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Teams Games Tournament for Collaboration and Learning Motivation in Junior High Science: A Systematic Review

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The development of 21st-century education requires learning strategies that not only improve academic achievement but also foster essential competencies such as collaboration and learning motivation. However, science learning at the junior high school level is often still dominated by teacher-centered approaches, which limit students' active participation. Therefore, innovative learning models are needed to create more interactive and engaging learning environments. This study aims to analyze the effectiveness of the Teams Games Tournament (TGT) learning model in improving students' collaboration skills and learning motivation in junior high school science learning. This research employed a systematic literature review approach using articles obtained from Scopus, Google Scholar, and ERIC databases. The article selection process followed the PRISMA 2020 framework. From an initial identification of 140 articles, 13 relevant studies were selected based on predetermined inclusion and exclusion criteria. The findings suggest that TGT tends to be associated with positive outcomes related to students' collaboration skills and learning motivation. The integration of cooperative learning and game-based tournament activities encourages active participation, interaction, and engagement in the learning process. Therefore, the TGT model can be considered an effective strategy to support collaborative and motivating science learning at the junior high school.

Keywords: Teams Games Tournament; Science Learning; Collaboration Skills; Learning Motivation; Junior High School

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INTRODUCTION

Education in the 21st century emphasizes not only the acquisition of knowledge but also the development of essential skills such as critical thinking, communication, collaboration, and creativity (Kennedy & Sunberg, 2020). Among these competencies, collaboration skills and learning motivation play a crucial role in supporting students' active engagement and academic success, particularly in science learning. These competencies are increasingly recognized as important outcomes of contemporary science education, as they enable students to work effectively with others and sustain their interest in learning complex scientific concepts.

However, many science classrooms at the junior high school level still rely on teacher-centered approaches, where students tend to act as passive recipients of information. This condition limits students' opportunities to actively participate in the learning process and hinders the development of essential skills such as collaboration and independent learning. As a result, students' engagement and motivation in learning activities may decrease (Novritasari et al., 2024).

Science learning at the junior high school level involves abstract concepts and problem-solving processes that require active student participation. Nevertheless, many students still perceive science as a difficult subject due to the dominance of conventional instructional methods. This situation can negatively affect students' interest, participation, and collaboration during classroom learning activities (Novritasari et al., 2024).

To address these challenges, cooperative learning has been widely recognized as an effective instructional approach that promotes student interaction, teamwork, and shared responsibility (Slavin, 2014; Johnson & Johnson, 2009). Through cooperative learning, students are encouraged to actively engage in group discussions, exchange ideas, and collaboratively solve problems, which are essential components in science learning.

One of the cooperative learning models that integrates collaboration and game-based elements is the Teams Games Tournament (TGT) model. This model combines group discussion, academic games, and tournament activities to create a more interactive and engaging learning environment. The use of game-based elements in learning has been shown to increase students' motivation and engagement (Hamari et al., 2014; Plass et al., 2015).

Several previous studies have reported that the implementation of the TGT model can improve students' learning outcomes, collaboration skills, and participation in classroom activities (Fadlilah & Saraswati, 2021; Mariami et al., 2022; Norfadila et al., 2024). In addition, the integration of TGT with various learning media has also been found to enhance students' learning motivation and engagement.These findings suggest that TGT has considerable potential to support both cognitive and non-cognitive aspects of science learning.

In recent years, several review studies have examined the effectiveness of cooperative learning, gamified learning, and student-centered instructional approaches in science education. Most of these reviews have primarily focused on academic achievement, learning outcomes, conceptual understanding, or general student engagement (Novritasari et al., 2024). While these reviews provide valuable insights into the effectiveness of innovative learning approaches, they offer limited discussion regarding the simultaneous development of collaboration skills and learning motivation within the implementation of the TGT model.

Furthermore, existing empirical studies on the Teams Games Tournament (TGT) model have been conducted across various educational levels and subject areas, resulting in a fragmented body of evidence. For example, (Sekarsari & Rusnilawati, 2022) examined the effectiveness of TGT in improving students' learning outcomes and interest in learning Javanese script at the elementary school level. Similarly, (Anggoro & Khasanah, 2024) investigated the influence of TGT on students' achievement and perceptions in English language learning. In science education, (Silva et al., 2025) as well as (Azis & Pertiwi, 2019) explored the use of TGT to support students' understanding of scientific concepts. These findings demonstrate the broad application of TGT across different learning contexts. However, the existing studies have primarily focused on specific outcomes, such as academic achievement, learning interest, student perceptions, and conceptual understanding. Relatively limited attention has been given to examining collaboration skills and learning motivation simultaneously, particularly within the context of junior high school science education. Consequently, a comprehensive synthesis of the existing evidence is needed to better understand the combined influence of TGT on these two important educational outcomes.

The novelty of this study lies in its comprehensive synthesis of previous research by simultaneously examining collaboration skills and learning motivation within the implementation of the Teams Games Tournament (TGT) model in junior high school science learning. Unlike previous studies that tend to focus on single variables, this study integrates both aspects to provide a more holistic understanding of the effectiveness of the TGT model.

From a theoretical perspective, the results of this systematic review strengthen the understanding of cooperative learning as an effective instructional approach in developing essential competencies in 21st-century education.

Therefore, the contribution of this study does not lie in introducing a new learning model, but in providing a focused synthesis of existing evidence concerning the social and affective outcomes of TGT implementation. Specifically, this review integrates findings related to students' collaboration skills and learning motivation within junior high school science education, an area that has received relatively limited attention in previous review studies. By synthesizing evidence from multiple studies, this review is expected to provide a clearer understanding of the effectiveness of TGT and identify directions for future research and educational practice.

Accordingly, this study employs a Systematic Literature Review (SLR) approach to analyze and synthesize previous research on the implementation of the Teams Games Tournament (TGT) model in junior high school science learning. The study is guided by the following research questions:

RQ1: How effective is the Teams Games Tournament (TGT) model in improving students' collaboration skills in junior high school science learning?

RQ2: How does the Teams Games Tournament (TGT) model influence students' learning motivation in junior high school science learning?

METHOD

This study employed a Systematic Literature Review (SLR) approach to synthesize and analyze previous studies regarding the implementation of the Teams Games Tournament (TGT) learning model in junior high school science education. The SLR method was selected because it provides a structured, transparent, and replicable process for identifying, evaluating, and synthesizing existing research evidence (Kitchenham & Charters, 2007). The review process followed the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA 2020) guidelines to ensure methodological rigor and transparency.

1. Data Sources and Search Strategy

The literature search was conducted using three academic databases: Scopus, Google Scholar, and ERIC. These databases were selected because they provide extensive coverage of educational research and peer-reviewed publications.

The search was limited to articles published between 2015 and 2025 to ensure the relevance and recency of the reviewed studies. A combination of keywords and Boolean operators (AND, OR) was used to identify relevant publications.

The primary search string was formulated as follows:

("Teams Games Tournament" OR "TGT")
AND
("science learning" OR "science education")
AND
("junior high school" OR "secondary school")
AND
("collaboration" OR "teamwork")
AND
("learning motivation" OR "motivation")

The search string was adapted according to the indexing system and search requirements of each database. The initial search yielded 140 records, consisting of 38 articles from Scopus, 86 articles from Google Scholar, and 16 articles from ERIC.

2. Inclusion and Exclusion Criteria

To ensure the relevance of the selected studies, predefined inclusion and exclusion criteria were applied. The inclusion criteria were as follows:

1. Studies discussing the implementation of the Teams Games Tournament (TGT) learning model
2. Studies conducted within science learning or science education contexts.
3. Studies involving junior high school students or equivalent educational levels.
4. Studies examining collaboration skills, learning motivation, or related learning outcomes.
5. Articles published in peer-reviewed journals.
6. Articles published between 2015 and 2025.
7. Articles written in English or Indonesian.

The exclusion criteria included:

1. Studies unrelated to the TGT learning model.
2. Studies conducted at educational levels outside junior high school.
3. Conference papers, book chapters, theses, dissertations, and non-peer-reviewed publications.
4. Articles lacking sufficient methodological information.
5. Duplicate records identified during the screening process.

3. Quality Assessment

To ensure the quality and credibility of the included studies, a quality assessment procedure was conducted. Each article was evaluated using four assessment criteria adapted from previous SLR studies in Table 1.

[Table 1 about here.]

Articles that met the majority of these criteria were included in the final analysis.

4. Data Extraction

A systematic data extraction process was conducted to collect relevant information from each selected study. The extracted information included :

1. Author(s) and publication year.
2. Research design and methodology.

3. Educational context and participants.
4. Research focus and variables investigated.
5. Key findings related to collaboration skills.
6. Key findings related to learning motivation.
7. Main conclusions and implications.

The extracted data were organized in a summary table to facilitate comparison across studies.

5. Article Selection Process

The article selection process followed the PRISMA 2020 framework, which includes identification, screening, eligibility, and inclusion stages. From the initial 140 articles identified, 25 articles were selected after screening titles and abstracts. After full-text review, 13 articles met the inclusion criteria and were included in the final analysis.

6. Data Analysis

The selected studies were analyzed using a descriptive qualitative synthesis approach. Following the extraction process, the findings were categorized into two major themes corresponding to the research questions:

1. The impact of the TGT learning model on students' collaboration skills.
2. The impact of the TGT learning model on students' learning motivation.

Thematic analysis was then conducted to identify recurring patterns, similarities, and differences across studies. The synthesized findings were subsequently interpreted to provide a comprehensive understanding of the effectiveness of TGT in junior high school science learning and to identify directions for future research.

RESULT AND DISCUSSION

Article Selection Results

The article selection process in this study followed the PRISMA 2020 framework. The initial identification stage resulted in 140 articles obtained from Scopus, Google Scholar, and ERIC databases. After removing duplicate articles and screening titles and abstracts, 25 articles were considered relevant. Furthermore, through a full-text review based on inclusion and exclusion criteria, 13 articles were selected for final analysis.

[Figure 1 about here.]

The PRISMA diagram illustrates a systematic and transparent process of article selection, ensuring that only relevant and high-quality studies were included in this review.

Characteristics of the selected studies

The characteristics of the selected studies are presented to provide an overview of research trends related to the implementation of the Teams Games Tournament (TGT) learning model in junior high school science learning. The selected studies vary in terms of research focus, research methods, and findings. The analysis of the selected articles shows that research related to the implementation of the Teams Games Tournament model in junior high school science learning has been widely conducted in recent years (Table 2). The studies included in this review were conducted in various educational contexts and generally used experimental or classroom action research approaches.

[Table 2 about here.]

The reviewed studies demonstrated considerable methodological variation. Most studies employed experimental or quasi-experimental designs to evaluate the effectiveness of the TGT model, while several studies adopted classroom action research approaches. Sample sizes also varied across studies, ranging from small classroom-based interventions to larger group-based investigations. In addition, different instruments were used to assess student outcomes, including observation sheets, questionnaires, interviews, and achievement tests.

Regarding research focus, most studies investigated learning outcomes as the primary variable. Fewer studies examined collaboration skills or learning motivation, and only a limited number addressed both variables simultaneously. This finding supports the research gap identified in the introduction and highlights the need for a more comprehensive synthesis of the social and motivational impacts of TGT.

The diversity of research designs, sample characteristics, and measurement instruments indicates a certain degree of heterogeneity among the reviewed studies. Consequently, the findings should be interpreted with consideration of the methodological differences across studies.

The Effect of TGT on Students' Collaboration Skills

The findings of this review indicate that the implementation of the TGT learning model has a significant positive impact on students' collaboration skills. Several studies (Norfadila et al., 2024; Mariami et al., 2022; Firgiati et al., 2021) reported that students demonstrated improved abilities in working together, sharing ideas, and completing group tasks collaboratively.

This improvement can be explained by the cooperative learning structure embedded in the TGT model, which encourages positive interdependence and active interaction among students (Slavin, 2014). Through structured group activities and tournament sessions, students are required to contribute to their team's performance, fostering a sense of shared responsibility.

Furthermore, collaborative activities within TGT allow students to develop interpersonal skills such as communication, teamwork, and mutual support. These findings are consistent with the theory of social interdependence, which

emphasizes the importance of group interaction in enhancing learning outcomes (Johnson & Johnson, 2009).

However, the strength of evidence varies across studies. While experimental and quasi-experimental studies generally reported positive outcomes, several classroom action research studies focused primarily on classroom improvement without providing rigorous comparisons or statistical evidence. Furthermore, differences in collaboration assessment instruments make direct comparison among studies difficult. Therefore, although the evidence generally indicates positive effects, the magnitude of improvement remains difficult to determine precisely.

The Effect of TGT on Students' Learning Motivation

In addition to improving collaboration skills, the TGT learning model also plays a significant role in enhancing students' learning motivation. Studies included in this review (Arifiani et al., 2022) indicate that students show increased enthusiasm and engagement when participating in TGT-based learning activities. The reviewed studies also suggest that TGT contributes positively to students' learning motivation. Students participating in TGT-based learning activities frequently demonstrated greater enthusiasm, engagement, and willingness to participate in classroom learning.

The integration of game elements and tournament structures creates a more enjoyable and stimulating learning environment. This aligns with previous studies on gamification, which suggest that game-based learning can increase students' motivation and engagement (Hamari et al., 2014; Plass et al., 2015). One factor contributing to this outcome is the integration of game-based elements within the TGT model. The combination of teamwork, competition, and rewards creates an enjoyable learning environment that encourages students to become more actively involved in the learning process. The tournament structure provides opportunities for students to experience achievement and recognition, which may enhance both intrinsic and extrinsic motivation.

Moreover, the competitive yet supportive atmosphere in TGT encourages students to actively participate in learning activities. Students are motivated not only to achieve individual success but also to contribute to their team's achievement, which enhances both intrinsic and extrinsic motivation (Ryan & Deci, 2020).

These findings are consistent with previous studies on gamified learning environments, which emphasize the motivational benefits of game elements in educational settings. The findings may also be interpreted through Self-Determination Theory, which suggests that motivation increases when learners experience competence, relatedness, and autonomy during learning activities.

Nevertheless, variations in research design and measurement approaches should be considered. Different studies used different indicators and instruments to assess motivation, making direct comparison challenging. In addition, most reviewed studies were conducted in specific classroom contexts, which may limit the generalizability of the findings. Therefore, although the reviewed evidence suggests positive motivational outcomes, further research using standardized measurement approaches is required.

Cross-Study Synthesis

An important finding emerging from this review is that the positive effects of TGT appear to extend beyond academic achievement. While many previous studies focused primarily on learning outcomes, the reviewed evidence suggests that TGT also supports social and affective dimensions of learning, particularly collaboration skills and learning motivation.

The effectiveness of TGT can be attributed to the integration of two complementary instructional components. First, the cooperative learning structure promotes active interaction, peer support, and collective responsibility among students. Second, the incorporation of game-based and tournament elements increases engagement and motivation by creating a more enjoyable learning experience.

However, the reviewed studies also revealed several limitations. First, substantial heterogeneity exists in terms of research design, sample size, educational context, and measurement instruments. Second, many studies involved relatively small samples and were conducted within a single school, limiting the generalizability of findings. Third, only a limited number of studies simultaneously examined collaboration skills and learning motivation, indicating that this area remains underexplored.

These findings confirm the research gap identified in the introduction. Although TGT has been widely investigated, research addressing both collaboration skills and learning motivation simultaneously remains limited. Therefore, future studies should adopt more comprehensive research designs that examine multiple learning outcomes and employ standardized instruments to strengthen the evidence base.

Theoretical Implications

From a theoretical perspective, the results of this systematic review strengthen the understanding of cooperative learning as an effective instructional approach in developing essential competencies in 21st-century education. The implementation of the Teams Games Tournament learning model demonstrates that integrating cooperative learning strategies with game-based activities can significantly enhance students' engagement and interaction in the learning process.

These findings also support the cooperative learning theory proposed by Robert E. Slavin, which emphasizes the importance of positive interdependence, individual accountability, and group interaction in improving learning

outcomes and social skills. By incorporating academic games and tournament activities, the TGT learning model creates a learning environment that encourages active participation and collaborative problem solving.

Furthermore, this study contributes to the theoretical framework of student-centered learning by highlighting the role of collaborative and motivational factors in improving the effectiveness of science learning. The findings indicate that learning models that combine collaboration and engagement strategies can facilitate deeper understanding and active participation among students.

Practical Implications

From a practical perspective, the results of this study suggest that teachers can utilize the Teams Games Tournament model as an alternative instructional strategy to improve classroom interaction and student participation in science learning. The integration of cooperative learning and game-based activities can create a more engaging and enjoyable learning environment, which may increase students' motivation to learn.

For science teachers at the junior high school level, the TGT model can be implemented through structured group discussions, academic games, and tournament-based assessments that encourage students to actively participate in learning activities. Such learning strategies can help students develop important skills such as teamwork, communication, and collaborative problem solving.

In addition, the use of instructional media in TGT learning activities, such as learning cards, digital learning tools, or educational games, may further enhance the effectiveness of the learning process. Teachers are encouraged to design creative and interactive learning activities that support students' active engagement and collaborative learning experiences.

Implications for Future Research

This study also provides implications for future research related to the implementation of cooperative learning models in science education. Future researchers are encouraged to explore the integration of the Teams Games Tournament with various innovative learning media, such as digital learning platforms, educational games, or interactive learning applications.

Moreover, future studies may investigate the long-term impact of the TGT learning model on students' learning motivation, collaboration skills, and other important competencies such as critical thinking and problem-solving abilities. Such research could provide deeper insights into the effectiveness of cooperative learning strategies in supporting holistic student development.

In addition, future research may also examine the implementation of the TGT model in different educational contexts, learning subjects, and grade levels in order to obtain a broader understanding of its effectiveness in diverse learning environments.

CONCLUSION

This study employed a Systematic Literature Review (SLR) approach to synthesize previous research on the implementation of the Teams Games Tournament (TGT) learning model in junior high school science education. Based on the analysis of 13 selected studies, the reviewed evidence suggests that TGT tends to produce positive effects on students' collaboration skills and learning motivation. The cooperative learning structure in TGT encourages students to participate in group discussions, exchange ideas, share responsibilities, and work collaboratively. Meanwhile, game-based activities and tournament sessions create a more engaging learning environment that may increase students' enthusiasm, participation, and motivation.

Overall, TGT can be considered a promising instructional strategy for supporting both cognitive and non-cognitive aspects of science learning. However, the findings should be interpreted with caution because the review involved a limited number of studies and did not include meta-analytic procedures to estimate effect size. Variations in research design, sample size, educational context, and measurement instruments may also affect the consistency and generalizability of the findings. Future research should use more rigorous experimental designs, larger and more diverse samples, and standardized instruments to provide stronger evidence regarding the effectiveness of TGT in science education.

Limitations and Future Research

Despite providing important insights into the effectiveness of the Teams Games Tournament learning model in science education, this study has several limitations that need to be acknowledged.

First, this study only analyzed a limited number of articles that met the inclusion criteria established in this research. From the initial search results obtained from several databases, only 17 articles were selected for further analysis. Although these articles provided relevant findings related to the implementation of the TGT learning model, the limited number of studies may not fully represent all existing research on this topic.

Second, this study focused on articles obtained from three academic databases, namely Scopus, Google Scholar, and ERIC. Although these databases contain a wide range of educational research publications, it is possible that other relevant studies indexed in different databases were not included in this review.

Third, the analysis in this study mainly focused on research

examining the implementation of the Teams Games Tournament learning model in the context of junior high school science learning. Therefore, the findings of this study may not necessarily represent the effectiveness of the TGT learning model in other subjects or educational levels.

Based on these limitations, future research is recommended to include a larger number of studies and explore additional academic databases in order to obtain a more comprehensive overview of research related to the implementation of the Teams Games Tournament in education. Future studies may also examine other variables related to 21st-century learning skills, such as critical thinking, creativity, and problem-solving abilities.

Furthermore, future researchers are encouraged to investigate the integration of the TGT learning model with various innovative learning media, including digital learning platforms, interactive learning applications, and game-based learning technologies. Such studies could provide deeper insights into the potential of the TGT learning model in supporting more engaging and effective learning environments in science education.

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Conflict of Interest Statement: The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

LIST OF TABLES

TABLE 1 / Quality Assessment Criteria

Code	Assessment Question
QA1	Are the research objectives clearly stated?
QA2	Is the research methodology adequately described and appropriate?
QA3	Is the study relevant to the implementation of the TGT model and the research objectives of this review?
QA4	Are the findings clearly presented and supported by evidence?

TABLE 2 / Characteristics of the Selected

No.	Author & Year	Research Title	Research Method	Research Subject	Research Variables	Research Instrument	Key Findings
1.	Satrianti et al.	Using the Cooperative Learning Model of TGT to Improve Physics Learning Outcomes of Grade VII Students	Classroom Action Research	Grade VII Junior High School	TGT Model, Learning Outcomes	Observation sheet, achievement test	The implementation of TGT increased students' physics learning outcomes and improved classroom engagement during the learning process.
2.	Samsawati & Muslimin	The Effect of Using the TGT Learning Model with GASIK Media on Learning Outcomes of Junior High School Students	Experimental Research	Junior High School Students	TGT Model, Learning Outcomes	Learning outcome test	TGT combined with GASIK media significantly improved students' understanding of physics concepts compared to conventional learning.
3.	Istiqomah & Ahmadi	The Influence of the TGT Learning Model Assisted by Question Cards on IPAS Learning Outcomes	Experimental Research	Junior High School Students	TGT Model, Learning Outcomes	Test and observation	The use of question cards within the TGT learning model improved students' comprehension and academic achievement in science learning.
4.	Fadlilah & Saraswati	Improving Students' Participation in Science Learning Using the TGT Cooperative Model	Classroom Action Research	Grade IX Junior High School	TGT Model, Learning Participation	Observation sheet	Students' participation in science learning activities increased significantly after implementing the TGT learning model.
5.	Arifiani et al.	Implementation of TGT Assisted by Gyjumplay Media on Students' Learning Motivation	Experimental Research	Junior High School Students	TGT Model, Learning Motivation	Motivation questionnaire	The integration of TGT with interactive learning media increased students' motivation and enthusiasm during learning activities.
6.	Valentina et al.	Implementation of the TGT Learning Model to Improve Students' Science Activeness and Learning Outcomes	Experimental Research	Junior High School Students	TGT Model, Activeness, Learning Outcomes	Observation and test	The TGT model enhanced students' activeness in learning and significantly improved their academic achievement in science.
7.	Norfadila et al.	The Effectiveness of Team Games Tournament in Improving Students' Collaborative Abilities	Experimental Research	Junior High School Students	TGT Model, Collaborative Skills	Collaboration rubric	Students' collaborative skills increased as they worked in teams and participated in tournament-based learning activities.
8.	Mariami et al.	Implementation of TGT to Improve Learning Outcomes and Collaboration Skills	Experimental Research	Junior High School Students	TGT Model, Learning Outcomes, Collaboration	Observation sheet and test	The cooperative structure of TGT improved both students' academic performance and their collaboration abilities.
9.	Firgiati et al.	Improving Students' Collaboration Skills Through the TGT Cooperative Learning Model	Classroom Action Research	Grade VII Junior High School	TGT Model, Collaboration Skills	Collaboration observation sheet	Students showed improvement in teamwork, communication, and group problem-solving after applying TGT learning activities.

No.	Author & Year	Research Title	Research Method	Research Subject	Research Variables	Research Instrument	Key Findings
10.	Banowati et al.	Implementation of TGT Learning to Improve Collaborative Skills in Junior High School Students	Experimental Research	Junior High School Students	TGT Model, Collaborative Skills	Collaboration assessment rubric	TGT learning significantly enhanced collaborative learning behaviors among students.
11.	Rosanti et al.	Application of TGT-STEM Using Articulate Storyline 3 to Improve Students' Collaboration Skills in Science Learning	Experimental Research	Junior High School Students	TGT-STEM, Collaboration Skills	Observation rubric and questionnaire	The integration of STEM and TGT strengthened students' collaboration, problem-solving ability, and engagement in science learning.
12.	Novritasari et al.	Implementation Of Cooperative Learning Model Teams Games Tournament To Improve Student Science Learning Outcome Of Junior High School	Pre-experimental designs	Junior High School Students	TGT Model, Science Learning Outcomes	Observation, Written Test, And Response Questionnaire	TGT in the learning process can improve student learning outcomes, especially in the material of the human digestive system.
13.	Sakorn et al.	Multimedia Computer-Based Lessons on Programming with Scratch in Technology Integrated with the TGT Cooperative Learning Technique to Enhance Learning Achievement and Teamwork Ability of Thai Grade 7 Students	experimental research design	Grade 7 students	TGT Cooperative Learning Technique, Learning Achievement and Teamwork Ability	Learning Plan, a Learning Achievement Test, a Teamwork Skills Assessment, And a Student Satisfaction Questionnaire	TGT integrated learning approach was highly effective. Student satisfaction was also at a very high level, which indicates positive engagement with the integrated approach.

LIST OF FIGURES

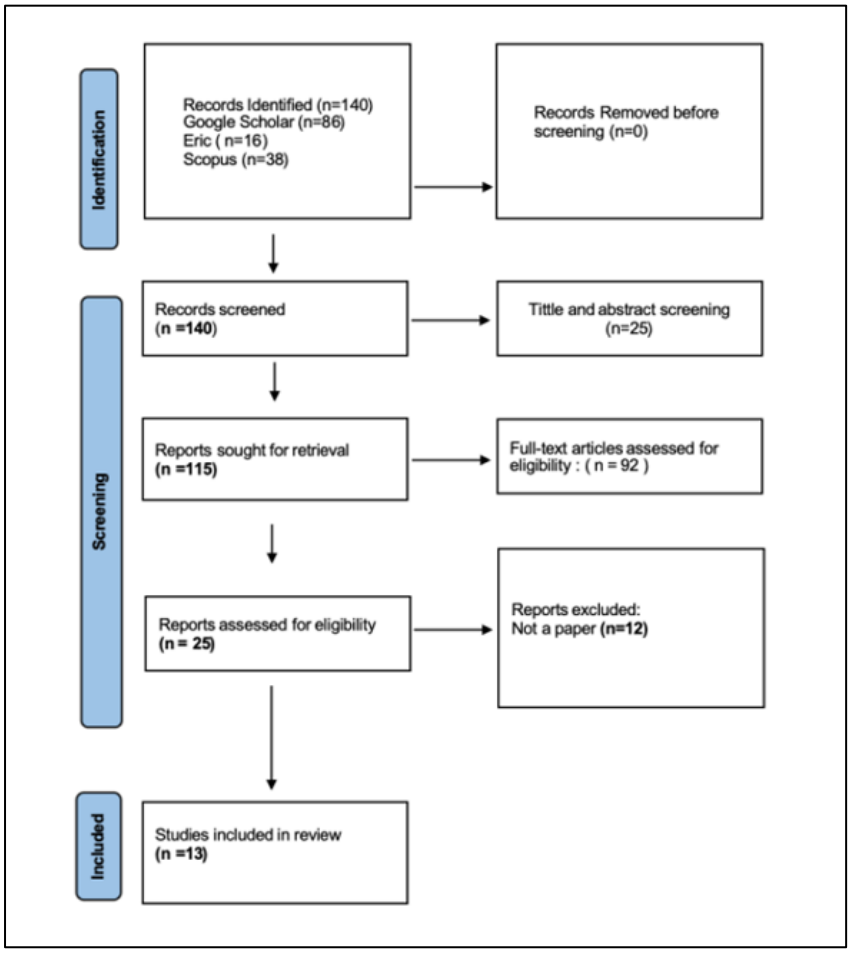

FIGURE 1 / PRISMA Flow Diagram