Enhancing Learning Performance Through Cooperative Edutainment Approach: A Systematic Literature Review

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Abstract. Integrating cooperative learning and edutainment has emerged as a promising approach to enhancing student engagement and academic performance in the digital era. This study conducts a systematic literature review of 17 peer-reviewed articles published between 2018 and 2023 to examine the impact of these pedagogical models on learning outcomes. Findings indicate that cooperative edutainment strategies significantly improve student motivation, knowledge retention, and 21st-century skills, including critical thinking, creativity, and collaboration. Despite these benefits, challenges such as teacher preparedness, resource limitations, and digital accessibility remain barriers to effective implementation. Addressing these challenges requires strategic investments in professional development, technology infrastructure, and curriculum adaptation. This study highlights the transformative potential of combining cooperative learning and edutainment across various educational levels and subjects. Future research should explore context-specific applications, long-term effects, and integration of emerging technologies to enhance learning effectiveness further.

Keywords: edutainment, cooperative learning, digital learning, 21st-century skills, student engagement.

1 Introduction

In the contemporary era, education has become increasingly intertwined with technology, enhancing the learning experience and equipping students with essential skills for the future. Digital tools and multimedia resources have reshaped traditional teaching methodologies, making learning more interactive and engaging. One such innovation is edutainment, which combines education with entertainment to enhance student motivation and comprehension[1]. Integrating digital edutainment technology is crucial for fostering critical thinking, problem-solving, collaboration, and digital literacy in engaging and interactive ways [2][3]. As digital natives, today's students—millennials to Generation Z—require learning methods aligning

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with their technological engagement patterns[4]. That necessitates adopting interactive educational models that convey knowledge and cultivate essential 21st-century skills.

However, integrating technology into edutainment presents several challenges, including disparities in accessibility and the need for well-trained educators capable of incorporating digital tools into their teaching strategies [5]. Many educational institutions face infrastructure limitations, such as inadequate access to technology and the Internet, which hinder the seamless adoption of digital learning approaches[6]. Additionally, the digital literacy skills of educators play a pivotal role in ensuring the quality of technology-enhanced learning, emphasizing the need for continuous professional development[7]. Without proper training, educators may struggle to design and implement engaging edutainment-based activities that maximize student learning outcomes. Despite its advantages, edutainment faces implementation challenges, including accessibility disparities and insufficient teacher training. Schools must invest in technological infrastructure while ensuring educators receive continuous professional development[8][9]. A well-structured curriculum can bridge the gap between digital advancements and pedagogical effectiveness[10], fostering student engagement and skill development.

Creating engaging and meaningful learning experiences is essential to counteract student disengagement and the limitations of rote learning. Traditional rote-learning methods often fail to develop critical thinking and creativity[11]. Edutainment enhances student engagement by integrating multimedia, storytelling, and game-based learning[12][13]. Research highlights its effectiveness in increasing knowledge retention and real-world application.

Integrating edutainment with cooperative learning—where structured group work is employed—has been particularly effective in enhancing learning performances, as evidenced by studies in higher education settings[14]. Recent research highlights the growing acceptance of interactive edutainment systems in mainstream education[15]. When combined with cooperative learning—where students work collaboratively in structured activities—edutainment fosters engagement and deeper comprehension[16]. This integration ensures that students actively participate in learning while developing cognitive and social skills essential for real-world challenges.

Cooperative learning is a structured educational approach that promotes teamwork, communication, and problem-solving. Combined with edutainment, interactive group activities enhance engagement and knowledge retention [17]. This integration ensures cognitive and social skill development, preparing students for real-world challenges[18].

The effectiveness of edutainment is evident across subjects, from mathematics to language acquisition[19]. The Teaching at the Right Level (TaRL) model, supported by digital platforms like Kahoot, has significantly improved student motivation and engagement[20]. Similarly, student-centered methods in language education foster deeper interaction and communication skills[21]. Such approaches demonstrate edutainment's adaptability in various educational contexts.

To improve educational quality, institutions must support teachers in integrating cooperative learning with edutainment. This model fosters essential skills such as leadership and collaboration[22]. Digital tools like video media enhance these learning experiences, making education more interactive and [23]. Furthermore, the principle of edutainment, which

harmoniously combines elements of education and entertainment, can also be applied to make learning more engaging and effective. By utilizing innovative teaching models that combine cooperative learning, technology, and the principles of edutainment, educators can create more interactive, engaging, and effective learning experiences for students [24].

This study examines concrete examples of cooperative learning and edutainment in vocational schools, including successful pilot programs and case studies demonstrating their practical benefits. While these approaches have demonstrated positive effects on student motivation and academic achievement, assessing potential challenges and unintended consequences is equally important.

This study also examines critical challenges, including the need for comprehensive teacher training, disparities in technological resources, and potential disengagement among students unfamiliar with edutainment-based learning. Addressing these issues is crucial for ensuring the effective implementation of these methods. Furthermore, this study strengthens the coherence of findings by explicitly connecting discussions on cooperative learning and edutainment, demonstrating their collective impact on 21st-century skill development and academic success. Finally, this study ensures academic rigor by maintaining clarity, conciseness, and consistency in terminology and formatting, aligning with high-impact journal standards.

This study explores the implementation of edutainment and cooperative learning in enhancing educational outcomes. By analyzing these approaches, we aim to provide scientifically grounded insights into their effectiveness and inform future pedagogical innovations.

2 Method

This study adopts a systematic literature review (SLR) methodology[25] to synthesize existing theories, research findings, and methodological insights related to cooperative edutainment in education[26]. Since this study relies on secondary data, it critically analyzes prior scholarly work to identify the field's patterns, gaps, and challenges [27]. The review systematically explores key methodological issues and synthesizes findings to provide evidence-based recommendations for future research and practice.

A study documentation guide and a predefined checklist guided the article selection process to ensure methodological rigor. Relevant scientific articles were sourced from Google Scholar and Scopus, two widely recognized academic databases. These databases were chosen for their extensive coverage of peer-reviewed research. The search was limited to publications from 2018 to 2023 to ensure the inclusion of recent and relevant studies.

A structured keyword search strategy was employed to refine the data selection process. The primary keywords included "Edutainment," "Vocational High School," "High School," "Cooperative Learning," "Learning Strategies," and "Learning Outcomes." These terms were selected based on their relevance to the study's focus. Following the keyword search, results were filtered using predefined inclusion and exclusion criteria (detailed in Table 1). That ensured that only high-quality and thematically relevant research articles were included in the review.

Table 1. Inclusion and Exclusion Criteria from Scientific Publications

Inclusion Criteria	Exclusion Criteria
Published in English	Not published in English
The paper was published in a reputable journal	Duplicate publication
Publications that focus on assisted learning strategies, learning, edutainment, and technology	Publications that have no relationship to research keywords
Open access publications	Publications that have restricted access
Papers published from 2018 to 2023	Publications that do not focus on education

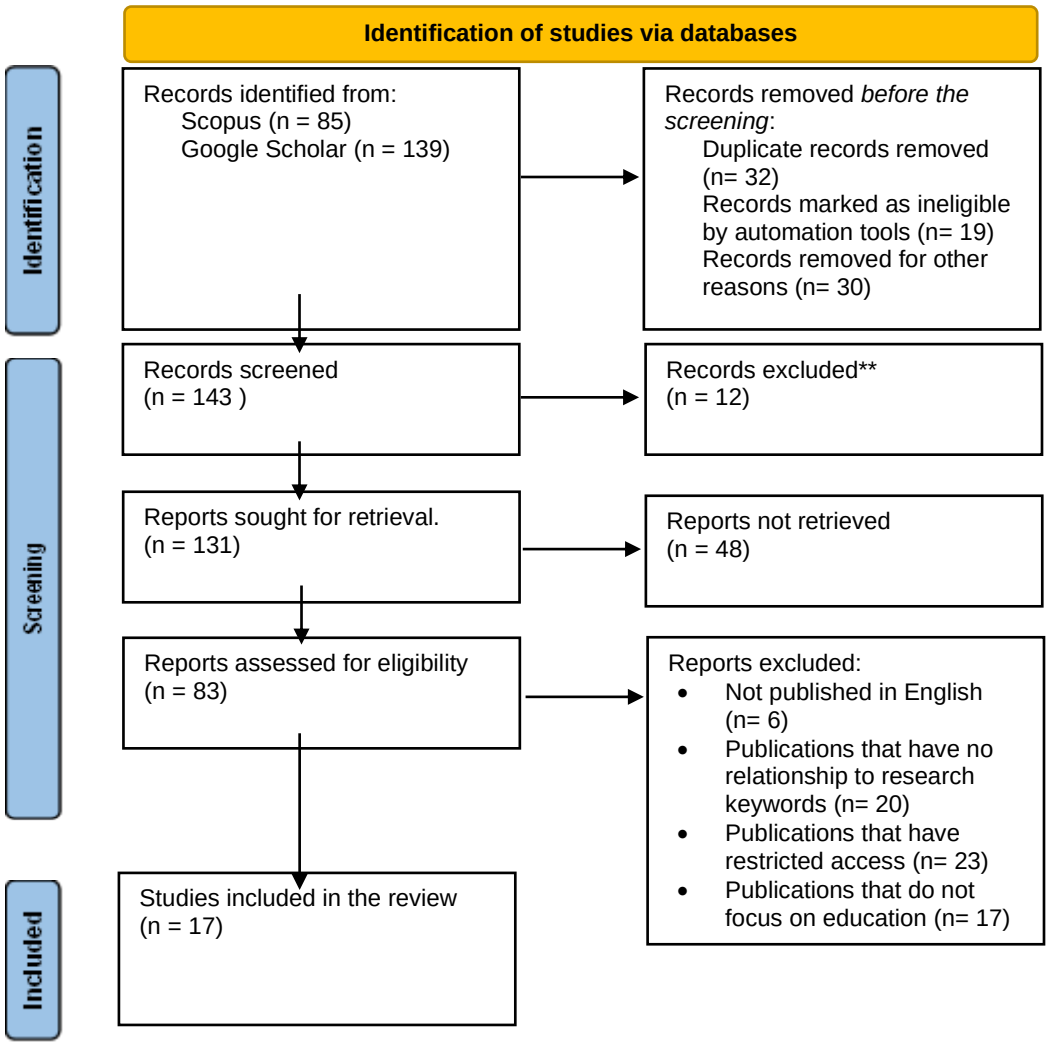

Fig. 1. Analysis Using PRISMA Flow

A qualitative descriptive analysis was employed to systematically examine similarities, differences, and emerging patterns across the selected studies[28]. Thematic coding was

applied to categorize findings into key themes, such as ‘student engagement,’ ‘academic performance,’ and ‘teacher challenges.’

The study followed the PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) framework to ensure a transparent and reproducible screening process. Initially, 224 articles were retrieved, and duplicate records were removed using EndNote reference management software. The remaining studies were screened based on title and abstract relevance, followed by a full-text assessment. A quality appraisal tool (e.g., CASP, MMAT) was used to evaluate methodological robustness before including studies in the final review (Figure 1).

3 Result

The article search process utilizing the PRISMA technique successfully identified 17 articles that were highly relevant to the established inclusion and exclusion criteria. These criteria fundamentally assisted the researchers in locating articles that closely aligned with the discussion topic. Subsequent Table 2 will present a summary of the findings from various databases obtained through the PRISMA analytical method.

Table 2. Relevant research findings

No.	Author	Method	Findings	Subject
1.	[29]	Quantitative	The NHT cooperative learning model has a positive effect in increasing students' achievement motivation and English learning outcomes compared to conventional learning models.	Elementary School Students
2.	[30]	Classroom Action Research	Students' motivation to learn English through cooperative learning strategies significantly increased. The number of students who scored 75 and above increased from 21 in cycle 1 to 43 students, or 100%, in cycle 2. Learning activities also became more active and creative.	Elementary School Students
3.	[31]	Quantitative	The study showed a significant increase in students' speaking skills after introducing cooperative learning techniques. In addition, a significant increase was found in intrinsic motivation, but there was no difference in other aspects of motivation.	High School Students
4.	[32]	Quantitative	The study found that (1) there is a significant influence of the use of cooperative learning on students' reading comprehension achievement, (2) there is a significant influence of students' learning motivation on reading comprehension achievement, and (3) there is a significant interaction effect between cooperative learning and students' learning motivation on reading comprehension achievement.	Vocational High School Students
5.	[33]	Quantitative	The study's results showed a significant difference between student learning outcomes in the experimental group and the control group. Student learning outcomes in the experimental group using the cooperative learning model were higher than	Vocational High School Students

No.	Author	Method	Findings	Subject
			those in the control group using the conventional learning model. The cooperative learning model is effective in improving the physics learning outcomes of vocational high school students in Jambi.	
6.	[34]	Meta-Analysis	The results show that cooperative learning has a 0.89 effectiveness, which has a moderate effect on the mathematics learning outcomes of vocational high school students. Cooperative learning is also more effective in grade 11 students compared to grade 10 and in samples of 1-30 students compared to more than 30 students.	Vocational High School Students
7.	[35]	Qualitative	The findings show that despite positive beliefs about the benefits of cooperative learning, the method is not widely and faithfully used in the classroom. It is due to teachers' knowledge, beliefs, and challenges with implementation.	English teacher
8.	[14]	Quantitative	The results showed that students taught using edutainment techniques had higher average scores than those taught using demonstration methods. There was no significant difference between male and female students in the building drawing performance test.	Vocational High School Students
9.	[36]	Quantitative	The study's results show that edutainment technology contributes to forming certain personal and professional qualities in students, such as tolerance, communication skills, and overcoming psychological barriers when communicating in a foreign language.	college student
10.	[37]	Qualitative	The study's results show that edutainment technology contributes to the formation of certain personal and professional qualities in students, such as tolerance, communication skills, and the ability to overcome psychological barriers when communicating in a foreign language.	English teacher
11.	[12]	Quantitative	The results showed that the experimental group significantly outperformed the control group regarding listening comprehension and self-concept. Using edutainment provides a unique opportunity for students to improve their listening comprehension and self-concept.	college student
12.	[38]	Mixed Methods	The study results showed that the use of PowToon media in English learning positively impacted students' English comprehension. Students in the experimental class showed characteristics such as nationalism, religiosity, honesty, perseverance, discipline, independence, responsibility, and empathy.	Elementary School Students
13.	[39]	Mixed Methods	The study's results indicate that the edutainment-based ESP teaching model enables changes in the personal characteristics of engineering students, thus supporting the development of their innovative	college student

No.	Author	Method	Findings	Subject
			potential. These findings provide a tool for foreign language teachers to strengthen students' innovative potential through soft skills mastery and improvement in English language proficiency.	
14.	[40]	Quantitative	The study results showed that using an assignment system developed based on public lectures on TED Talks positively affected the development of students' listening skills.	college student
15.	[41]	Literature Review	The study's results showed that gamification brings various benefits to students, including increased motivation, positive attitudes, better cognitive achievement, development of 21st-century skills, better social interactions, independence, and increased competitiveness during the learning process.	Scientific Articles
16.	[42]	Literature Review	Edutainment in gamification integrates game mechanics and game design strategies in non-game situations. It empowers and integrates students with motivational skills to create a positive learning attitude and a comfortable environment.	Scientific Articles
17.	[19]	Quantitative	The study's results show the value and need for edutainment in the learning process and the positive impact of entertainment materials on students' learning achievements.	college student

Referring to Table 2, 17 scholarly articles have been identified that focus on the theoretical study of implementing cooperative learning models and edutainment approaches in vocational education. The findings from this literature span various countries and employ diverse research methodologies. Figures 2 and 3 will present information regarding the distribution of research based on educational levels and the types of research methods utilized in the 17 reviewed articles.

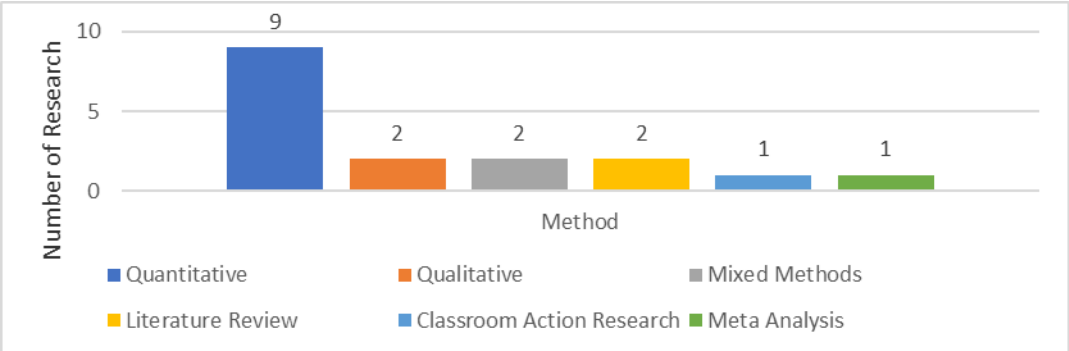

Fig. 2. Recapitulation of Types of Research Methods

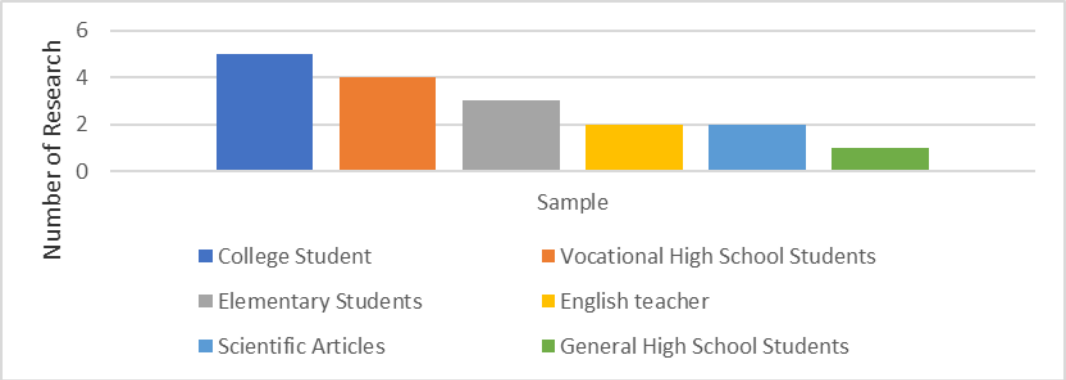

Fig. 3. Recapitulation of Distribution of Review Finding Subjects

4 Discussion

4.1. Implementation of Edutainment Approach in Learning

The current educational paradigm offers various approaches teachers can use to manage learning activities. One of the new educational paradigms is edutainment, an innovative approach to learning that combines elements of learning activities with other activities that tend to lead to entertaining and engaging outcomes [43]. This approach is increasingly being used at various levels of education because it has been found to impact academic achievement positively. Some research has identified the benefits of gamification, a form of edutainment, for students, including increased motivation, positive attitudes, and development of 21st-century skills such as social interaction and self-reliance. These results align with broader research on the effectiveness of edutainment in English language learning in major countries such as Poland, China, and the United States [41].

In alignment with this, other positive findings have effectively illustrated the efficacy of this approach when applied to learning activities. Research conducted by Gerasimova and Oblova [39] indicates that the English for Specific Purposes (ESP) teaching model, which is based on edutainment, not only enhances the English language proficiency of engineering students but also fosters the development of essential soft skills for their future careers. That suggests that edutainment is not only pertinent in basic learning contexts but also plays a crucial role in more complex higher education settings, where the integration of education and entertainment can facilitate professional skills development. Furthermore, edutainment has proven to impact students' character formation, indicating that its integration affects cognitive and affective dimensions. Research by Pratiwi [38] reveals that students taught using PowToon media with an edutainment approach exhibit more positive characteristics, such as nationalism, religiosity, honesty, and discipline, than those instructed without this media.

Identifying other related implementation issues based on a literature review reveals main challenges frequently encountered and faced by educators. One challenge is the lack of teachers' knowledge and skills in effectively integrating education [35]. Limitations in

resources and infrastructure, such as insufficient access to technology and the internet, often serve as barriers in many schools [44].

Another challenge is resistance to change, where some teachers may be reluctant to shift from traditional teaching methods [45]. Maintaining a balance between educational and entertainment elements is also crucial to achieving learning goals without sacrificing the motivational value of entertainment [46]. Therefore, to maximize the implementation of edutainment in learning, planned efforts are needed to enhance teachers' skills, provide adequate resources, and address resistance to change so that the approach can have a positive impact on students' learning outcomes without compromising the essence of the learning material.

Numerous studies emphasize the challenges associated with traditional teaching methods and illustrate how integrating audiovisual media, such as educational cartoons rooted in local wisdom, can address these shortcomings, making the learning experience more captivating and participatory [47]. Furthermore, the integration of technology, such as Game-Based Learning and interactive multimedia, has been shown to foster a more engaging, personalized, and tailored learning experience that meets students' individual needs [48][49].

Overall, evidence from various studies indicates that edutainment holds significant potential for enhancing learning effectiveness across different educational levels. However, to fully realize its benefits, support is needed in areas such as teacher training, the development of appropriate materials, and well-planned implementation strategies. Consequently, edutainment can serve as an approach that is not only enjoyable but also makes a substantial contribution to achieving more comprehensive learning objectives.

4.2. The Impact of Implementing Cooperative Learning Strategies on Learning Performance

The cooperative learning model, widely recognized in educational processes, undeniably offers significant benefits in enhancing student learning outcomes and academic achievements. Furthermore, implementing cooperative learning strategies in education has notably impacted student performance across various educational levels. Consistent findings from reviews indicate that research employing quantitative and quasi-experimental methods has revealed that cooperative learning models, such as Numbered Heads Together (NHT) and Team Game Tournament (TGT), can boost students' competitive motivation and learning results [23]. For instance, Silalahi et al. asserts that applying the NHT model in English language instruction at the elementary school level is significantly more effective than traditional teaching methods [29], particularly in enhancing students' competitive motivation. This finding aligns with research by Saragih and Utami [30], which indicates that cooperative learning strategies elevate learning motivation and foster more active and creative learning experiences among elementary school students.

Implementing the cooperative learning model is not only applicable and beneficial in primary education, but it also positively impacts higher education, such as high school and vocational school. According to a report by Namaziandost et al. [31], a significant improvement in students' speaking skills was observed after applying cooperative learning techniques. This study showed that students' intrinsic motivation also experienced a significant increase, although there was no change in other aspects of motivation. In vocational high schools, the

research conducted by Abdulloh [32] stated that the interaction between cooperative learning and students' learning motivation significantly affected students' reading comprehension skills, highlighting the importance of synergy between teaching methods and students' internal motivation. Therefore, implementing the cooperative learning model has great potential for implementation at various levels of education, provided that activities are carried out to analyze the characteristics of students and the material.

Implementing cooperative learning models currently demonstrates highly positive outcomes in education, particularly in addressing the skill requirements of the 21st century. Research findings indicate that cooperative learning enhances the physics performances of vocational high school students in Jambi. This model is pertinent to language subjects and science disciplines that necessitate deep understanding and critical thinking abilities. The capacity of students to collaborate in solving physics problems through cooperative learning reflects how this approach can foster the development of critical and analytical thinking skills, which are essential components of 21st-century competencies [50]. In alignment with this, a study by Dendup and Onthanee [51] empirically demonstrates that cooperative learning significantly improves the communication skills of elementary school students. This evidence suggests that the cooperative learning model can catalyze enhancing the skills required by students, where critical thinking, analytical abilities, and communication skills are regarded as core competencies necessary for students to thrive in the contemporary era.

The potential for implementing cooperative learning models, whether in their entirety or through innovative modifications, is assessed in terms of enhancing academic achievement and fostering soft skills such as collaboration, communication, and collective problem-solving abilities [52]. As the demand for 21st-century skills continues to rise, cooperative learning models emerge as a pertinent and practical approach to support the holistic development of students [53]. This perspective aligns with the findings of a literature review conducted by Ridwan et al.[34], which indicates that the effectiveness of cooperative learning can vary based on grade level and sample size, suggesting that this model can be optimized by taking these relevant factors into account to achieve the established competencies and objectives better.

Overall, the cooperative learning model remains relevant and highly effective in meeting the skill needs of the 21st century. This model helps improve academic performance and develops important skills such as collaboration, creativity, and critical thinking that are highly required in the current era of globalization and digitalization. Therefore, the application of cooperative learning should continue to be supported and adapted to the needs of students so that a new model or teaching strategy is created as an innovation in learning activities so that students are not only academically superior but also ready to face future challenges with the skills they need.

4.3. Opportunities for Implementing the Cooperative-Edutainment Model in English Language Learning at Vocational Schools

English language learning in vocational schools faces unique challenges, particularly in motivating students to master language skills relevant to the workplace. Combining cooperative learning models with an edutainment approach offers significant potential to address these challenges. The integration of these two approaches not only supports the

mastery of English language skills but also fosters student engagement and the development of 21st-century skills such as collaboration, critical thinking, and effective communication, which are crucial in a global work environment [39][41].

As highlighted by several studies, implementing cooperative learning models can significantly enhance students' English language skills, particularly in vocational schools. It is evident from research conducted by Namaziandost et al. [31], which found that applying cooperative learning techniques significantly improved the speaking skills of high school students, underscoring the relevance of this model in English language learning at vocational schools. Students involved in cooperative learning also demonstrated a significant increase in intrinsic motivation, although not all aspects of motivation showed the same level of change. This finding emphasizes the importance of social interaction and cooperation in language learning, especially in developing essential speaking and listening skills for professional communication.

Furthermore, research by Abdulloh [32] revealed that using cooperative learning models in teaching English reading at vocational schools significantly improved students' reading comprehension. This finding indicates that cooperative learning enables students to support each other in understanding complex texts, a crucial skill for comprehending technical materials or literature relevant to their vocational fields.

The edutainment approach, which combines educational elements with entertainment, holds great potential for enhancing student engagement in English language learning at vocational schools. Research by Rahmani [41] found that gamification, a form of edutainment, can boost student motivation and cognitive achievement. In English language learning, tools such as PowToon or TED Talks can make learning more interactive and relevant to the real world while simultaneously strengthening students' communication skills [40].

Integrating edutainment into English language learning allows students to learn through enjoyable activities, such as simulated workplace conversations, role-playing, and projects. For instance, a study conducted by Gerasimova and Oblova [39] showed that the edutainment approach in teaching English for Specific Purposes (ESP) improves language proficiency and develops essential soft skills, such as the ability to communicate effectively in professional situations. These findings are particularly relevant in the context of vocational schools, where English is often taught to support students' professional competencies.

Significant opportunities are emerging for implementing the cooperative edutainment model in English language learning at vocational schools; however, challenges such as limited resources and teacher preparedness must be addressed. For instance, a major barrier is teachers' limited knowledge of effectively integrating edutainment [35]. On the other hand, infrastructure challenges, such as limited access to technology, often hinder the broader implementation of this method, especially in vocational schools located in remote areas [44].

Solutions to these challenges include training focused on enhancing teachers' skills in using edutainment technology and adapting instructional materials to fit the local context and the needs of vocational school students. Additionally, developing interactive learning resources relevant to the workplace can help overcome these challenges, ensuring that students not only understand English academically but can also apply it in professional contexts [46][54].

5 Conclusion

This study highlights the significant impact of integrating cooperative learning and edutainment in enhancing student engagement, motivation, and academic performance. A systematic literature review of recent studies indicates that these methods improve knowledge retention and foster critical 21st-century skills such as collaboration, creativity, and problem-solving.

Despite the evident benefits, challenges remain regarding teacher preparedness, resource limitations, and technology accessibility. Addressing these barriers requires strategic investments in professional development, the adoption of well-structured pedagogical models, and the provision of adequate technological infrastructure.

The study underscores the transformative potential of cooperative edutainment models across various educational levels. Future research should explore context-specific implementations, innovative digital tools, and long-term effects on student learning outcomes. By continuously refining these methods, educators and policymakers can create dynamic, engaging, and effective learning environments that equip students with the competencies needed for future success.

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