selected the best ideas to research on Google Scholar and narrowed the topic. Initially, we found 1000 articles in the area, and when we utilized the keywords critical thinking, creativity, and collaborative work, the search was reduced to 500. Once we had that number of articles, we started evaluating the sources and found that most of the articles were not from 30 were from reputed journals. We collected data from reputable indexed journals and articles that adhered to reliable scientific processes. Next, we evaluated their accuracy using a checklist we created to research the topic, the significance of the research, its relationship with DGBL, the context, and other relevant information (Table 1).

Table 1. **Checklist for Evaluating the Authenticity of Articles**

Area	Aim	Process

Topic	To ensure the main theme was the study of DGBL	Retrieved from various academic browsers such as Scholar, academic, and Eric. Narrowed the topic from general to specific K-12
Year of publication	To confirm, the publication year was between 2018 and 2023	Set a time interval to retrieve
Aim and focus of the study	To confirm the study's relevance to DGBL	Read, analyze, and compare the research study
Context and population of the study	To verify that the survey represented its context and population	Reviewed the contexts of the research studies
Findings and discussion	To ensure the study delivered relevant findings and discussions in the field	Evaluated the findings and discussions
Conclusions	To check whether the survey provided accurate conclusions	Checked the conclusions to examine the significant inferences
Recommendations	To assess whether the study offered recommendations for further research and teaching practices	Explored the recommendations for further research
References	To examine whether the study included up-to-date references	Listed the references to adhere to the time framework and its importance for the study

To ensure credibility, authenticity, representativeness, and meaning, we evaluated articles, and those that did not meet the criteria were removed from the list. Before making this decision, each paper was individually assessed to determine its legitimacy based on a predefined rubric. Articles that met the requirements were included as part of the resources for further analysis, comparison, and interpretation. In cases where an article only partially satisfied the criteria, a second or third review was conducted to determine whether it could contribute to the study. Resource materials that did not pass the review process were eliminated without further consideration. We selected articles from academic databases such as Google Scholar, ERIC, SciELO, Science.Gov, Semantic Scholar, Ikala, Profile, and Scopus to diversify the scope of the study. Such

exploration led us to choose national and international perspectives on applying DGBL. Most articles selected were from Latin America, yet we broadened this perspective by choosing publications from Asia, Europe, and Africa.

3.3 Data analysis and interpretation

We decided to use the procedure recommended by Miles and Huberman (1994) to analyze and interpret documentary research data. The method includes four main steps: data collection, reduction, display, and conclusion (Table 2).

Table 2. Data Analysis and Interpretation

Process	Action taken	Result
Data collection	Searched the acronym DGBL on academic engines	More than 17.5000 articles about DGBL on academic engines
	Shortened the search to DGBL in EFL education	More than 5000 articles about DGBL in EFL education
	Made an initial list with the articles that include EFL education	The initial list of 100 articles about DGBL in EFL education
	Organized articles on academic engines and continents	List of search academic engines, continent, authors
	Evaluated the articles based on the checklist to provide authenticity	Evaluation of articles about DGBL in EFL education
	Selected 30 articles that fulfilled the requirements	List of 30 articles about DGBL in EFL education
Data reduction	Transcribed the summary in a Word document	Summary
	Read and reread the initial documents.	Summary
	Segmented the information	Highlighted word documents
	Listed initial codes	List with the initial codes
Data display	Confirmed the codes	List with the final codes
	Listed initial categories	List with the initial categories
	Compared	Word documents with the initial analysis
	Contrasted	

	Reorganized the information	Word documents with organized data
Concluding	Confirmed categories	List with the categories
	Organized the codes within each category	List of categories with codes
	Listed initial results	List of initial results
	Made interpretations	Final interpretation
	Concluded	Conclusions

As shown in Table 2, data analysis and interpretation followed a structured series of procedures that began with a broad data collection process. We narrowed this down to thirty articles from which we gathered, compared, and interpreted information. It is recommended that the search be conducted carefully to exclude articles outside the scope of the research. Another suggested step was to design a checklist to save time and limit the search to a manageable number of academic papers. We did this by establishing the goals, the years, and the suggestions by Miles and Huberman (1994). Once data collection was complete, we were advised to use a reading chart to condense information, making summaries or notes in Word documents. We segmented the data, which was reviewed multiple times to identify initial codes. In this article, data reduction helped us find potential codes, such as the advantages, challenges, and opportunities of implementing DGBL. We displayed the data—summaries of readings, segmented Word documents, discussion recordings, and notes from formal and informal conversations—to contrast and validate categories within the study. This process helped us build a database to determine the results and recommendations in the next chapter. Based on this, we inferred that data collection was a systematic process aimed at broadening our understanding of how DGBL can benefit the teaching and learning of English as a foreign language (Table 3).

Table 3. List of Codes and Categories

Initial Codes	Confirm Codes	Initial Categories	Confirmed Category
Potential language competencies	Potential language competencies	Advantages and disadvantages of DGBL in EFL education	Practical implications of DGBL in EFL education
Critical thinking	Higher-order thinking skills		
Collaboration	Higher-order thinking skills		
Problem-solving	Higher-order thinking skills		
Collaborative	Interactional classroom environment	Using DGBL in EFL education, the most used	

Real-world	Meaningful learning opportunities	strategies and games	
Strategies	Collaborative learning		
Challenges	Challenges	Application of DGBL	
Strategies	Strategies		
Types of games	Types of games		
Infrastructure	Infrastructure		

The research group added trustworthiness by registering the research in RISMA-ScR guidelines; its protocol number was 202480065. The review followed a systematic action-based procedure for data collection and reduction. Therefore, the first process organized the information collected from the articles, and the second process helped us discover the preliminary codes. We confirmed the codes and listed the initial categories in the data display. In the drawing conclusion phase, we affirmed the category. All this process led us to formulate the results that are shown next.

4. Findings and Discussions
4.1 Practical implications of DGBL in EFL education
Data analysis indicated that implementing DGBL can offer an educational platform to facilitate diverse benefits in EFL education. Initially, this educational model can facilitate HOT skills in EFL because students can make decisions during gameplay. Further, the records collected in the review indicated that this methodology could enhance social skills in EFL education. Students need to negotiate, work in teams and small groups, and reach consent to make decisions while they play with their team or small group games. Information lets us believe this approach can build a cross-cultural collaborative environment where students interact with multiple and various friends in the same classroom. DGBL can foster an interactional and involving classroom environment that can encourage autonomy and personalized learning by introducing self-access and self-governance games that allow learners to acquire language competencies at their own pace. Table 4 shows the practical implications of DGBL in secondary EFL education (Table 4).

Table 4. Practical implications of DGBL in secondary **EFL education**

Potential Implications	Occurrences	Percentages
Interactive and immersive classroom	6 out of the 40 articles	15%
Autonomy and personalized learning	5 out of the 40 articles	12, ½%
Accessibility and inclusivity	5 out of the 40 articles	12, ½%

Higher-order thinking skills	12 out of the 40 articles	30%
Cross-cultural collaborative environment	5 out of the 40 articles	12, ½%
Social skills	5 out of the 40 articles	12, ½%
Technology literacies	2 out of the 40 articles	5%

Based on Table 4 findings, this approach encourages teachers to adjust their classrooms to different learning styles by offering a multimodal classroom environment where students can simultaneously have different resources (audio, video, text, images, and others). We agree with Wanget et al. (2022) and Liu et al. (2021) that such methodology helps teachers create learning opportunities that foster students' individualized learning by offering opportunities to adjust to their differentiated learning styles. One explanation for why DGBL boosts personalized education is that it reduces anxiety, allows students to be self-directed, monitors their progress, and leads apprentices to take responsibility for their learning process by taking ownership and controlling their EFL progression. DGBL can be a self-paced, adjustable, and easy feedback giver and grade tracker so learners can have control of their learning process. To help students do so, we recommend that teachers use game tasks and activities that show students their progress and provide suggestions on overcoming mistakes. One potential alternative may be Blooket, Guimkit, and Quizlet. These game-based pages are easy to use; students can see their results and identify areas for growth. Yet, someone may argue that these games are unsuitable for secondary education because they are less likely to be relevant to students' interests and ages. Nevertheless, these games can fit any learning context, level, and range of ages.

Further, we agree with Hartt et al. (2020) and Umamah and Saukah (2022) that DGBL can augment accessibility by offering immediate feedback, increasing autonomy, and accommodating students' needs. Digital games can help teachers adjust their education to different levels of competencies they may have in their classrooms. For example, teachers can design a multilevel match to differentiate the type of learners that typically an EFL classroom can have (basic, intermediate, or advanced). This can be done by providing more flexible ways (audio, visual, infographic, diagrams, videos, pictures) to present the content area or incorporating interactive clues (words, phrases, facial expressions, photos, prompts, or any other) so that students can count with alternative input that can allow them to more possibilities to comprehend the topics that will be taught. Although some might argue that teachers provide similar instruction in regular classrooms, the exposure and quality of content in a digital presentation can often be more prosperous than what is typically delivered in a traditional classroom setting. One way to introduce DGBL with that purpose is to start with digital games and tools such as Genially, online discussion forums, Bamboozle, or ESL Games World. Teachers can gradually integrate these games into the teaching

repertoire and evaluate if they match students' interests, learning goals, contexts, and levels.

Additionally, Liu et al. (2021) and Hartt et al. (2020) approved that DGBL could become an alternative methodology to build autonomy by designing games that allow students to pace and self-direct the learning process. In DGBL classes, students can have more opportunities to reflect on their learning than in a typical classroom. Games lead students to focus on their next move, analyze alternatives to complete the exercises or tasks and take ownership of their learning process because they have immediate feedback that guides them in working on their weak areas. One may suggest that this could be done in a regular classroom. Mohanty et al. (2021) and Su (2023) stated that game-based instruction extends constant exposure to redo, reorganize, and re-edit the assignments as often as possible. In a regular classroom, the students must wait until the teachers evaluate and suggest areas to overcome. Sometimes, the number of students, the level of competencies, and the time-frequency can delay feedback. Therefore, DGBL can be a strategy to encourage students to self-monitor their academic progress. From our experience, DGBL creates a culture that welcomes and appreciates feedback as a learning opportunity. Students receive input from game team members, peers who may be more knowledgeable in the subject matter, and teachers.

Lee (2019), Mohanty et al. (2021), Kazu, İbrahim, and Kuvvetli (2023) argued that this method works as an additional teaching pedagogy to encourage students to generate ideas, compare responses, and self-assess their work. Game-based tasks demand students to differentiate, organize, contrast, examine, and evaluate the most beneficial moves to complete the proposed assignment. While doing this, students discover ways to play the game, compare ideas with their classmates, debate, evaluate, and finally decide how to finish the games. They also need to make decisions, negotiate, and generate alternative ideas on how to be the victors. Students work hard to be original and flexible to elaborate the best response to become the game's winners. Finding the best solutions to complete and win the game may lead students to classify, describe, explain, and identify the best way to complete the task. Such a course of action may suggest that DGBL can enhance HOT thinking skills such as deep/critical thinking, problem-solving, decision-making, and creative thinking. DGBL helps teachers create and apply assignments to experience how to solve daily life problems.

Further, Wang et al. (2022) and Yang et al. (2019) suggested that the students can also judge, select, and evaluate how to design, formulate, and construct the last version of the assignment product. Students may examine the game to identify what steps they need to take to complete it; they can break down their facts, ideas, or data and find the answers to the questions and the best ways to conclude. Students may decide whether the stages they choose to take are suitable or not to settle the game. Once they have done this, they may explore how to negotiate and work with their classmates to find the best ways to meet the game requirements. Learners create an environment of refinement, review, and decision-making that assists them in developing the intellect to play the game skilfully and masterfully. Considering that the narrative suggests that EFL instructors have seemed like the teaching professionals who implement HOT skills.

In a typical DGBL classroom setting, tech-savvy students can highlight their skills within their groups and help their teammates learn how to play the game. Through this, they teach their peers game-based, including how to operate the game, understand procedures, use tactics, and make necessary moves to complete assignments. In our experience as EFL teachers, we have observed students from diverse cultural backgrounds sharing how game rules differ from country to country, how to operate the games, and how to complete them. Although implementing educational games can be challenging—requiring consideration of factors such as cultural diversity, group size, resource types, time allocation, and necessary procedures—we have found that DGBL can be integrated into EFL education by adapting and designing games that match students' interest, meet the learning goal, and are appropriate to students rage of ages and culture. As games are a product of culture, each student in the class can have the opportunity to discover how their classmates engage with games in different contexts. This interaction can allow students to learn about their peers' behaviors, rules, practices, and perspectives as they participate in the gameplay. Such experiences help students navigate and understand diverse cultural backgrounds. In multicultural countries, this kind of cooperation can also be crucial for assisting international students to feel welcomed and integrated, and it may also help break down cultural shocks.

We supported Nguyen (2020), Rachayon and Soontornwipast (2019), and Wang et al. (2022) because they all approved that DGBL may be a pedagogical strategy to enhance such skills by using games that encourage decision-making by exposing students to multiple problem-based games. The nature of DBL differs from that of a regular classroom (do not apply DGBL); this methodology can introduce a high-order level of scrutiny, inquiry, and synthesis because students play games that demand them to reflect on their decisions before they make their moves. Hence, they need to have more than one idea of how to resolve the problem. DGBL can lead students to picture other payers' strategies, predict future moves, hypothesize on the best alternative stages to complete a gameplay and verify or eliminate suppositions to augment the opportunities to complete such tasks. In other words, they can develop metacognitive skills that allow them to adapt their thinking to anticipate the advantages and disadvantages of making moves in the game. They can prototype their responses and assess and mirror them before making them. Such a level of strengthening thought plays a significant role in enhancing HOT competencies. Teachers may apply well-known games such as Quizlet, Kahoot, and Quizzes. Alternatively, they can use other more advanced games such as Kerbal Space Program, Minecraft, and The Witness to foster thinking skills.

Unlike the competitive nature of traditional game-based instruction, DGBL fosters a cross-cultural collaborative atmosphere in EFL lessons, where learners from diverse backgrounds and learning styles can work together. Umamah and Saukah (2022), Hartt et al. (2020), and Jackson (2018) all agree that this methodology encourages students to work in pairs, engage in peer correction, and develop teamwork. However, these insights must address how teachers can create a cross-cultural environment in EFL instruction. Alawadhi and Abu-Ayyash (2021) and Durriyah and Zuhdi (2018) expressed that DGBL promotes a collaborative learning culture by introducing a synergistic social environment where learning

becomes a collective effort. Students share opinions, combine strengths, exchange ideas, and discuss how to complete the games in teams or small groups. This engagement can build a solid group rapport, advancing language and cultural competencies among students. Cooperation in this setting supports effective communication, respect, group cohesion, mutual understanding, and shared responsibility.

Müller (2018) and Rinekso et al. (2021) believed that in a typical DGBL classroom setting, tech-savvy students can highlight their skills within their groups and help their teammates learn how to play the game. Through this, they teach their peers game-based, including how to operate the game, understand procedures, use tactics, and make necessary moves to complete assignments. In our experience as EFL teachers, we have observed students from diverse cultural backgrounds sharing how game rules differ from country to country, how to operate the games, and how to complete them. Although implementing educational games can be challenging—requiring consideration of factors such as cultural diversity, group size, resource types, time allocation, and necessary procedures—we have found that DGBL can be effectively integrated into EFL education in many ways to maximize its benefits. As games are a product of culture, each student in the class can have the opportunity to discover how their classmates engage with games in different contexts. This interaction can allow students to learn about their peers' behaviors, rules, practices, and perspectives as they participate in the gameplay. Such experiences help students navigate and understand diverse cultural backgrounds. In multicultural countries, this kind of cooperation can also be crucial for assisting international students to feel welcomed and integrated, and it may also help break down cultural shocks.

6. Conclusion

This study ascertained the practical implications of Digital Game-Based Learning (DGBL) in developing higher-order thinking, social skills, personalized learning, and language performance in secondary EFL education. We conducted a meta-analysis of 30 research studies on DGBL, and based on the findings, DGBL can be an alternative teaching strategy to enhance higher-order thinking skills by implementing game-based tasks such as problem-based, project-based, and open-ended questionnaires. Implementing such game-based tasks maximizes thinking abilities, including analyzing, evaluating, synthesizing, and drawing conclusions when completing an assignment. To achieve this, teachers can apply case studies, surveys, and open-ended questionnaire assignments that require students to brainstorm ideas, share their opinions, negotiate, and discover ways to complete the case. At the same time, this study demonstrated that DGBL can increase collaboration, pair work, peer correction, and teamwork by fostering a collaborative culture where learning may result from sharing opinions, linking ideas, and negotiating with classmates to complete a game-based assignment. However, we recommend that teachers implement digital game-based assignments as a trial-and-error methodology until they feel confident using them or find games that support group work, provide meaningful feedback, allow students to play different roles, and grow as a learning community. We recognize that finding, adjusting, or designing educational games that match every teaching setting and content area may be hard. Meanwhile, teachers can use DGBL to

encourage students to develop their skills in self-correcting and self-evaluating their academic performance during and after completing an assignment.

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