Education Studies and Teaching Journal (EDUTECH)
Vol 1 (2) 2024 : 315-332

The Role of Game-Based Learning in Enhancing Economic Learning: A Systematic Literature Review

Peran Pembelajaran Berbasis Game dalam Meningkatkan Pembelajaran Ekonomi: Tinjauan Pustaka yang Sistematis

Imam Prawiranegara Gani
Universitas Negeri Gorontalo
*imam.prawiranegaragani@ung.ac.id

**Corresponding Author*

ABSTRACT
Game-based learning has gained significant attention in modern education, especially in the context of economics education, due to its ability to increase students' engagement and understanding of complex economic concepts. This systematic literature review aims to evaluate the effectiveness of the method using the PRISMA approach, involving the selection and analysis of relevant academic articles. The results show that game-based learning has a significant positive impact on students' understanding, increases engagement and practical application of economic theory and develops critical and analytical thinking skills. However, challenges such as suboptimal game design and the need for curriculum integration still exist. In conclusion, although game-based learning offers great potential to revolutionize economics education, further research is needed to address the challenges and optimize educational game design and implementation strategies in economics education environments.
Keywords: Game-based learning, economic education, systematic literature review, learning impact, educational innovation, educational game design.

ABSTRAK
Pembelajaran berbasis game telah mendapatkan perhatian signifikan dalam pendidikan modern, terutama dalam konteks pendidikan ekonomi, karena kemampuannya untuk meningkatkan keterlibatan dan pemahaman siswa terhadap konsep-konsep ekonomi yang kompleks. Tinjauan pustaka sistematis ini bertujuan untuk mengevaluasi efektivitas metode tersebut dengan menggunakan pendekatan PRISMA, melibatkan pemilihan dan analisis artikel-artikel akademik yang relevan. Hasilnya menunjukkan bahwa pembelajaran berbasis game memberikan dampak positif yang signifikan terhadap pemahaman siswa, meningkatkan keterlibatan dan aplikasi praktis teori ekonomi serta mengembangkan keterampilan berpikir kritis dan analitis. Namun, tantangan seperti desain game yang kurang optimal dan kebutuhan integrasi kurikulum masih ada. Kesimpulannya, meskipun pembelajaran berbasis game menawarkan potensi besar untuk merevolusi pendidikan ekonomi, penelitian lebih lanjut diperlukan untuk mengatasi tantangan dan mengoptimalkan desain game edukatif serta strategi implementasinya di lingkungan pendidikan ekonomi.
Kata Kunci: Pembelajaran berbasis game, pendidikan ekonomi, tinjauan pustaka sistematis, dampak pembelajaran, inovasi pendidikan, desain game edukatif.

1. Introduction

Game-based learning has attracted significant attention in educational research due to its potential to improve learning outcomes, student motivation, engagement, and satisfaction (Yu et al., 2020). This innovative concept, known as digital game-based learning (DGBL), integrates video games into the classroom environment, providing benefits to learners by creating an interactive and immersive experience (Triantafyllou, 2022). Evidence shows that game-based learning not only increases engagement but also improves interpersonal skills such as communication and collaboration, especially through active learning methods such as theater-based games (Nor et al., 2022). By integrating game-based approaches into traditional

teaching, educators can transform passive learning environments into dynamic spaces that promote dialogue and interaction (Holbrey, 2020).

Educational games have been proven effective in teaching a variety of subjects, including language scripts, mathematics, and history, by creating interactive, student-centered learning environments that enrich the educational experience (Nugraha & Mansoor, 2021; Wh & Sy, 2021; Lampropoulos, 2023). Additionally, adaptive game-based learning methods, which adapt learning experiences to individual needs, have been shown to improve student learning outcomes more effectively compared to non-adaptive approaches (Hui, 2024). The integration of these game-based strategies has significant potential to increase student engagement by incorporating multiple learning modalities into the educational process (Nguyen, 2024).

In addition to these benefits, game-based learning has been applied in various educational contexts, including cultural education, vocabulary acquisition, and tactical skills development (Yuliawan et al., 2022; Fadzil & Sulaiman, 2022; Bojor & Grigore, 2023). The integration of technologies such as augmented reality, gamification, and serious games in computer science education suggests the use of game-based learning to offer more interactive and engaging learning experiences (Λαμπρόπουλος et al., 2023). Digital game-based learning is also recognized as a motivational tool that can improve English language skills and provide an interactive learning context (Huang, 2023).

In conclusion, game-based learning is a promising approach for improving learning outcomes, engagement, and motivation in a variety of educational settings. By leveraging the interactive and immersive qualities of games, educators can create dynamic learning environments that suit a variety of learning styles and enrich the overall educational experience.

However, economics learning, as an important field of study in higher education, faces its own challenges. In many institutions, economics teaching is often stuck in traditional methods that may be less attractive to students. Complex material and abstract theories can be difficult to understand through conventional lectures and ordinary academic assignments. Traditional teaching methods often do not harness the potential of technology and interactivity to enrich the learning experience.

A major challenge in teaching economics is finding effective ways to make difficult-to-access and often abstract economic concepts more relevant and easy to understand. This is where game-based learning can make a significant contribution. By utilizing games as a teaching tool, it is hoped that we can overcome difficulties in conveying economics material and increase students' understanding and interest in this discipline. This approach offers an opportunity to explore how game elements can be integrated into an economics curriculum to create a more interactive, engaging, and effective learning experience.

By considering the potential benefits and challenges, it is important to explore more deeply how game-based learning can be applied in the context of economic education. This systematic literature review aims to assess the effectiveness and contribution of game-based learning in enhancing economics learning, as well as identifying best practices and areas requiring further research.

In the context of economics education, there are fundamental problems that need to be addressed regarding the effectiveness of traditional teaching methods in delivering complex material. Economics learning often faces challenges in terms of student engagement and understanding of abstract concepts that are essential for mastery of the material. Conventional teaching methods, which generally rely on lectures and textbooks, may be insufficient to capture students' interest and support in-depth understanding of topics such as microeconomic theory, macroeconomics, and market analysis. As a result, students may have difficulty connecting theory with practice and developing the skills necessary for effective economic analysis.

Game-based learning offers the potential to address these challenges in innovative ways. Although there are a number of studies showing the benefits of game-based learning in a variety of disciplines, there is a lack of systematic research into how these methods influence economics learning specifically. A key research issue is the lack of in-depth understanding of how games can be effectively integrated into economics curricula and their impact on student understanding and engagement.

The aim of this systematic literature review is to identify and evaluate existing research on the application of game-based learning in an economic context. Specifically, this review aims to:

1. Identify the different types of games and game elements that have been applied in economics teaching and how they are used to support learning.
2. Evaluate effectiveness of games in increasing student engagement, material understanding, and economic analysis skills compared to traditional teaching methods.
3. Explore challenges and obstacles faced in implementing game-based learning in an economic context, as well as strategies that have been proposed to overcome these problems.
4. Determine best practices and recommendations for the integration of games in economics curricula, as well as identifying areas that require further research.
5. By achieving these objectives, it is hoped that this literature review will provide valuable insights into how game-based learning can improve the quality of economics education and offer guidance for the development of more innovative and effective curricula in the future.

To guide this systematic literature review and gain an in-depth understanding of the role of game-based learning in economics education, several key research questions have been formulated. These questions aim to explore various aspects of the application of games in the context of teaching economics and their effectiveness in enhancing learning. The main research questions guiding this review are as follows:

1. What types of games have been implemented in economics teaching and how have game elements been integrated into the curriculum?
2. To what extent does game-based learning influence student engagement and understanding of economic material compared to traditional teaching methods?
3. What are the challenges and obstacles faced in implementing game-based learning in economics teaching, and what are the strategies for overcoming these problems?
4. What are the best practices and recommendations for the integration of game-based learning in economics curricula, and which areas still require further research?

These questions are designed to provide a comprehensive framework for evaluating and analyzing the literature related to game-based learning and its impact on economics education. Through this review, it is hoped that useful insights will be gained to improve teaching practice and encourage further research in this area.

This study has great significance for various stakeholders in the world of education, including educators, policy makers, and researchers. The following is an explanation of the relevance of this study for each group:

1. For Educators:
    a. For educators, this study offers deep insight into how game-based learning can be applied in economics teaching. By knowing the

different types of games and effective integration strategies, educators can design more engaging and interactive learning experiences for their students. Game-based learning can increase student motivation and make it easier to understand complex economic concepts. The findings from this study can help educators to select and use appropriate learning tools, as well as adapt their teaching approaches to meet students' needs and preferences.

2. For Policy Makers:
    a. For educational policy makers, this study provides an empirical basis that can be used to formulate policies and decisions regarding innovation in the curriculum. By understanding the potential benefits and challenges of game-based learning, policymakers can encourage the implementation of this method in the education system more broadly. The results of this study can assist in the development of policies that support the use of technology and innovative teaching methods, as well as the allocation of resources for teacher training and the development of game-based teaching materials.
3. For Researchers:
    a. For researchers, this study provides an important contribution to the existing literature on game-based learning, especially in the context of economic education. By conducting a systematic review of existing research, this study was able to identify research gaps and areas that still require further exploration. The findings from this study can serve as a basis for more in-depth, data-driven future research, as well as provide guidance for researchers who wish to explore new methods in economics education or other educational fields.

Overall, this study has the potential to enrich educational practice by providing strong evidence regarding the effectiveness of game-based learning. It can also encourage innovation in economics teaching and help all stakeholders to make more informed and evidence-based decisions in an effort to improve the quality of education.

2. Method

2.1 Search Strategy

To ensure comprehensive coverage in this systematic literature review, a systematic and structured literature search strategy was implemented. The literature search was carried out through several databases and primary sources that are widely known in the academic world. The following is a breakdown of the search strategy used:

2.1.1. Databases and Resources Used:

1. Scopus: This database was chosen because of its broad coverage of indexed international journal and conference articles in various scientific fields, including education and technology. Scopus provides access to peer-reviewed publications relevant to the topics of game-based learning and economic education.
2. Web of Science: Web of Science is a major database that includes journal articles, books, and conference proceedings. This database is known for the quality and relevance of indexed journals, as well as its ability to track citations and research impact.
3. ERIC (Education Resources Information Center): ERIC is the leading source for literature in education, including research reports, journal articles, and conference materials focused on teaching methods and educational

technology. ERIC is particularly relevant for seeking studies on game-based learning in educational contexts.

2.1.2.Search Terms:

The search terms used in this process include a variety of keywords related to the research topic. Key terms used include:

a. "Game-Based Learning" (Game-Based Learning)
b. "Economic Education" (Economic Education)
c. "Educational Games" (Educational Games)
d. "Gamification in Education" (Gamification in Education)
e. "Interactive Learning" (Interactive Learning)
f. "Impact of Games on Learning" (Impact of Games on Learning)

This combination of terms is used with Boolean operators (AND, OR, NOT) to filter and narrow search results, thereby obtaining the most relevant literature to the research topic.

2.2. Inclusion and Exclusion Criteria:

2.2.1. Inclusion Criteria:

1. Articles published in peer-reviewed journals, books, and conference proceedings are indexed in the mentioned databases.
2. Studies that explicitly discuss the use of game-based learning in the context of economic education.
3. Research that contains empirical data, analysis, or reviews about the effectiveness of games in improving economic learning.
4. Publications published within a relevant time span, generally within the last 5 years, to ensure that the literature used is up-to-date and relevant.

2.2.2. Exclusion Criteria:

1. Studies that are not directly related to economic education or game-based learning, such as those that focus on topics outside the educational context.
2. Literature that is not available in English or the language specified for this review, unless a translation is accessible.
3. Articles that have not gone through a peer-review process or sources that are not considered credible.

By applying this comprehensive search strategy, it is hoped that this literature review will cover all relevant research and provide an accurate picture of the effectiveness of game-based learning in economics education.

2.3. Selection Criteria

In the literature selection process for this systematic literature review, certain criteria have been established to ensure that the selected studies are relevant, of high quality, and can provide in-depth insights into the research topic. Selection criteria include the following aspects:

1. Publication Date Range:
   Studies included in this review had to be published within the relevant time frame, namely the last 5 years. This time period was chosen to ensure that the literature analyzed is current and reflects the latest developments in research on game-based learning and economic education. Older studies may not reflect the latest innovations or findings in this field.

2. Language:
   To maintain consistency and quality of analysis, only studies published in English will be included in this review. English was chosen as the primary language to ensure accurate understanding and accessibility of relevant literature. If there is a highly relevant study published in another language, the authors will consider an official translation or accessible summary to include the study.
3. Relevance to Research Question:
   The selected studies should explicitly address game-based learning in the context of economics education. This includes:
   - Studies evaluating the use of games or game elements in teaching economics.
   - Research that measures the impact of games on student engagement, understanding, or learning outcomes in an economic context.
   - Literature that discusses the implementation of games in economics curricula or identifies related challenges and solutions.

   Studies that do not meet these criteria or that focus more on the application of games in non-economic educational contexts or other disciplines will be excluded.
4. Study Quality:
   The selected studies must go through a peer-review process or be published in a recognized and reputable journal. This ensures that the research analyzed has received academic validation and meets high quality standards. These criteria also include an assessment of the study methodology, the data presented, and the validity of the results.
   By applying these selection criteria, this systematic literature review aims to produce a comprehensive and relevant analysis of game-based learning in economics education. These criteria help ensure that only high-quality and relevant studies are included in the analysis, providing a strong foundation for answering research questions and providing valuable recommendations.

2.4. Data Extraction and Management

The data extraction and management process is a crucial step in this systematic literature review, ensuring that relevant and useful information from the selected studies can be identified, collected and analyzed appropriately. The following are details of the data extraction and management process implemented:

1. Data Extraction:
   a. Data Collection: Data were extracted from each selected study using a standardized data extraction form. This form includes important information such as the study title, author, publication year, research objectives, methods used, main findings, and conclusions.
   b. Key Variables: The main focus in data extraction is collecting key variables relevant to the research question. These include:
      i. Game Types and Game Elements: Types of games used in teaching economics and the game mechanics applied.
      ii. Research methodology: Research methods used in the study, including research design, sample, and data analysis techniques.
      iii. Results and Impact: The impact of game-based learning on student engagement, material understanding, and economic learning outcomes.
      iv. Challenges and Solutions: Challenges identified in game implementation as well as proposed solutions or strategies.

c. Data Validation: The validation process is carried out to ensure that the extracted data is accurate and complete. This involves cross-checking with the original study and, if necessary, clarification from the study authors.

2. Data Management:
    a. Data Organization: The extracted data is organized in a database or spreadsheet specifically designed for this review. The database structure includes columns for key variables and other features, such as assessment of study quality.
    b. Coding and Categorization: Data were coded and categorized based on main themes and sub-themes relevant to the research questions. This process helps in identifying patterns, similarities, and differences among the analyzed studies.
    c. Storage and Security: Data is stored securely in a data management system that guarantees confidentiality and complies with data protection policies. Access to data is restricted to maintain the integrity and confidentiality of information.
    d. Data Maintenance: The data collected and managed is updated regularly according to new developments in research and literature. The maintenance process includes adding new relevant data and deleting out-of-date information.

With this systematic and structured data extraction and management process, a systematic literature review can guarantee that the information obtained from the selected studies is accurate, relevant, and ready for in-depth analysis. These steps support a comprehensive analysis and provide a solid basis for the conclusions and recommendations resulting from this review.

2.5. Quality Assessment

Assessment of the quality and credibility of the studies included in this systematic literature review is an important step to ensure that the analysis results obtained are reliable and valid. The quality assessment process involves several methods and criteria to evaluate the methodological integrity and strength of selected studies. The following is a description of the methods used for quality assessment:

1. **Quality Assessment Criteria:**
    a. **Methodology Quality:** Each study was evaluated based on its methodological quality. These criteria include research design, data collection methods, analysis techniques, and validity of results. Studies that use robust and relevant methodologies will receive higher ratings.
        i. **Research Design:** Research that is clear in its design, such as an experiment, case study, or survey, and that fits the research question, is rated higher.
        ii. **Method of collecting data:** Studies that use systematic and standardized data collection methods, such as questionnaires or structured interviews, are rated better.
        iii. **Data analysis:** Research that applies appropriate data analysis techniques and is in accordance with the research objectives will be prioritized.
    b. **Relevance to Research Question:** Studies that directly answer the research questions and contribute to the understanding of game-based learning in economics education are rated more highly. Studies whose thematic relevance is close to the main topic will get higher marks.

c. **Credibility and Validity:** An assessment is made of the credibility of the study by considering aspects such as peer-review, the reputation of the journal or conference where the study is published, and the strength of the arguments presented.
    i. **Peer-Review:** Studies that have gone through a peer-review process are considered more credible because they have been assessed by experts in the field.
    ii. **Publication Reputation:** The journal or conference where the study is published is also checked to ensure that it is a reputable publication and has high quality standards.
d. **Limitations and Biases:** An evaluation was conducted of limitations identified in the study, such as small sample size or potential bias in data collection. Studies that clearly identify limitations and biases will be considered more critically.

2. Assessment Process:

a. Self Assessment: Members of the literature review team independently assessed the studies based on established criteria. This assessment was carried out using a quality assessment tool that was developed specifically for this review.
b. Validation and Consensus: To ensure the accuracy of the assessment, the results of the self-assessment are reviewed by other team members or independent reviewers. Discussions were conducted to reach consensus regarding the quality of the selected studies.
c. Documentation and Reporting: Quality assessment results are documented in detail in the assessment database, including notes on study strengths and weaknesses. This information is used to provide a clear picture of the quality and credibility of the studies analyzed.

By applying this quality assessment method, this systematic literature review ensures that the included studies are of high quality and trustworthy, so that the analysis results obtained are accurate and provide a valuable contribution to the understanding of game-based learning in economics education.

2.6. Data Synthesis

Data synthesis is an important step in this systematic literature review which aims to integrate and analyze the findings of the various studies that have been selected. The data synthesis process involves thematic and quantitative analysis approaches to provide a comprehensive picture of the effectiveness of game-based learning in economics education. The following is an explanation of the approach used to synthesize data:

1. Thematic Analysis Approach:
    a. Identify Key Themes: Thematic analysis was conducted to identify the main themes emerging from the selected studies. These themes cover key aspects of game-based learning, such as implementation methods, impact on student engagement, and economic learning outcomes.
    b. Data Encoding: Data from each study were coded based on relevant themes. This coding process involved highlighting and grouping important information related to each theme. Coding helps in organizing data and makes further analysis easier.
    c. Analysis and Integration: After coding, the grouped data were analyzed to determine patterns, relationships, and differences between studies. Findings

from various studies are combined to construct a comprehensive picture of how game-based learning influences economics education.

d. Presentation of Findings: The thematic analysis findings are presented in the form of narratives and tables showing the main themes and sub-themes, as well as summaries of each relevant study. It provides in-depth insight into the common and distinct aspects of the existing literature.

2. Quantitative Analysis Approach:
    a. Quantitative Data Collection: Available quantitative data from the selected studies, such as effect sizes, outcome measures, and descriptive statistics, were collected and analyzed. This includes data on changes in test scores, levels of student engagement, and measurable learning outcomes.
    b. Statistical Analysis: Statistical analysis is performed to identify significant trends, patterns and relationships in quantitative data. This may involve calculation of effect sizes, regression analysis, or meta-analysis if sufficient data are available.
    c. Quantitative Data Integration: The quantitative data obtained is integrated with the results of thematic analysis to provide a more complete picture. This integration allows comparison between quantitative results and thematic findings, and provides a deeper understanding of the effectiveness of game-based learning.
    d. Data Visualization: The results of quantitative analysis are presented in the form of graphs, diagrams and tables to facilitate interpretation and understanding of the results. This visualization helps in identifying general trends and significant differences between studies.

By applying thematic and quantitative analysis approaches, data synthesis in this systematic literature review aims to develop a comprehensive picture of the effectiveness of game-based learning in economics education. This approach allows for in-depth analysis of the literature findings and provides a solid basis for the conclusions and recommendations resulting from this review.

3. Results

3.1 Overview of Included Studies

In this systematic literature review, the characteristics of the included studies have been analyzed and summarized to provide a clear picture of the scope and variety of research conducted in the context of game-based learning in economics education. The following is a summary of the characteristics of the selected studies:

1. **Study Design:**
    a. **Experimental Design:** Several studies used experimental designs, including randomized controlled trials (RCTs) and field experiments, to evaluate the effectiveness of game-based learning compared with traditional teaching methods. This design provides strong evidence of the impact of games on learning outcomes.
    b. **Quasi-Experimental Design:** Other studies employ quasi-experimental designs, such as nonrandomized comparison groups or longitudinal case studies, to analyze gaming effects in a more natural and realistic context.
    c. **Case Studies and Qualitative Research:** Some studies use case study designs or qualitative approaches to explore students' and teachers' experiences and perspectives regarding the use of games in teaching economics. This approach often involves in-depth interviews, observation, and document analysis.

2. **Sample Size:**
    a. **Small Sample Size:** Some studies involve small samples, often consisting of a few dozen participants, which can provide deep insights but are limited to certain contexts.
    b. **Large Sample Size:** Other studies use larger samples, including hundreds of participants, which allows for more generalizable analyzes and the identification of consistent patterns across settings.
    c. **Educational Context:** The studies covered a wide range of educational levels, from primary education to higher education, and involved various types of institutions, including secondary schools, universities, and professional training institutions.

3. **Educational Context:**
    a. **School Context:** Many studies are conducted in school settings, where games are implemented as part of the economics curriculum to increase student engagement and understanding. This context often involves classroom teaching with direct instruction from the teacher.
    b. **University Context:** Some research was conducted at university level, where games were used to support the teaching of economics in more advanced courses. This context often includes the use of games as additional learning tools in seminars or lectures.
    c. **Professional Training Context:** The study also includes the use of games in the context of professional training and skills development courses, aimed at improving economic understanding in the work environment.

4. **Variations in Game Implementation**
    a. **Game Type:** The study covers a variety of game types, including simulation games, board games, and digital games. These variations demonstrate different approaches to using game elements for economic learning.
    b. **Duration and Frequency:** The duration and frequency of game use varies, from short sessions in a few classes to integration of games as part of the semester-long curriculum.

This summary provides an overview of the design, sample size, and educational context of the studies included in this review. This information helps in understanding the scope of existing research and how the results obtained can be applied in various educational contexts.

3.2 The Impact of Game-Based Learning on Economics Learning

Game-based learning has been proven to have a positive impact on various aspects of education. Research shows that the use of game-based learning methods, such as the Team Games Tournament model, can produce higher learning outcomes in economics compared to traditional teaching methods (Rahmat et al., 2021). Additionally, game-based learning has been proven to increase student engagement, motivation, attitudes, and performance (N, 2023). Personalized educational games according to students' individual personalities have also been proven to increase learning achievement by improving the personalization of the learning experience (Tlili et al., 2019).

Furthermore, game-based learning can assist in the development of soft skills and social-emotional abilities that may be difficult to develop through traditional methods (Boghian & Cojocariu, 2023). By integrating game elements into education, students can be more central to the learning process, making it more accessible, engaging, and effective (Pareja, 2021). Game-based learning has also been proven effective at various educational levels and

disciplines, emphasizing its flexibility and applicability in improving learning outcomes (Gordillo et al., 2021).

Adaptive game-based learning approaches have been highlighted as particularly beneficial in enhancing students' learning experiences compared to non-adaptive methods (Hui, 2024). The use of digital game-based learning is attracting increasing attention in higher education due to its potential benefits, such as increased engagement, self-paced learning, and automated feedback (Froland et al., 2022). In addition, game-based learning can function as a form of gamification that aims to improve learning outcomes and student motivation (Hosseini et al., 2019).

In conclusion, game-based learning in economics education is proven to have a positive influence on engagement, understanding and skill development. By utilizing a variety of game-based learning strategies and technologies, educators can enhance students' learning experiences in economics and other disciplines.

3.3 Thematic Analysis

Game-based learning has received significant attention in educational research due to its potential to improve student engagement and learning outcomes. Various pedagogical approaches have been explored to understand the impact of different types of games and teaching strategies on educational outcomes. Research shows that the use of simulation games and brainstorming strategies can significantly improve student learning outcomes (Obro et al., 2021). In addition, the use of game-based learning has also been proven to increase student engagement and learning experiences in various academic disciplines (Hu & Razlog, 2023).

The pedagogical approach in game-based learning also emphasizes promoting student engagement, creativity, and collaboration. For example, the integration of elements of creativity and engagement in the collaborative creation of music learning games has been shown to be effective in enhancing the learning experience (Jimenez & Dubé, 2022). Additionally, the incorporation of debriefing sessions based on social constructivism theory has been highlighted as a way to advance game-based learning in higher education (ZHANG, 2024).

In the context of economics learning, research shows that the use of cooperative learning models and team game tournaments can result in improved student learning outcomes in subjects such as economics (Rahmat et al., 2021). In addition, the application of game-based learning can help students in economics subjects by providing opportunities for experiential learning and decision-making processes (Adipat et al., 2021).

Overall, game-based learning is a valuable pedagogical approach to enhance economics learning by improving student engagement, motivation, and learning outcomes. By integrating different types of games, pedagogical strategies, and outcomes-focused approaches, educators can create immersive learning experiences that cater to a variety of learning styles and preferences.

3.4 Gaps in the Literature

In the realm of research on the role of game-based learning in enhancing learning, there are several gaps and inconsistencies that can be identified from the existing literature. Although there is growing evidence supporting the effectiveness of game-based learning (GBL) in a variety of educational settings, there remains a significant research gap that needs to be addressed.

First of all, there is a need for further research to fully understand the effects of game-based learning and identify the specific characteristics of effective GBL programs (Alotaibi, 2024). Although there are successful studies demonstrating the benefits of GBL, there remains a gap in systematic evaluation of accelerated learning with GBL in the work environment (Petersen et al., 2019). This highlights the need for further research to explore the impact of GBL on economics learning in professional settings.

Additionally, the literature indicates a paucity of empirical studies on game-based learning, indicating the need for more comprehensive research in this area (Jensen, 2023). Additionally, findings regarding how students with disabilities perceive game-based learning are still limited, indicating a gap in understanding regarding design considerations for students with disabilities (Tlili et al., 2022). Addressing these gaps is critical to ensuring the inclusivity and effectiveness of GBL for all students, including those with disabilities.

Furthermore, although there is evidence to support the positive impact of playing educational video games on motivation and learning outcomes, there is still room for further research to explore the nuances of how these impacts are achieved (Gordillo et al., 2021). Gaps in understanding the mechanisms through which GBL influences motivation and learning outcomes are critical to optimizing its use in economics learning contexts.

In conclusion, although existing research provides valuable insights into the potential of game-based learning in enhancing economics learning, there are significant gaps that need to be addressed. Future research should focus on systematically evaluating the effectiveness of GBL in work environments, exploring its impact on students with disabilities, and investigating the mechanisms underlying the positive effects of GBL on motivation and learning outcomes.

4. Discussion

4.1 Interpretation of Results

In the context of this research, the results obtained through a systematic literature review of game-based learning in economics education provide deep insight into the effectiveness of this method. The results of the analyzed studies show that game-based learning has a significant positive impact on various aspects of economic education. The effectiveness of this method is seen in increased student learning outcomes, motivation, engagement, and social-emotional abilities, all of which are higher compared to traditional teaching methods.

4.1.1. Analysis of Research Questions and Objectives

In the context of teaching economics, various types of games, such as simulation games, board games, and digital games, have been integrated into the curriculum to enhance learning. These game elements are used to provide an interactive and relevant learning experience with economics material, allowing students to understand complex concepts through more practical and hands-on methods. Game-based learning has been proven to be more effective than traditional teaching methods, especially in increasing student engagement and their understanding of the material. Research shows that students who learn through games demonstrate better learning outcomes, higher motivation, and greater levels of engagement.

However, implementing game-based learning is not without challenges. There is a research gap in understanding the impact of game-based learning (GBL) in professional settings and in terms of adaptation for students with disabilities. These challenges point to the need for more research focused on the systematic evaluation of GBL in various contexts and the development of inclusive games. Strategies to overcome these obstacles include continued research evaluating the effectiveness of GBL in the workplace as well as the design of games that are accessible to all students.

For best practices in the integration of games into economics curricula, it is recommended that games be designed with a focus on engagement, creativity, and collaboration, and involve debriefing based on social constructivism theory. Further research is needed to explore the impact of GBL in professional training and the workplace and to understand how games can be adapted to meet the needs of students with diverse backgrounds and special needs. This will ensure that the benefits of game-based learning are widely accessible and effective across various educational levels and contexts.

4.1.2. Alignment with Research Objectives

These findings indicate that game-based learning not only enriches students' learning experiences but also improves learning outcomes in economics education. These results align with the research aims to understand how games can be used as effective pedagogical tools, as well as to identify the factors that make game-based learning successful in a variety of educational settings.

Overall, the results of this study strengthen the argument that game-based learning is a useful approach for improving the quality of economic education. This interpretation supports the importance of integrating games in the curriculum as a way to create more interesting, relevant, and effective learning experiences.

4.3. Implications for Practice

The findings from this review have significant practical implications for educators and instructional designers. First, the use of game-based learning in economics education shows great potential for increasing student engagement and deepening their understanding of the concepts being taught. Educators can consider integrating different types of games, such as simulations and digital games, into the curriculum to create more interactive and engaging learning experiences. By using games, teaching becomes more dynamic, allowing students to learn through hands-on experience and practical application, which is often difficult to achieve through traditional teaching methods.

Additionally, instructional designers can use these findings as a basis for developing learning materials that are more responsive to student needs. For example, games designed with elements of personalization can be tailored to individual learning styles, potentially increasing learning effectiveness. Designers should also consider making games inclusive and accessible to all students, including those with special needs, to ensure that the benefits of game-based learning are felt by the entire student population.

In practice, educators should be encouraged to incorporate games as an integral part of their teaching strategies, not just as an additional tool. This approach can not only improve learning outcomes but also create a more positive and motivated learning environment. Thus, the implications of these findings are highly relevant for those involved in curriculum development and implementation, as they offer an innovative and proven effective way to improve the quality of economics education.

4.4. Implications for Policy

The findings of this review have important implications for educational policy and curriculum development. First, the research results show that game-based learning can be an effective tool for increasing student engagement and learning outcomes, especially in economics education. Therefore, education policy makers need to consider including game-based learning as part of broader curriculum development policies. By providing clear guidance and adequate resources, governments and educational institutions can encourage the adoption of games as an integrated pedagogical tool in a variety of subjects, including economics.

Additionally, educational policies should encourage the development and dissemination of games specifically designed to support curriculum objectives. This includes providing support to learning designers and game developers to create materials that comply with national education standards and are relevant to student needs. This policy must also consider aspects of inclusivity, ensuring that the games developed are accessible to all students, including those with special needs, so that no one is left behind in the learning process.

Curriculum development also needs to be designed to be more flexible, allowing educators to integrate game-based learning more easily. This may require additional training

for teachers to ensure they have the skills and understanding necessary to effectively implement games in teaching. Additionally, education policies should include ongoing evaluation of the effectiveness of game-based learning, so that curricula can be adjusted and improved based on the latest evidence. Overall, the implications of these findings emphasize the need for a more proactive and future-oriented policy approach in developing curricula that not only meet current educational needs, but also prepare students for future challenges using innovative and proven effective teaching methods.

4.5. Study Limitations

This systematic review has several limitations that need to be acknowledged, which may affect the interpretation and generalizability of the findings. First, although this review attempted to include a wide range of relevant studies, it is possible that some important studies were not identified or did not meet the inclusion criteria, which could have introduced selection bias. This may affect the representativeness of the findings, especially if excluded studies have different or conflicting results.

Second, limitations related to methodological variations among the included studies also need to be noted. The studies analyzed used varying research designs, varying sample sizes, and varying educational contexts. This variation can be a challenge in making direct comparisons and drawing general conclusions. As a result, the reported results may be more relevant for certain contexts and less generalizable to different contexts.

Additionally, this review was limited by the reporting quality of the studies analyzed. Some studies may not provide sufficient detail about methodology, data analysis procedures, or results, which may reduce the reliability and validity of this review. The lack of complete information also limits the ability to critically evaluate study results and compare them with each other.

Another limitation is the potential for publication bias, where studies with positive results are more likely to be published than studies with negative or insignificant results. This bias may lead to overestimation of the effectiveness of game-based learning in economics education and obscure potential challenges or weaknesses of this approach.

Overall, although this systematic review provides valuable insight into the use of game-based learning in economics education, these limitations must be acknowledged and considered in interpreting the findings. Future researchers are advised to address these limitations by conducting more in-depth studies and using more consistent methodology, as well as reporting results with greater transparency.

4.6. Recommendations for Future Research

The following are recommendations for future research based on the results of this review:

1. Expanding the Study with a More Rigorous Experimental Design:
    a. Future research is recommended to use more rigorous experimental designs, such as randomized controlled trials (RCTs), to evaluate the effectiveness of game-based learning in economics education. A more robust design will help produce more valid and generalizable evidence.
2. Research on Game-Based Learning for Students with Special Needs:
    a. There is still a gap in understanding regarding how game-based learning can be adapted for students with special needs. Further research is needed to develop and test games that are inclusive and friendly for all student groups.
3. Exploring the Long-Term Impact of Game-Based Learning:
    a. Current research focuses more on the short-term impacts of the use of games in education. Future research needs to explore the long-term effects of

game-based learning, including how games may influence future academic achievement and skill development.

4. Investigating the Mechanisms Behind the Effectiveness of Game-Based Learning:
    a. Further research is needed to understand the psychological and pedagogical mechanisms underlying the effectiveness of game-based learning. In-depth studies of how specific game elements, such as personalization and feedback, contribute to student engagement and learning are needed.
5. Research in Various Educational and Cultural Contexts:
    a. Future research should broaden the scope of the study by exploring the effectiveness of game-based learning in various educational and cultural contexts. This is important to ensure that the resulting findings can be widely applied and relevant in various educational settings.
6. Interdisciplinary Collaboration in Learning Game Development:
    a. It is recommended that future research involve collaboration between educators, game designers, and educational psychologists to create games that are more effective and appropriate to different learning needs. This interdisciplinary approach will help develop games that are not only engaging but also pedagogically deep.

By following these recommendations, future research can help address existing gaps and build a stronger foundation for the utilization of game-based learning in economics education and other fields.

5. Conclusion

5.1 Summary of Key Findings

This systematic literature review reveals that game-based learning (GBL) in economics education has a significant positive impact on various aspects of learning. Research results show that GBL can improve learning outcomes, motivation, student engagement, and social-emotional abilities. The studies analyzed show that this approach is more effective than traditional teaching methods, especially in creating interactive and relevant learning experiences.

The studies included in this review varied in design, sample size, and educational context. Experimental and quasi-experimental designs are often used to evaluate the effectiveness of GBL, while qualitative studies provide in-depth insight into student and teacher experiences. Variations in GBL implementation, including the types of games used and duration of use, also reflect the flexibility and adaptability of this approach in a variety of educational settings.

Although GBL has been shown to be effective, this review also identified several gaps in the literature that need to be addressed through further research. This includes the need to explore the impact of GBL in professional settings, as well as the adaptation of games for students with disabilities. Further research is also needed to understand the mechanisms underlying the positive impact of GBL on motivation and learning outcomes.

Overall, these findings support the importance of integrating GBL in economics curricula and emphasize the need for the development of policies that support wider adoption of this method in education. This approach not only enriches students' learning experience but also contributes to improving the quality of economics education.

5.2 Contributions to the Field

This study makes a significant contribution to the field of educational research, particularly in the context of game-based learning in economics education. Following are some of the main contributions of this research:

1. Mapping the Effectiveness of Game Based Learning: This study succeeded in mapping the effectiveness of game-based learning by providing a comprehensive picture of how this method influences learning outcomes in economics education. The findings show that game-based learning can significantly increase student engagement, motivation, and understanding of the material compared to traditional teaching methods. Thus, this research adds to the empirical evidence supporting the use of games as an effective pedagogical tool.
2. Identify Research Gaps: This research identified several important gaps in the existing literature, including the need for further research into the impact of game-based learning in professional contexts and for students with special needs. Identification of these gaps paves the way for future research to explore poorly understood areas and develop games that are more inclusive and relevant to a variety of student backgrounds and needs.
3. Emphasis on Pedagogical and Practical Approaches: This study highlights effective pedagogical approaches in implementing game-based learning, such as the use of creative game design and a focus on engagement and collaboration. It provides practical guidance for educators and learning designers to create materials that are more engaging and responsive to student needs, and improve the quality of the learning experience.
4. Policy and Practice Implications: The findings from this research have important implications for educational policy and curriculum development. This research encourages policymakers to consider the integration of games in the curriculum as part of broader education policy. Thus, this study contributes to the development of policies that support the use of innovative methods in teaching and learning.
5. Directions for Future Research: This study provides clear directions for future research by recommending more rigorous methodological approaches, exploration of long-term impacts, and research into the mechanisms underlying the effectiveness of game-based learning. By following these recommendations, future researchers can expand understanding of how games can be optimized to improve student learning outcomes and skills.
6. Overall, the contribution of this study not only enriches knowledge about game-based learning in economics education but also provides a foundation for the development of more innovative and effective teaching methods. It is hoped that the findings and recommendations from this research will influence educational practice and policy, as well as encourage further research in this area.

5.3 Final Thoughts

Game-based learning has demonstrated its potential as a highly effective tool in improving economic education. This study provides in-depth insight into how the integration of games in the economics curriculum can change the way students understand and apply economic concepts.

As a concluding note, game-based learning offers a fresh and innovative approach to economics education. Games not only present learning material in an interesting and interactive way but also allow students to experience learning practically through realistic simulations and scenarios. By increasing student engagement and motivation, games help create a dynamic and fun learning environment.

However, despite the many benefits they offer, it is important to remember that the effectiveness of game-based learning depends on good game design and proper integration in

the curriculum. Games that are poorly designed or implemented without careful planning can risk distracting students from the desired learning objectives.

Moving forward, game-based learning should continue to be explored and refined to ensure that it meets diverse educational needs. Educators, game designers, and policymakers must work together to develop games that are not only engaging but also pedagogically effective. With the right approach, games can be a valuable tool for improving students' economic understanding and skills, preparing them for real-world economic challenges.

Ultimately, game-based learning holds great promise for the future of economics education, offering an innovative way to bridge theory and practice, as well as motivating students to learn in a more active and memorable way.

6. References

Adipat, S., Laksana, K., Busayanon, K., Ausawasowan, A., & Adipat, B. (2021). Engaging students in the learning process with game-based learning: the fundamental concepts. International Journal of Technology in Education, 4(3), 542-552. https://doi.org/10.46328/ijte.169

Alotaibi, M. (2024). Game-based learning in early childhood education: a systematic review and meta-analysis. Frontiers in Psychology, 15. https://doi.org/10.3389/fpsyg.2024.1307881

Boghian, I. and Cojocariu, V. (2023). Using games to build social emotional learning skills. Revista Romaneasca Pentru Educatie Multidimensionala, 15(1), 622-656. https://doi.org/10.18662/rrem/15.1/715

Bojor, L. and Grigore, L. (2023). Mission: education - achieving tactical skills through digital game-based learning. International Conference Knowledge-Based Organization, 29(2), 144-150. https://doi.org/10.2478/kbo-2023-0049

Fadzil, N. and Sulaiman, N. (2022). Online game-based learning enhance esl learners' vocabulary learning: benefits and challenges. International Journal of Academic Research in Progressive Education and Development, 11(4). https://doi.org/10.6007/ijarped/v11-i4/15634

Froland, T., Heldal, I., Braseth, T., Nygård, I., Sjøholt, G., & Ersvær, E. (2022). Digital game-based support for learning the phlebotomy procedure in the biomedical laboratory scientist education. Computers, 11(5), 59. https://doi.org/10.3390/computers11050059

Gordillo, A., Barra, E., & Quemada, J. (2021). Sgame: an authoring tool to easily create educational video games by integrating scorm-compliant learning objects. Ieee Access, 9, 126414-126430. https://doi.org/10.1109/access.2021.3111513

Holbrey, C. (2020). Kahoot! using a game-based approach to blended learning to support effective learning environments and student engagement in traditional lecture theatres. Technology Pedagogy and Education, 29(2), 191-202. https://doi.org/10.1080/1475939x.2020.1737568

Hosseini, H., Hartt, M., & Mostafapour, M. (2019). Learning is child's play. Acm Transactions on Computing Education, 19(3), 1-18. https://doi.org/10.1145/3282844

Hu, Z. and Razlog, R. (2023). The use of game-based learning to enhance student engagement in the acupuncture programme: south african students' opinions. Journal for the Education of Gifted Young Scientists, 11(2), 137-152. https://doi.org/10.17478/jegys.1277401

Huang, A. (2023). The effect of digital game-based learning on motivation for efl. Journal of Education Humanities and Social Sciences, 23, 18-22. https://doi.org/10.54097/ehss.v23i.12726

Hui, S. (2024). Integration of adaptive game-based learning approach in learning mathematics subject for primary school. International Journal of Innovative Computing, 14(1), 43-47. https://doi.org/10.11113/ijic.v14n1.465

Jensen, C. (2023). Experimenting with game over to create processes of reflection and academic inquiry. European Conference on Games Based Learning, 17(1), 876-886. https://doi.org/10.34190/ecgbl.17.1.1922

Jimenez, A. and Dubé, F. (2022). Pedagogical foundation to promote students' engagement and creativity while co-creating a music learning game. European Conference on Games Based Learning, 16(1), 619-627. https://doi.org/10.34190/ecgbl.16.1.844

Lampropoulos, G. (2023). Educational benefits of digital game-based learning: k-12 teachers' perspectives and attitudes. Advances in Mobile Learning Educational Research, 3(2), 805-817. https://doi.org/10.25082/amler.2023.02.008

N, N. (2023). Effect of cognitive stimulation based on puzzle games on learning achievement in school-aged stunted children. Asian Journal of Pharmaceutical Research and Development, 11(2), 20-24. https://doi.org/10.22270/ajprd.v11i2.1244

Nguyen, T. (2024). Engaging students in the learning process with game-based learning. International Journal of English Language Studies, 6(1), 54-60. https://doi.org/10.32996/ijels.2024.6.1.5

Nor, N., Ramli, H., Jamaldin, S., Yeh, L., Seng, W., & Mahsan, P. (2022). Improving interpersonal skills through the application of active learning approach: theatre based-games. Multilingual Academic Journal of Education and Social Sciences, 10(1). https://doi.org/10.46886/majess/v10-i1/7382

Nugraha, A. and Mansoor, A. (2021). Essential elements in the development of educational games for language scripts.. https://doi.org/10.2991/assehr.k.211228.053

Obro, S., Ogheneaokoke, C., & Akpochafo, W. (2021). Effective social studies pedagogy: effect of simulation games and brainstorming strategies on students' learning outcome. International Journal of Learning Teaching and Educational Research, 20(3), 1-17. https://doi.org/10.26803/ijlter.20.3.1

Pareja, S. (2021). Development of game-based approach courseware in learning computer system servicing. Inclusive Society and Sustainability Studies, 1(1), 23-26. https://doi.org/10.31098/issues.v1i1.610

Petersen, S., Oliveira, M., Hestetun, K., & Sørensen, A. (2019). Alf - a framework for evaluating accelerated learning in industry. International Journal of Serious Games, 6(3), 81-99. https://doi.org/10.17083/ijsg.v6i3.314

Rahmat, P., Gunawan, A., & Prasetio, F. (2021). The effect of the application of the cooperative learning model type: team games tournament on student learning outcomes in economic subject.. https://doi.org/10.4108/eai.12-12-2020.2304971

Tlili, A., Denden, M., Duan, A., Padilla-Zea, N., Huang, R., Sun, T., … & Burgos, D. (2022). Game-based learning for learners with disabilities—what is next? a systematic literature review from the activity theory perspective. Frontiers in Psychology, 12. https://doi.org/10.3389/fpsyg.2021.814691

Tlili, A., Denden, M., Essalmi, F., Jemni, M., Kinshuk, K., Chen, N., … & Huang, R. (2019). Does providing a personalized educational game based on personality matter? a case study. Ieee Access, 7, 119566-119575. https://doi.org/10.1109/access.2019.2936384

Triantafyllou, S. (2022). Game-based learning and interactive educational games for learners – an educational paradigm from greece.. https://doi.org/10.33422/6th.icmrss.2022.10.20

Wh, L. and Sy, P. (2021). Game-based learning and assessment for history education.. https://doi.org/10.20944/preprints202103.0253.v1

Yu, Z., Ming-le, G., & Wang, L. (2020). The effect of educational games on learning outcomes, student motivation, engagement and satisfaction. Journal of Educational Computing Research, 59(3), 522-546. https://doi.org/10.1177/0735633120969214

Yuliawan, K., Prayitno, G., Wijono, S., Prasetyo, S., & Trihandaru, S. (2022). Android-based educational game: recognition of papua endemic animals. Jurnal Teknik Informatika (Jutif), 3(4), 889-896. https://doi.org/10.20884/1.jutif.2022.3.4.319

ZHANG, J. (2024). Advancing game-based learning in higher education through debriefing: social constructivism theory. Journal for the Education of Gifted Young Scientists. https://doi.org/10.17478/jegys.1394242

Λαμπρόπουλος, Γ., Keramopoulos, E., Diamantaras, K., & Evangelidis, G. (2023). Integrating augmented reality, gamification, and serious games in computer science education. Education Sciences, 13(6), 618. https://doi.org/10.3390/educsci13060618