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The Effectiveness of the Team Games Tournament (TGT) Cooperative Learning Model Supported by Digital Interactive Media: A Systematic Literature Review

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Abstract:

Education plays a pivotal role in shaping the development and sustainability of every nation, particularly in developing countries where educational advancement directly influences national progress. The Team Games Tournament (TGT) cooperative learning model has been recognized for its potential to enhance students' academic achievement, collaboration, and engagement. However, its effectiveness can be further optimized through the integration of digital interactive media that align with contemporary learning needs. This study aims to analyze the effectiveness of the TGT learning model supported by digital media through a Systematic Literature Review (SLR) complemented by bibliometric analysis using VOSviewer. Relevant empirical studies were identified and reviewed to explore trends, research gaps, and the overall impact of TGT in digital learning environments. The findings indicate that digital-assisted TGT not only fosters active learning and motivation but also enhances critical thinking and teamwork skills. This review highlights the importance of integrating cooperative learning models with digital innovations to promote more interactive, engaging, and effective educational experiences.

Key Words: Team Games Tournament (TGT), Cooperative Learning, Digital Interactive Media

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INTRODUCTION

Education plays a vital role in determining the growth, stability, and progress of every nation (Khomsiah et al., 2024; Sain et al., 2024). It is widely recognized as the backbone of human resource development, particularly in developing countries where educational quality directly affects economic, social, and technological advancement (Maulana et al., 2025; Najiburrahman et al., 2025). The continuous improvement of educational systems ensures that societies can adapt to global challenges and innovations. According to global education reports, nations with high literacy and digital competence levels tend to achieve better socioeconomic resilience and innovation capacity. Therefore, education must not only focus on knowledge transmission but also on cultivating creativity, collaboration, and problem-solving abilities. To achieve this, effective learning

models are essential to ensure that classroom activities align with 21st-century learning skills. In this context, research related to innovative pedagogical approaches—especially those integrating digital media—becomes highly relevant. Hence, this study addresses the crucial role of digital-supported cooperative learning in enhancing student engagement and learning outcomes.

Despite the recognized importance of education, many educational institutions—especially in developing regions—still rely heavily on traditional, teacher-centered instructional methods. The dominance of lecture-based and classical learning models often limits student participation, creativity, and collaboration. Such approaches tend to emphasize memorization rather than comprehension and critical thinking, leading to disengaged learners and suboptimal outcomes. Moreover, in an era characterized by rapid digitalization, students are increasingly exposed to technology outside the classroom, yet their educational experiences frequently fail to reflect this shift. This mismatch between students' technological familiarity and outdated pedagogical methods creates an urgent need for reform. Schools must adopt innovative models that promote active learning and teamwork while integrating digital tools to enhance motivation and accessibility. The challenge, therefore, lies in identifying and implementing effective learning frameworks that can bridge the gap between conventional pedagogy and modern digital learning environments.

In classroom practice, many teachers still struggle to diversify instructional strategies. They tend to focus solely on delivering content rather than facilitating interactive, student-centered learning. Observations in various schools indicate that most educators continue to use classical learning models that limit communication and collaboration among students. As a result, students often become passive listeners rather than active participants in the learning process. Teachers also face challenges in integrating digital tools due to limited technological literacy, inadequate infrastructure, or lack of training. Meanwhile, students show a strong preference for interactive and game-based learning experiences that stimulate curiosity and engagement. Empirical findings suggest that the use of educational games or interactive media can significantly enhance motivation and comprehension. However, the integration of such tools into structured pedagogical models remains limited. This gap highlights the need for an approach that combines cooperative learning principles with the engaging nature of digital interactivity.

Several studies have investigated cooperative learning models as an effective approach to improving students' academic and social skills. Among these, the Team Games Tournament (TGT) model has gained attention for its ability to blend competition, collaboration, and enjoyment in learning. Research by Adiputra and Heryadi (2021) demonstrated that TGT encourages teamwork and enhances students' enthusiasm through educational games and tournaments. Similarly, Fauziyah and Anugraheni (2020) emphasized the importance of cooperative strategies in fostering communication and collective

problem-solving. However, while many scholars highlight the potential of TGT in fostering engagement and performance, fewer studies have explored how digital media can be systematically integrated to enhance its outcomes. Existing literature often focuses on conventional TGT settings without considering how technological tools could expand accessibility and interactivity. Therefore, there is a need to synthesize existing evidence and identify how digital platforms may transform the dynamics and impact of TGT-based learning.

Other researchers have examined digital media in education, finding that interactive platforms significantly improve students' cognitive and affective learning experiences. Studies by Mardati (2021) and Syata et al. (2024) indicated that digital learning tools—when aligned with pedagogical goals—can increase learner motivation and engagement. However, most of these studies treated digital media as supplementary tools rather than integral components of a learning model. Consequently, there remains a research gap in understanding how digital media can be embedded meaningfully within structured cooperative learning models such as TGT. Moreover, few reviews have comprehensively analyzed trends and research directions related to TGT supported by digital media. This gap highlights the need for a systematic and bibliometric approach to mapping existing knowledge, evaluating effectiveness, and identifying research opportunities. The present study seeks to fill this gap by reviewing and synthesizing current literature through a rigorous methodological framework.

This study offers novelty by integrating two major educational paradigms: cooperative learning and digital interactivity. Unlike previous studies that examined TGT or digital media in isolation, this research systematically explores their intersection and evaluates their combined effectiveness in improving learning outcomes. By employing a Systematic Literature Review (SLR) and bibliometric analysis using VOSviewer, this study provides a comprehensive understanding of global research patterns, emerging themes, and future directions in TGT-based digital learning. The state of the art lies in revealing how digital tools—ranging from interactive applications to online platforms—enhance the dynamics of teamwork, competition, and engagement inherent in the TGT model. This integration is particularly relevant for modern education systems aiming to develop collaborative and technologically literate learners. Thus, the study contributes to educational innovation by offering a synthesized and evidence-based framework for implementing digital-supported cooperative learning.

Based on the identified gaps and emerging needs, this research formulates three key questions: (1) What types of digital interactive media are commonly used in the implementation of the TGT model? (2) To what extent are these media effective in improving the quality of learning? (3) What advantages and challenges arise from their application? Addressing these questions is essential for understanding how to maximize the pedagogical potential of TGT in digital contexts. Previous studies often provided fragmented findings, focusing on

either digital tools or cooperative learning, without examining their integration. Therefore, this research aims to offer a more holistic analysis, linking pedagogical theory with technological practice. By doing so, it seeks to support educators and policymakers in designing more engaging, inclusive, and adaptive learning environments that leverage both collaboration and technology.

This study argues that the integration of digital interactive media within the Team Games Tournament (TGT) learning model can significantly enhance students' engagement, collaboration, and learning achievement. The use of a Systematic Literature Review (SLR) and bibliometric analysis enables a structured exploration of previous research, allowing for the identification of consistent findings, gaps, and future research directions. The contribution of this study lies not only in summarizing existing evidence but also in proposing a conceptual framework for implementing TGT-based digital learning effectively. This approach can guide educators in developing adaptive instructional designs that align with digital transformation trends in education. Furthermore, the study underscores the importance of balancing competitive and cooperative elements in online learning to cultivate motivation and social skills. Ultimately, the findings aim to contribute to the broader discourse on educational innovation and sustainable pedagogical practices in the digital era.

RESEARCH METHOD

This study employs a Systematic Literature Review (SLR) combined with bibliometric analysis to comprehensively explore and synthesize existing research on the integration of digital interactive media within the Team Games Tournament (TGT) learning model. The SLR approach serves as a structured method for identifying, evaluating, and interpreting all relevant studies related to the research questions (Viora & Surya, 2025). This method allows researchers to obtain a holistic understanding of current developments, summarize the accumulated knowledge in the field, and identify potential gaps that require further investigation. The selection of the SLR approach is based on the availability of relevant scholarly articles that have undergone rigorous academic review. The main objective of this review is to develop a deeper understanding of how digital interactive media are utilized to enhance collaborative and teambased learning environments. To ensure a comprehensive data set, relevant literature published between 2020 and 2025 was collected from Google Scholar, using targeted search terms related to "Team Games Tournament" and "Digital Interactive Media."

In addition to the SLR, a bibliometric analysis was conducted to examine publication trends, research productivity, and collaborative networks among authors and institutions. Bibliometrics, as a subfield of information science, focuses on the quantitative analysis of academic publications, assessing relationships among research outputs, authors, institutions, and thematic domains (Rohmandika et al., 2023). This study utilized Google Scholar as the

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primary data source and applied VOSviewer software to visualize bibliometric networks, including citation dynamics, keyword co-occurrences, and authorship collaborations. The integration of bibliometric mapping with systematic review methods provides both qualitative and quantitative perspectives, revealing research trends, thematic evolution, and intellectual structures in the field.

Through this combined methodological approach, the study seeks to capture not only the theoretical and pedagogical insights on the use of digital interactive media in TGT-based learning but also the broader landscape of scholarly contributions. The process includes identifying relevant literature, applying inclusion and exclusion criteria, extracting key thematic data—such as media types, effectiveness, and implementation challenges—and conducting an in-depth content analysis. The resulting synthesis and visualizations aim to present an integrated understanding of the topic, guiding future research directions and educational practices in digital-enhanced cooperative learning.

Table 1. Inclusion and Exclusion Criteria

Aspects	Criteria				
Inclusion	This research was conducted in the educational field, utilizing findings from				
	previous studies relevant to the topic at hand. The focus of this study was to analyze				
	and compare the effectiveness of the TGT (Team Games Tournament) cooperative				
	learning model.				
Enclusion	The publication presented was incomplete or only included an abstract. This				
	research was not written in English.				

Source: Processed Data, 2025

The data source was Google Scholar, utilizing combined keywords such as "TGT (Team Games Tournament)" and "Digital Interactive Media." Search results were filtered and exported to RIS and Excel formats for further processing. VOSviewer was used to visualize the relationships between keywords, authors, and research trends in the form of a bibliometric network.

The research question serves as a guideline that directs and focuses attention in conducting a study. In this study, the Research Question (RQ) addressed was

Table 2. Research Question

ID	Research Question	Motivation		
RQ 1	What digital interactive media are currently	Identifying the TGT (Team Games		
	being used in the learning process using the	Tournament) cooperative learning model		
	Team Games Tournament (TGT)	using digital interactive media.		
	cooperative approach?			
RQ 2	To what extent is the effectiveness of the	Evaluating the effectiveness of the TGT (Team		
	Team Games Tournament (TGT)	Games Tournament) cooperative learning		
	cooperative learning model supported by model using digital interactive medi			
	digital interactive media?			
RQ3	What are the advantages and challenges of	Examining the advantages and disadvantages		
	using the Team Games Tournament (TGT)	of the TGT (Team Games Tournament)		
	cooperative learning model supported by	cooperative learning model using digital		
	digital interactive media?	interactive media.		

Source: Processed Data, 2025

This research involved a series of meticulously executed procedures aimed at exploring the theme of the Effectiveness of the TGT (Team Games Tournament) Learning Model Assisted by Digital Interactive Media in Education. After identifying the sources, the researchers chose Google Scholar as the primary database to search for relevant articles aligned with the research objectives. To facilitate the search, they used the keywords "TGT (Team Games Tournament)" and "Digital Interactive Media" to ensure a targeted approach in gathering relevant literature.

After identifying articles that had successfully undergone the peer-review process and were available as open access, they exported these articles into Research Information System (RIS) and Microsoft Excel formats for further analysis. Exporting these two formats allows for greater flexibility in data manipulation and organization. The collected data was then processed using VOSviewer, a specialized tool designed for creating bibliometric network visualizations.

Using VOSviewer, the researchers aimed to produce a comprehensive visual representation depicting relationships and trends in the literature on the Effectiveness of the TGT (Team Games Tournament) Learning Model Assisted by Digital Interactive Media. This systematic approach not only enhances our understanding of the current research landscape, but also facilitates the identification of key contributors and emerging themes in this rapidly evolving field.

RESULT AND DISCUSSION

Result

What digital interactive media are currently being implemented in the learning process using the TGT (Team Games Tournament) cooperative approach?

Digital interactive media plays a crucial role in the implementation of TGT (Team Games Tournament) learning, as it serves as a tool to optimize active student participation in group-based learning (Damayanti et al., 2020). Currently, various types of digital interactive media have been utilized in the implementation of the TGT (Team Games Tournament) learning model, including web-based media, audiovisuals, images, cards, games, Canva, and collaborative platforms specifically designed to align with the characteristics of TGT (Team Games Tournament). These media are structured and interactively designed to provide realistic challenges that can broaden students' knowledge, increase their interest in learning, and foster active participation throughout the learning process.

The analysis presented in the figure above, processed using VOSviewers, is based on keywords defined by the author himself. Co-occurrence analysis was used to identify relationships between terms in the literature discussing

interactive media in learning. This method considers a maximum of three words per term, and from the overall data, only keywords with high frequency of occurrence were included in the visualization. The analysis results show that the most dominant keywords are "interactive" and "video," which form a central connection with other words such as "image," "audio," "interactive multimedia," "web," and digital platforms. These findings indicate that digital interactive media studied in current educational literature emphasizes the use of visual elements, multimedia, and the integration of internet-based technologies to support more engaging and meaningful learning.

Table 3. Digital Interactive Media in the Learning Process

No	Types of Digital Interactive Media	References/Authors
1	Web-Based Digital Interactive Media	(Ramadhani & Setiawan, 2025).
2	Audio-Visual-Based Digital Interactive Media	(Antari & Kusmariyatni, 2023).
3	Image-Based Digital Interactive Media	(Lestari et al., 2024).
4	Card-Based Digital Interactive Media	(Hairunisa & Abdurrahman, 2024).
5	Game-Based Digital Interactive Media	(Rahayu & Suryani, 2022).
6	Canva-Based Digital Interactive Media	(Putri et al., 2025).

To what extent is the effectiveness of the TGT (Team Games Tournament) cooperative learning model supported by digital interactive media?

A review by researchers of the TGT (Team Games Tournament) cooperative learning model supported by digital interactive media found that the use of the TGT (Team Games Tournament) cooperative learning model was effective.

Table 4. List of Final Results of Using Digital Interactive Media

No	Types of Digital Interactive Media	References/Authors	Effective/Not Yet Effective
1	Web-Based Digital Interactive Media	(Ramadhani & Setiawan, 2025).	Effective
2	Audio-Visual-Based Digital Interactive Media	(Antari & Kusmariyatni, 2023).	Effective
3	Image-Based Digital Interactive Media	(LESTARI et al., 2024).	Effective
4	Card-Based Digital Interactive Media	(Hairunisa & Abdurrahman, 2024).	Effective
5	Game-Based Digital Interactive Media	(Rahayu & Suryani, 2022).	Effective
6	Canva-Based Digital Interactive Media	(Putri et al., 2025).	Effective/Not Yet Effective

Based on the data in the table above, it can be concluded that the application of digital interactive media in Team Games Tournament (TGT)-based learning has proven effective, as seen from the validity and feasibility of the media development. This digital interactive media has the potential to be utilized by teachers and students as a learning resource that can be integrated with the Team Games Tournament (TGT) learning model. Furthermore, utilizing digital interactive media as a learning resource can improve learning outcomes, motivate students, foster learning interest, and broaden their knowledge and

insights.

What are the advantages and challenges of using the Team Games Tournament (TGT) cooperative learning model with the support of digital interactive media?

Interactive digital media in the context of learning is learning that combines information and communication technology to create educational tools, including interconnected hardware and the ability to transmit graphics, video, or audio using devices such as laptops, computers, projectors, tablets, smartphones, or digital TVs (Tiwow et al., 2025).

In this case, simply put, the role of learning media is as an intermediary or conveyor of learning messages, which are always closely related to the learning process (Heryani et al., 2022). The use of interactive multimedia as a learning medium can help overcome obstacles faced by students with varying learning styles. This media allows for direct interaction between students and learning resources (Damayanti et al., 2020).

Interactive digital media offers various advantages and challenges in learning implementation, including the ability to increase interest and motivation to learn, expand access to information sources, encourage collaboration among students, and facilitate understanding through visualization of learning materials (Hasanah et al., 2023). Disadvantages include dependence on technology, potential distractions, limited teacher skills in operating the media, technical constraints, and significant procurement and maintenance costs (Susianti, n.d., 2024).

Therefore, the use of interactive digital media must be carefully designed and implemented to maximize its benefits and minimize potential obstacles. Educators as mentors are required to possess the skills to efficiently handle and use these media to support each stage of Team Games Tournament (TGT) learning, including class presentations, group divisions, games, tournaments, and group recognition.

By integrating interactive digital media using the Team Games Tournament (TGT) learning model, it is hoped that this will motivate students, increase their interest, and foster active participation throughout the learning process in addressing real-world challenges, thereby maximizing mastery of 21st-era learning competencies.

Discussion

In today's educational landscape, digital interactive media have become a crucial component in learning processes across various levels of education, particularly in supporting the implementation of the Team Games Tournament (TGT) learning model. These media play a vital role in fostering students' active participation in exploration, discovery, and problem-solving, both individually and collaboratively. Through the integration of multiple formats—such as audio, video, text, graphics, and animation—digital interactive media deliver

instructional content in a dynamic and engaging manner (Ali et al., 2024). This multimodal approach enables students to construct knowledge through meaningful interactions, enhancing comprehension and retention.

Digital interactive media offer learners the opportunity to engage directly with learning materials through simulations, quizzes, and immersive visualizations. They also provide diverse learning experiences tailored to different learner preferences, whether visual, auditory, or kinesthetic (Desrita, 2025). Such diversity ensures inclusivity, allowing every student to learn according to their cognitive and perceptual strengths. Beyond supporting engagement and motivation, interactive media also contribute to a more vibrant online learning environment. Prior studies have shown that digital tools promote enthusiasm for learning, strengthen reading interest, and expand students' cognitive horizons (Firgiawan et al., 2024). Moreover, Utami et al. (2024) found that integrating interactive digital media significantly improves students' academic performance by making learning more accessible and student-centered.

The findings of this review confirm that a variety of digital media—such as digital text, video, animation, simulations, and web-based applications—have a positive impact on the implementation of cooperative and problem-based learning models, including TGT. One of the primary advantages of digital media lies in its multimodal nature, which combines visual, textual, auditory, and interactive elements to create richer and more contextual learning experiences. This characteristic aligns perfectly with the requirements of the TGT model, which emphasizes active participation, teamwork, and friendly competition among learners. As noted by Mufidah et al. (2025), students' active involvement during the learning process contributes to a more enjoyable and effective classroom atmosphere. Therefore, the integration of TGT with digital interactive media represents an appealing pedagogical alternative that enhances both engagement and academic achievement.

The bibliometric analysis conducted in this study reveals a growing research interest over the past five years in combining digital media with the TGT model. Keywords such as "interactive" and "tournament" frequently appear in visualized bibliometric networks, indicating that multimedia-based methods have become a central focus in educational innovation. This trend underscores the increasing recognition of the value of visual and interactive components in designing learning experiences that are both engaging and efficient. The visualization generated through VOSviewer further highlights the clustering of studies exploring gamification, collaboration, and technology-enhanced learning within cooperative learning frameworks.

Nevertheless, the success of digital media implementation is not solely determined by the sophistication of the technology but also by the pedagogical strategy employed by teachers. Without thoughtful instructional design, even the most advanced digital tools may fail to achieve their intended outcomes.

Teachers play a critical role in aligning media selection with learning objectives, student characteristics, and contextual challenges within the TGT model. Effective integration requires teachers to act not merely as transmitters of knowledge but as facilitators who guide students through interactive and collaborative learning processes.

In the context of 21st-century education, the fusion of the TGT model and digital interactive media represents an ideal strategy for cultivating essential competencies such as communication, collaboration, critical thinking, and creativity. This integrated approach aligns with the objectives of the Merdeka Curriculum and the Profil Pelajar Pancasila framework, which emphasize holistic student development. Through gamified collaboration and digital engagement, students are encouraged to become independent, socially responsible, and technologically literate learners. Overall, the integration of the Team Games Tournament (TGT) model and digital interactive media can be regarded as a strategic and transformative educational innovation. The synergy between cooperative learning principles and digital interactivity not only enriches classroom dynamics but also responds effectively to the evolving challenges of education in the digital era. By promoting active participation, contextual learning, and meaningful engagement, this approach provides a sustainable pathway for improving learning quality and preparing students to thrive in a rapidly changing global society.

CONCLUSION

Digital interactive media significantly enhance the implementation of the Team Games Tournament (TGT) learning model by boosting student motivation, engagement, and conceptual understanding through multimodal and contextualized learning experiences. The most commonly used media types—such as digital text, images, audio, video, animations, simulations, and web-based applications—help develop key 21st-century skills like exploration, discovery, and problem-solving, both individually and collaboratively. However, challenges like limited infrastructure, low teacher digital literacy, and the need for pedagogical designs aligned with learning goals remain. A strategic integration of innovative teaching methods with digital technologies is crucial for creating adaptive and inclusive learning environments.

To address these challenges, educators should focus on professional development and collaboration to enhance their ability to design TGT-based learning with digital media. Instructional media developers must prioritize creating interactive tools that integrate pedagogy and are accessible to diverse learners. Schools and institutions must ensure the necessary technological infrastructure and policies for sustainable digital media use in education. Future research should explore experimental studies to provide empirical evidence on the implementation of digital media in TGT across different educational levels, supporting the creation of effective and scalable learning models.

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