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A COMPARATIVE STUDY OF GAME-BASED LEARNING AND POWER POINT-MULTIMEDIA INSTRUCTION IN TEACHING ENGLISH SPEAKING SKILLS

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Abstract

This study examines the comparative effectiveness of Game-Based Learning (GBL) and PowerPoint-Multimedia-Based Learning (PMBL) in improving English-speaking skills among Indonesian junior high school students. Although various teaching methodologies have been applied throughout Indonesia, few studies have directly compared these two approaches in terms of their impact on specific speaking sub-skills such as fluency, coherence, lexical resource, grammatical accuracy, and pronunciation. This quantitative, comparative research involved thirty-four seventh-grade students from Mondial Junior High School and employed a post-test-only control group design. The participants were divided into two groups, each receiving a different instructional treatment. Speaking performance was assessed using an adapted IELTS speaking test and evaluated with a modified rubric. The data were analyzed using an independent samples t-test to compare the outcomes between the two groups. The study concludes that GBL significantly outperforms PMBL in enhancing EFL learners' speaking skills and recommends its broader implementation in Indonesian junior high school contexts.

Keywords:*Game based learning, power point multimedia based learning, IELTS.*

INTRODUCTION

English proficiency is increasingly essential in the globalized, digital world, particularly for learners in developing nations such as Indonesia, where English serves as a gateway to academic, technological, and cross-cultural opportunities (Rao, 2019). Within Indonesia's national curriculum, English is a mandatory subject at the junior high school level, with an emphasis on communicative competence. However, while curriculum standards promote student-centred learning, classroom implementation often remains dominated by teacher-fronted, textbook-driven instruction, particularly when it comes to developing speaking skills.

Speaking is widely recognized as one of the most challenging yet essential skills in English as a Foreign Language (EFL) education. It not only reflects a learner's functional language ability but also enables active engagement in authentic communication (Nguyen, Nam, & Bon, 2024). Despite its central role, many Indonesian students struggle with speaking due to limited vocabulary, inaccurate pronunciation, anxiety, and lack of confidence (Rahmadani & Astutik, 2023; Pangastuti & Chadafi, 2019). These issues are compounded by traditional pedagogies that fail to create interactive, low-anxiety environments conducive to meaningful oral practice (Palomargareta & Astutik, 2023).

To address these persistent challenges, researchers and educators are turning to Game-Based Learning (GBL)—a method grounded in constructivist learning theory. Constructivism posits that learners actively build knowledge through meaningful interaction and real-world experiences. Within this framework, Krashen's Affective Filter Hypothesis (1982) further highlights the role of emotional variables—motivation, anxiety, and confidence—in language acquisition. When learners are engaged and emotionally supported, language input is more likely to be processed effectively. GBL responds to these theoretical principles by embedding learning within playful, rule-based, goal-oriented activities that lower affective filters and foster authentic language use (Mursyidah, 2022; Riansyah et al., 2023).

Unlike more passive approaches, GBL makes speaking purposeful and socially engaging. Students interact in teams, negotiate meaning, respond under time constraints, and receive immediate feedback—conditions that mirror real-world communication and promote fluency, spontaneity, and confidence. Studies have shown that GBL not only increases students' willingness to communicate but also enhances linguistic output and reduces speaking anxiety, especially in EFL contexts with limited exposure to authentic English use (Riansyah et al., 2023).

In contrast, PowerPoint-Multimedia-Based Learning (PMBL) offers structured input using text, visuals, audio, and video to scaffold speaking instruction. PMBL is informed by Mayer's Cognitive Theory of Multimedia Learning (2005), which posits that learners understand and retain content more effectively when it is delivered through dual channels (verbal and visual) in a well-integrated format. This approach helps build vocabulary and content knowledge, and it supports speaking tasks such as picture description or scripted dialogues (Sianipar et al., 2023; Salainti & Wijayanti, 2024). However, PMBL tends to be more teacher-controlled and may not adequately develop spontaneous speaking or real-time interaction, especially when used without dialogic activities.

Although both GBL and PMBL have been independently studied in EFL contexts, comparative studies assessing their specific impacts on junior high school students' speaking skills remain scarce, particularly in Indonesia. Most existing research focuses either on vocabulary acquisition or student motivation in isolation, leaving a gap in understanding how these methods perform relative to one another in developing spoken language. Moreover, few studies explore how these approaches operate within authentic classroom settings where instructional resources, time constraints, and learner diversity influence teaching outcomes.

This study seeks to address these gaps by evaluating and comparing the effectiveness of Game-Based Learning and PowerPoint-Multimedia-Based Learning in enhancing the English-speaking skills of seventh-grade EFL

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students at Mondial Junior High School, Semarang. The study was inspired by classroom observations made during the author's Field Experience Practice (Praktik Pengalaman Lapangan, PPL) from October 2024 to January 2025. During this period, both GBL and PMBL were frequently used in communicative lessons, yet their impacts on learners' oral proficiency had not been systematically assessed. By applying a quasi-experimental design in this real-world educational context, the research aims to contribute practical insights for EFL practitioners seeking to improve student speaking outcomes.

Accordingly, the study is guided by the following research question:Which instructional approach—Game-Based Learning or PowerPoint-Multimedia-Based Learning—is more effective in enhancing the speaking performance of seventh-grade EFL students?

METHOD

Research Design

This study employed quantitative comparative research with a post-test-only experimental design to compare the effectiveness of Game-Based Learning (GBL) and PowerPoint-Multimedia-Based Learning (PMBL) in developing speaking skills among Indonesian junior high school students. These methods are adapted from Siahaan, et.al. (2022) with a slight modification. As noted by Iranifard and Latifnejad Roudsari (2022), comparative research seeks to identify differences and similarities between groups exposed to different conditions. In this research context, the GBL group was the experimental group, receiving game-based instruction, while the PMBL group functioned as the control group, receiving standard PowerPoint-assisted instruction. Although the absence of a pre-test limits the ability to control for potential differences in baseline speaking ability, the design facilitated a focused investigation of the instructional effects within a natural classroom environment.

Participants and Sampling

A total of 34 seventh-grade students from the English Communicative Class at Mondial Junior High School, Semarang, during the 2024–2025 academic year, participated in the study. Students were selected through purposive sampling, ensuring they had a comparable level of English proficiency and similar instructional backgrounds. Participants were then randomly assigned to one of two groups:

1. Experimental Group (n = 17): Received Game-Based Learning instruction.
2. Control Group (n = 17): Received PowerPoint-Multimedia-Based Learning.

While purposive sampling may limit generalizability, the random assignment to groups helps weaken internal validity threats such as selection bias.

Treatment Procedures

The treatment was carried out over a four-week period, with each group receiving 40-minute instructional sessions per week, totalling four sessions.

The GBL group engaged in speaking activities centred around games such as role-plays, story-building games, question-and-answer circles, and interactive board games. These activities are grounded in constructivist and sociocultural learning theory, emphasizing social interaction, engagement, and contextual relevance. According to Siregar, Iskandar, and Dewanti (2023), game-based learning fosters communicative competence by increasing learner motivation, lowering anxiety, and encouraging authentic language use in meaningful contexts.

The PMBL group received lessons using structured PowerPoint slides integrated with multimedia elements such as visuals, sound clips, and video prompts. This method supports the dual coding and multimedia learning theories (Amar, Sakkir, & Radhiyani, 2023), which posit that learners comprehend better when verbal and visual input are combined. Lessons followed a sequential pattern of vocabulary presentation, video modelling

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and guided practice.

Both treatments were designed to align with the Indonesian national English curriculum, which emphasizes communicative competence, student-centred instruction, and contextual learning. Learning objectives included introducing oneself, describing routines, and expressing opinions, corresponding to CEFR A2-level speaking outcomes. Curriculum alignment was ensured by reviewing national competency standards and adapting materials to match classroom goals.

Data Collection Instrument

To assess students' speaking proficiency, a post-treatment interview-based speaking test was conducted. The test format was adapted from the IELTS Speaking Test, modified to suit junior high EFL learners. The interview was conducted by posing questions related to the instructional materials presented during the treatment sessions. The questions were developed based on a structured questionnaire blueprint designed to assess key aspects of English-speaking proficiency—namely fluency and coherence, lexical resource, grammatical range and accuracy, and pronunciation—in alignment with the IELTS speaking rubric. The test was scored using an IELTS rubric score band, which also evaluates the fluency and coherence, lexical resource, grammatical range and accuracy, pronunciation. The IELTS rubric was chosen based on its established validity and reliability (Li, 2019).The rubric was adapted to reflect age-appropriate expectations and A2-level descriptors.

FINDING AND DISCUSSIONS

The research was conducted to compare the effectiveness of the learning treatments of both Game-Based Learning and PowerPoint-Multimedia Learning to the seven graders in Mondial junior high school. In order to compare the effectiveness of each learning treatments, the data collected were then examined by using an independent sample t-test. Therefore, the results of the t-test of this research are shown in the table below:

Table 1. T-Test : Two-Sample Assuming Equal Variances

T-Test : Two-Sample Assuming Equal Variances	Variable 1	Variable 2
Mean	7,352941176	6,617647059
Variance	0,836397059	0,797794118
Observations	17	17
Pooled Variance	0,817095588	
Hypothesized Mean Difference	0	
df	32	
t Stat	2,371560027	
P(T<=t) one-tail	0,011948939	
t Critical one-tail	1,693888748	
P(T<=t) two-tail	0,023897878	
t Critical two-tail	2,036933343	

A two-tailed independent sample t-test was conducted to determine whether this difference was statistically significant. The results revealed a t-value of 2.37, which exceeds the critical value for two tails (2.04), and a p-value of 0.0239, which is less than the alpha level of 0.05. These findings suggest a statistically significant difference in speaking performance between the two groups.

Furthermore, considering the directional nature of the hypothesis—that Game-Based Learning would be more effective than PowerPoint-Multimedia-Based Learning—the one-tailed t-test also supports this conclusion. The calculated t-value (2.37) exceeds the critical one-tailed value (1.69), and the p-value (0.0119) remains below 0.05. Therefore, the null hypothesis (H_0) is rejected in favour of the alternative hypothesis (H_1), confirming that GBL significantly outperforms PMBL in enhancing students' English-speaking skills.

Table 2. A Statistics Analysis of the Research Data

Statistics	GBL (V1)	PMBL (V2)
Mean	7,35	6,62

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Variants	0,84	0,80
Number of Samples	17 students	17 students

The results of the statistical analysis show a significant difference in students' English-speaking skills between the Game-Based Learning (GBL) group and the PowerPoint-Multimedia-Based Learning (PMBL) group. Specifically, the GBL group achieved a higher mean score (M = 7.35) compared to the PMBL group (M = 6.62), with a mean difference of approximately 0.74 points. The variance for each group was relatively similar (0.84 for GBL and 0.80 for PMBL), and both groups had the same number of observations (n = 17).

These findings are consistent with both pedagogical theories and previous research. Hafiza and Pratolo (2024) found that game-based learning environments support vocabulary development, promote positive classroom dynamics, and increase student engagement. Likewise, Aratea and Pasubillo (2024) emphasized that the use of interactive games in GBL leads to improvements in fluency, as students become more engaged in learning English speaking skills. These benefits resonate with the constructivist learning theory and Krashen's Affective Filter Hypothesis, both of which highlight the importance of reducing learner anxiety and promoting meaningful, interactive learning experiences.

To further support the findings of this research, additional insights were drawn from the scores of the thirty-four seventh-grade students at Mondial Junior High School.

Table 3. Test Scores of Game-Based Learning Treatment.

Game Based Learning Scoring Band						
	Pseudo nyms	Fluency & Coherence	Lexical Resource	Grammatical Range & Accuracy	Pronun ciation	Total
1.	BN	6	6	6	6	(6+6+6+6)/4: 6
2.	BO	9	8	8	9	(9+8+8+9)/4: 8,5

3.	AN	8	8	7	8	(8+8+7+8)/4: 7,75 rounded to 8
4.	NA	7	7	6	8	(7+7+6+8)/4: 7
5.	KN	8	7	7	8	(8+7+7+8): 7,5
6.	BA	9	8	8	9	(9+8+8+9)/4: 8,5
7.	LG	8	8	6	8	(8+8+6+8)/4:7,5
8.	JA	8	7	6	9	(8+7+6+9)/4: 7,5
9.	RA	8	7	8	8	(8+7+8+8)/4: 7,75 rounded to 8.
10.	FE	6	7	5	6	(6+7+5+6)/4: 6
11.	AE	7	7	5	7	(7+7+5+7)/4: 6,5
12.	RA	8	8	8	8	(8+8+8+8)/4: 8
13.	OD	8	8	7	8	(8+8+7+8)/4: 7,5 rounded to 8.
14.	KO	6	6	6	6	(6+6+6+6)/4: 6
15.	KA	8	7	8	8	(8+7+8+8)/4: 7,5 rounded to 8.
16.	MA	6	7	5	6	(6+7+5+6)/4: 6
17.	SA	8	8	8	8	(8+8+8+8)/4: 8

Table 4. Test Scores of PowerPoint-Multimedia-Based Learning Control Group.

PowerPoint-Multimedia-Based Learning Scoring Band						
	Pseudonyms	Fluency & Coherence	Lexical Resource	Grammatical Range & Accuracy	Pronunciation	Total
1.	CA	6	6	6	6	(6+6+6+6)/4: 6

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2.	JN	6	6	7	5	(6+6+7+5)/4: 6
3.	AN	6	7	7	5	(6+7+7+5)/4:6.25 rounded to 6
4.	FO	7	7	8	8	(7+7+8+8)/4: 7.5
5.	NA	5	4	4	5	(5+4+4+5)/4: 4,5
6.	AN	7	7	8	8	(7+7+8+8)/4: 7.5
7.	KR	8	7	7	8	(8+7+7+8)/4: 7,5
8.	CN	7	7	7	5	(7+7+7+5)/4: 6,5
9.	TY	7	8	8	7	(7+8+8+7)/4: 7,5
10.	LA	7	5	7	7	(7+5+7+7)/4: 6,5
11.	OY	5	5	5	5	(5+5+5+5)/4: 5
12.	WA	7	8	7	7	(7+8+7+7)/4: 7,25 rounded to 7.
13.	AL	6	8	7	6	(6+8+7+6)/4: 6.75 rounded to 7
14.	RN	7	8	8	7	(7+8+8+7)/4: 7,5
15.	EN	7	8	6	6	(7+8+6+6)/4: 6.75 rounded to 7
16.	LS	7	5	7	7	(7+5+7+7)/4: 6,5
17.	QN	7	8	7	7	(7+8+7+7)/4: 7.25 rounded to 7

The scoring band data further validate these observations. In the GBL group, students frequently achieved total band scores between 7.5 and 8.5, demonstrating consistent strengths across all assessed categories. In contrast, students in the PMBL group displayed more variability and a higher frequency of scores in the 6.0–7.0 range, with notable underperformance in fluency and pronunciation, as evidenced in the tables presented below:

Table 5. Statistical Comparison of Speaking Skills Components.

Category	Mean	Median	Min	Max	Standard Deviation	Variance
GBL Fluency & Coherence	7.53	8.0	6.0	9.0	1.01	1.01
GBL Pronunciation	7.65	8.0	6.0	9.0	1.06	1.12

The statistical data clearly show that Game-Based Learning (GBL) outperforms PowerPoint-Multimedia-Based Learning (PMBL) in both the fluency & coherence and pronunciation categories. GBL students achieved higher mean and median scores in these aspects, indicating stronger and more consistent performance. In contrast, the scores from the PMBL group were not only lower but also more dispersed—particularly in pronunciation—as shown by the higher variance and standard deviation.

These findings reinforce the conclusion that Game-Based Learning offers a more engaging and effective environment for enhancing students' spoken English skills, especially in components that demand active, interactive communication. These results clearly indicate that Game-Based Learning provides a more interactive and effective environment for developing speaking skills in EFL learners.

CONCLUSION

This study concludes the comparative effectiveness of Game-Based Learning (GBL) and PowerPoint-Multimedia-Based Learning (PMBL) in enhancing the English-speaking skills of seventh-grade students at Mondial Junior High School. While both instructional methods led to measurable improvement in students' speaking performance, statistical analysis using an adapted IELTS speaking rubric revealed a significant difference favouring GBL. Students in the GBL group demonstrated higher overall speaking scores, particularly in fluency, coherence, and pronunciation. These findings were supported by descriptive statistics, including higher means and lower variance in key speaking categories for the GBL group, suggesting a more consistent and impactful learning experience.

The data also revealed distinctions between the two methods. GBL appeared to foster a more interactive and engaging learning environment, enhancing students' spontaneity, fluency, and confidence in oral communication. In contrast, PMBL, while providing structured input, was associated with more passive learning behaviours and lower engagement

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levels, potentially limiting pronunciation and fluency development. This aligns with previous studies (e.g., Hafiza & Pratolo, 2024; Aratea & Pasubillo, 2024) that emphasize the benefits of interactive and learner-centred activities in language acquisition.

Theoretically, the findings support constructivist learning frameworks and Krashen's Affective Filter Hypothesis, which suggest that reduced anxiety and increased motivation contribute to more effective language learning. GBL's game-oriented tasks likely lowered affective filters, enabling greater language output and risk-taking. Meanwhile, PMBL's reliance on static slides may not have sufficiently stimulated the affective and cognitive domains necessary for communicative competence.

However, several limitations should be noted. The relatively small sample size and short duration of the study limit the generalizability of the results. Additionally, the study lacked triangulation methods such as student interviews, classroom observations, or teacher reflections that could provide richer insights into how students experienced each method. Variability in digital literacy, classroom dynamics, and teacher facilitation styles may also have influenced the outcomes but were not controlled for.

Future research should employ mixed-method approaches and longitudinal designs to assess the sustained impact of GBL and PMBL on speaking proficiency. Including qualitative data from learners and instructors would also help clarify how different modalities affect language learning engagement, motivation, and confidence. Furthermore, teacher are encouraged to align instructional strategies not just with general learning goals but with specific linguistic targets and with the contextual realities of their classrooms, including student preferences, technological resources, and curricular demands.

In summary, while both GBL and PMBL can be effective under certain conditions, this study provides empirical support for the use of GBL as a more robust and engaging approach to developing English-speaking skills in EFL contexts.

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