

Game-Oriented Problem Exploration (GOPE) Model in Language Learning: A Teacher's View

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ARTICLE INFO

Keywords:

Games based Learning;
Problem-based Learning;
Language Learning

Article history:

Received 2024-09-11

Revised 2024-12-03

Accepted 2024-12-23

ABSTRACT

The development of students' critical and collaborative thinking skills is essential, particularly in Indonesian language learning. To address this, a targeted learning model is needed. The Game-Oriented Problem-Based Learning and Engagement (GOPE) model has been proposed, but a needs analysis is required to assess its feasibility and integration into classroom settings. A descriptive survey method was employed to analyze teacher needs for the GOPE model in Indonesian language learning. Data were collected through questionnaires administered to Indonesian language teachers across various schools. The responses were analyzed using a descriptive quantitative approach to identify patterns and trends in teachers' perspectives. Findings revealed that teachers recognized the critical role of integrating problem-based learning and gaming elements to enhance student engagement and motivation. Most participants emphasized that such integration could significantly improve learning outcomes and foster students' critical and collaborative thinking skills. The data supported the hypothesis that the GOPE model could address these educational challenges effectively. The results suggest that the GOPE model has potential as an innovative tool in language learning. Its emphasis on combining problem-solving strategies with interactive gaming aligns with teachers' views on effective pedagogical practices. Further research and development are recommended to optimize its application and assess its impact on students' skills and learning achievements. This study highlights the need for innovative learning models in Indonesian language education. The GOPE model shows promise in enhancing critical and collaborative skills, suggesting a positive step toward improved educational practices.

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1. INTRODUCTION

In the 21st century, technology and games have emerged as pivotal tools in modern education (Rulyansah, Ghufroon, & Mariati, 2023). Games, characterized by systematic activities incorporating visual and kinetic elements, are designed to stimulate students' skills and enhance their understanding of specific knowledge domains (Besgen et al., 2015). When integrated with practice-based learning, these activities enable students to link new concepts to prior experiences, fostering a more impactful and meaningful learning process (Pitarch, 2018). Moreover, this gamified approach has proven effective in motivating learners to actively invest time in skill development and knowledge acquisition, often voluntarily and enthusiastically (Bond, Buntins, Bedenlier, Zawacki-Richter, & Kerres, 2020).

In this era, Games-Based Learning (GBL) is increasingly recognized as a popular educational approach (Pacheco-Velazquez, Rodés & Salinas-Navarro, 2024). GBL is a teaching method that integrates educational games into the teaching and learning process (Lozano, et al., 2023). This approach is able to increase student interest and involvement through a challenging and fun atmosphere, which is believed to produce optimal learning outcomes (Muengsan & Chatwattana, 2024). As an active learning technique, GBL often involves innovative and pre-existing games to enhance students' learning experiences (Whitton, 2012). In addition, GBL utilizes elements of competition that encourage students to compete with each other or challenge themselves, in order to increase learning motivation (Saraiwang & Worawong, 2023). Repetition in playing games allows the integration of game components with learning materials, which ultimately ensures active student involvement, strengthens understanding, and creates an environment that supports participation and learning motivation (Hung, Yang, Hwang, Chu & Wang, 2018; Lee, 2019).

GBL allows students to learn without realizing it (Tokacet et al., 2019). This is because GBL is an approach that is often created based on specific learning objectives (Beşaltı & Kul, 2021; Tao et al., 2018). This learning can be used to facilitate interaction, overcome lack of engagement, deep thinking, positive behavioral change, and content-based learning in addition to entertaining students (Lester, et al., 2014). This learning creates a fun and educational environment that is combined with competition, feedback, and rewards in learning (Chen & Chang, 2020; Liu, Wang & Lee, 2021).

The use of GBL is applied to improve learning and evaluation of skills, by utilizing game techniques that stimulate the learning process (Batsaikhan, 2021). This integration not only increases students' enjoyment in learning a subject but also encourages their active involvement in direct learning. GBL provides an interactive and stimulating learning environment, thus promoting more meaningful learning. In this context, the majority of students feel that GBL helps improve spelling skills, and word memorization, and creates a more positive classroom atmosphere (Saraiwang & Worawong, 2023).

The use of technology in GBL has a positive impact on student learning achievement (Cahyana et al., 2017). This game is a valuable alternative for developing cognitive skills such as attention, perception, creativity, and abstract thinking (Zhonggen, 2019). In addition, complex thinking skills can be developed through serious games, especially when players are allowed to engage at their own pace without emphasis on specific learning objectives (Rosenthal & Ratan, 2022).

Several previous studies have found the advantages of game-based learning. Liu, Shaikh, and Gazizova's (2020) study observed changes in students' learning desires and interests as they progressed through school, as well as their impact on their ability to retain new knowledge. Furthermore, studies by Tariq & Abonamah (2021) and Damayanti (2022) highlighted the importance of game-based learning in shaping effective leaders. GBL is said to have the ability to maintain student motivation and their involvement in the learning process (Plass, Homer & Kinzer, 2015). In addition, this method helps students manage emotions and respond to situations more appropriately (Muengsan & Chatwattana, 2024).

In game-based learning, teachers play an important role in enhancing students' learning elements and motivation and designing effective implementation procedures (Zou, Zhang, Xie, & Wang, 2021). On the other hand, students are encouraged to hone their analytical thinking skills, strategic planning, knowledge integration, and communication and collaboration with others (Muengsan & Chatwattana, 2024). Through this approach, learning becomes more interactive and experience-oriented, thus

encouraging deeper student involvement. Thus, this learning not only improves cognitive understanding but also develops essential social skills for students.

On the other hand, learners not only learn various materials but also practice skills through interaction with games, which is considered effective in increasing interest and motivation to learn (Cheng & Su, 2012). However, GBL may take longer than traditional teaching methods, because games can take up more class time. Too much focus on games can also interfere with the main purpose of learning, namely knowledge transfer (Muengsan & Chatwattana, 2024). Therefore, the success of implementing this learning is highly dependent on the teacher's ability to design games that are in accordance with learning objectives (Vitarisma et al., 2022). The game application model applied must also be flexible and adaptive to support various learning contexts (Papoutsi & Drigas, 2016; 4).

Although game-based learning has many advantages, it also has limitations. The use of games in learning takes longer than traditional teaching methods. The game process can take up significant class time, potentially disrupting the achievement of the main goal of learning, which is efficient knowledge transfer. In addition, if not designed carefully, focusing on the game aspect can distract students from academic content, making them more involved in the entertainment aspect than the learning itself. This requires teachers to have high skills in designing games that remain relevant to learning objectives. Based on this, integrating other learning models with this learning can be used as an alternative in learning. One of these learning models is Problem-based Learning (PBL).

PBL is a student-centered approach, where they can develop thinking skills by analyzing problems from multiple perspectives (Naji et al., 2020; Sakir & Kim, 2020). PBL aims to provide opportunities for students to solve complex and unstructured real-world problems collaboratively, while taking responsibility for their learning process. In addition, PBL also helps them develop the ability to face future challenges (Rotgans & Schmidt, 2019). Through this approach, students are expected to be able to acquire integrated knowledge, skills, and attitudes, so that they become independent problem solvers, better knowledge seekers, contributing team players, and lifelong learners (Hung et al., 2019).

Many educational institutions at various levels have integrated PBL into their curricula (Hernández-Ramos et al., 2021). PBL is widely adopted and applied in various disciplines and educational contexts due to its ability to encourage critical thinking and problem solving in authentic learning situations (Yew & Goh, 2016). This learning model is seen as an educational strategy that supports the development of thinking and communication skills that are essential for achieving success in the modern era (Uluçınar, 2023). In addition, PBL allows students to become flexible and thoughtful thinkers by applying their knowledge to action (Kök & Duman, 2023), creating a student-centered learning environment and stimulating their curiosity (Hatipoğlu & Semerci, 2023).

In PBL, students are not immediately corrected for their initial ideas that may be inappropriate, but are guided to develop new knowledge using available epistemological tools (Katsara, 2023). Students are encouraged to explore the problems they face and utilize their knowledge to further develop skills and build new learning (Shishigu et al., 2018). This learning model is also effective in helping students understand basic concepts, which ultimately has a positive impact on their learning process (Swart, 2014; Ediansyah et al., 2019). In addition, PBL has been shown to increase students' positive attitudes towards the subject and their academic achievement (Argaw et al., 2017).

In the era of ever-evolving education, it is important to find a learning model that is not only effective but also interesting for students. One alternative model is the integration of game-based learning (GBL) and PBL. GBL allows students to be actively involved in the learning process through interaction with interesting game elements, while PBL encourages them to think critically and solve complex and unstructured problems. The combination of these two approaches provides the potential to create a learning environment that is dynamic, collaborative, and relevant to real-world challenges.

The integration of game-based learning with problem-based learning through the Game-Oriented Problem Exploration (GOPE) model is an innovative alternative that can improve students' critical and collaborative thinking skills. By combining interactive and engaging elements of the game with an analytical approach to problem solving, this model provides students with the opportunity to learn

deeply and actively. GOPE facilitates the exploration of real-world problems through games, which not only stimulates engagement but also hones students' ability to collaborate and think critically in relevant and applicable contexts. Based on this, it is necessary to conduct a preliminary analysis to determine the needs of teachers and students for the model to be developed. Based on this, the purpose of this study is to analyze the needs of teachers and students as a basis for developing the GOPE model to improve the critical and collaborative thinking skills of high school students.

2. METHODS

This research is a descriptive study using a survey method. The survey method is defined as a research method that tries to define cases as taken from research samples obtained from the research population. The population of this study consisted of Indonesian language teachers in West Sumatra who teach at the secondary school level. The sample of this study was 66 teachers. The respondent data for this study are as follows. First, respondents are teachers who teach at the junior high school level (45.5%) and senior high school (54.5%). Second, teachers have been teaching for 1-3 years (50%), 4-5 years (13.6%), 5-10 years (18.2%), and more than 10 years (18.2%).

In this study, samples were taken from a population that voluntarily filled out the distributed instruments. This instrument was used to determine the competence and opinions of respondents regarding the need for learning models. This questionnaire measures various aspects, including the needs of teachers in designing problem-based learning scenarios and games; difficulties in facilitating collaborative, interesting, interactive learning; and challenges in improving students' critical and collaborative thinking skills. The instrument was first developed and validated by experts. After being declared valid, the instrument was distributed to respondents via the Google Form application and distributed using the WhatsApp application media.

This instrument was first developed through a series of stages involving a literature review and discussions with experts in the field of education. This validation includes two main aspects, namely content validation and language validation. Content validation aims to evaluate the extent to which the items in the questionnaire reflect the concepts to be measured. Language validation, on the other hand, aims to ensure that the language used in the questionnaire is easy to understand by respondents. Ambiguous, overly technical, or difficult to understand language can lead to bias in respondents' answers. After going through the validation stage, the instrument was piloted on a small group of respondents to identify potential problems, such as confusing or inconsistent items. Feedback from this pilot test was used to refine the instrument before it was widely implemented in research. The combination of expert validation and field trials helped ensure that the instrument had high validity and reliability, so that the results obtained could be trusted and used for informative decision making.

3. FINDINGS AND DISCUSSION

3.1 Findings

The results of this study provide an initial overview of the needs of teachers and students for a learning model that combines problem-based learning with game-based learning. Data collected through the questionnaire indicate a significant need for an innovative learning model that not only increases student engagement but also hones critical and collaborative thinking skills. In the following analysis, the questionnaire data will be described in detail in the form of a table to provide a clearer picture of the responses and needs identified by teachers. This table will facilitate understanding of the results obtained and be a reference in developing a learning model that is in accordance with teacher needs. Based on this, the results of the analysis of teacher needs questionnaire data can be seen in the table.

Table 1. Teacher Needs Analysis Results

No.	Statements	Answer (%)			
		SA	A	DA	SD
1.	I need more resources to design authentic learning scenarios that can stimulate students' critical thinking.	63.6	36.4	0	0
2.	I find it difficult to facilitate effective group discussions in class.	0	36.4	54.5	9.1
3.	I want more guidance on how to integrate 21st century skills, such as critical thinking and collaboration, into the curriculum.	54.5	45.5	0	0
4.	I need more support in developing assignments that encourage students to think analytically.	54.5	45.5	0	0
5.	I want more guidance in designing learning that allows for the transfer of knowledge to real-life situations.	59.1	40.9	0	0
6.	I feel the need to find new ways to make learning Indonesian more interesting and interactive for students.	81.8	18.2	0	0
7.	I find it difficult to find effective learning methods to improve students' critical thinking skills.	13.6	45.5	40.9	0
8.	I need more variety in teaching methods that can increase student engagement.	59.1	40.9	0	0
9.	I feel that students need more practice in solving complex and authentic problems.	36.4	59.1	4.5	0
10.	I often feel that classroom learning focuses too much on theory, leaving little opportunity for practical application.	27.3	40.9	27.3	4.5
11.	I feel that students often lose interest when the subject matter is too monotonous.	72.7	22.7	4.5	0
12.	I feel the need for more resources to develop students' critical and analytical thinking skills.	59.1	40.9	0	0
13.	I feel that classroom learning does not encourage students to think critically enough in solving problems.	31.8	50.0	18.2	0
14.	I feel that there is a need for more methods that can combine theoretical learning with practical experience.	36.4	63.6	0	0
15.	I feel that students need more challenges to develop higher-order thinking skills.	40.9	59.1	0	0
16.	I feel that there is a need for better methods to instill problem-solving skills in students.	50.0	50.0	0	0
17.	I often feel that students lack the skills to work together in groups effectively.	13.6	63.3	18.2	4.5
18.	I want to use learning methods that can make students more enthusiastic and actively involved in each learning session.	77.3	22.7	0	0
19.	I feel that fun and interactive learning will be more effective in improving students' skills.	72.7	27.3	0	0
20.	I want to find a learning model that can combine fun with effectiveness in achieving learning objectives.	72.7	27.3	0	0
21.	I believe that a fun learning approach can significantly increase students' learning motivation.	68.2	31.8	0	0
22.	I want to use a learning model that can create a dynamic and fun classroom atmosphere for students.	72.7	27.3	0	0
23.	I feel that students will find it easier to understand the subject matter if the learning is delivered through fun activities.	77.3	22.7	0	0

24.	I believe that fun learning methods can help students develop critical and collaborative thinking skills more effectively.	68.2	31.8	0	0
25.	I feel that learning models that involve game elements can improve the effectiveness of learning in the classroom.	68.2	31.8	0	0
26.	I believe that fun and effective learning can help students overcome boredom and increase their participation in learning.	77.3	22.7	0	0

The findings of this study provide valuable insights into teachers' and students' needs for a learning model that integrates problem-based and game-based learning approaches. Table 1 highlights the questionnaire results, illustrating the high demand for resources and methods to foster critical and collaborative thinking among students. Teachers indicated a strong preference for innovative learning models that enhance student engagement while bridging the gap between theoretical knowledge and practical application. The data underscores the importance of creating interactive and authentic learning scenarios that not only captivate students but also promote analytical and problem-solving skills.

Analysis of the table reveals several critical points. First, a significant majority of teachers (e.g., 63.6% strongly agreed) expressed the need for resources to design authentic scenarios that stimulate critical thinking. Additionally, over 70% emphasized the importance of integrating engaging and interactive methods, such as game elements, to combat monotony and increase participation. These findings suggest that current teaching methods often fall short in motivating students or fostering higher-order thinking skills. Incorporating dynamic and enjoyable activities, such as games, was perceived as a potential solution to enhance both critical and collaborative thinking. Teachers also voiced concerns about the lack of support in transferring theoretical knowledge to real-world applications, further supporting the need for a practical, game-oriented learning model like GOPE. These results serve as a foundation for designing innovative educational frameworks that align with teacher expectations and student learning needs.

3.2 Discussion

Previous research highlights the significant benefits of combining authentic and interactive learning approaches in improving student engagement and enhancing thinking skills. Yew and Goh (2016) demonstrated that authentic problem-based learning (PBL) effectively fosters deep student engagement by encouraging critical and collaborative thinking through the analysis of real-world problems. Similarly, studies by Cheong, Filippu, and Cheong (2014) underscore the potential of game-based learning (GBL) to boost student motivation and create a more dynamic and enjoyable educational environment. Integrating game elements into the learning process has been shown to address challenges like low student engagement, making learning more active, participatory, and practical (Dorfner & Zakarzadeh, 2021; Jabbar & Felicia, 2015). Consequently, the combination of PBL and GBL emerges as a promising strategy to cultivate a more immersive and engaging learning experience for students.

Furthermore, teachers recognize the importance of providing challenging tasks that emphasize not only memorization but also the application of knowledge in real situations. They feel that such an approach will enhance higher-order thinking skills and encourage students to work more effectively in groups, which is one of the main challenges often faced in the classroom. Effective group discussions are expected to be facilitated by more innovative and experiential learning methods. Research supports this, with Hung et al. (2019) showing that real-world application-based tasks strengthen critical thinking and collaboration skills. Rotgans and Schmidt (2019) add that challenging problem-based learning improves problem-solving and teamwork skills. In addition, Demirel and Dağyar (2016) show that innovative and experiential learning methods can improve group discussions and student learning outcomes, supporting the use of learning models that integrate knowledge application and collaboration. This suggests that implementing learning models that prioritize knowledge application and collaboration can help address learning challenges in the classroom.

Most teachers also indicated the need to develop learning models that combine problem-based and game-based learning, which allow students to learn in a more enjoyable yet immersive way. They believed that this approach would not only make learning more interesting but also address the problem of students' lack of motivation and participation during lessons. Previous research supports the need to develop learning models that combine problem-based learning (PBL) and game-based learning (GBL) to create more engaging and effective learning experiences. Warren, Dondlinger, McLeod, and Bigenho (2012) underlined the importance of integrating elements of Problem-Based Learning (PBL) and games, such as strategically designed conflicts, context of engagement, goals or activities, and evaluation rules and criteria. They also emphasized the need for measurable outcomes and cognitive conflicts that arise from interacting with the problem at hand.

Furthermore, research by Sancho, Moreno-Ger, Fuentes-Fernández, and Fernández-Manjón (2009) developed the concept of Adaptive Role Playing Games as an immersive approach in PBL. They showed how adaptive role-playing games can enhance the learning experience by providing a dynamic and interactive context that supports student engagement. This approach combines adaptive game elements and a strategic learning context, designed to address cognitive problems and conflicts. This research is relevant because it shows how the integration of role playing games can enrich PBL by increasing student motivation, facilitating social interaction, and providing tools to evaluate success in complex learning contexts. This supports the use of learning models that combine game elements with problem-based approaches to create more immersive and effective learning experiences.

Integration of 21st-century skills such as critical thinking, collaboration, and creative problem-solving skills is a top priority in modern learning. Teachers need a wider variety of methods and resources to design engaging, effective, and real-world-relevant learning, which will facilitate the achievement of educational goals more comprehensively. In line with this, Wrahatnolo and Munoto (2020) highlighted the importance of 21st-century skills—such as critical thinking, collaboration, and creative problem-solving skills—in the modern education system. They emphasized that the integration of these skills is a top priority to prepare students to face global challenges. The results of the study showed that to achieve educational goals comprehensively, teachers need a variety of methods and resources that can support engaging and real-world-relevant learning. In addition, Haryani, Cobern, Pleasants, and Fetters (2021) found that adequate support and resources are essential for teachers to design and implement effective teaching methods, which in turn will improve student learning outcomes. Based on the results of the study, it was concluded that teachers need a variety of tools and methods to accommodate 21st century skills, thereby creating a more effective learning experience that is in line with current educational needs.

Based on the questionnaire analysis conducted, it was found that 30% of teachers have implemented Problem-based Learning in Indonesian language learning. In addition, 23% of teachers stated that they have used interactive game-based applications in the learning process, especially in conducting quizzes. Based on this, both problem-based and game-based learning are actually not new to teachers today. However, by integrating both learning methods, it can be an alternative in learning, especially in language learning. Based on the results of the analysis, it also shows that the need for teachers for a learning model that supports this is very much needed, especially in achieving learning objectives, improving students' thinking skills and realizing enjoyable learning to increase students' learning motivation.

The results of this student response research can be used as a basis for the development of the GOPE model and further evaluation will be carried out to evaluate student learning outcomes and skills in various learning contexts. This model is not only aimed at academic improvement, but also the development of critical thinking skills, collaboration, and problem solving. Furthermore, the GOPE model can be further developed by designing concrete steps for its implementation in the classroom. By innovating from problem-based learning (PBL) scenarios designed with game-based learning (GBL) elements.

4. CONCLUSION

The findings of this study emphasize the importance of developing a learning model that integrates games into problem-solving activities. Such a model is expected to not only improve students' critical and collaborative thinking skills but also foster a fun and engaging learning environment that motivates students. Teachers expressed concerns that current classroom practices are overly theoretical, limiting opportunities for students to think critically, collaborate, and independently solve problems. They highlighted the need for more diverse, authentic, and interactive learning methods to enhance student engagement and participation. The proposed Game-Oriented Problem Exploration (GOPE) model, which combines problem-based and game-based learning, aligns with prior research emphasizing its potential to address classroom challenges, enhance learning outcomes, and support the development of 21st-century skills.

This study's implications underscore the necessity of providing teachers with adequate training and resources to design and implement innovative learning scenarios that bridge theoretical knowledge with practical application. However, the study is limited in scope, focusing on teacher perspectives without evaluating the direct impact of the proposed model on student outcomes. Future research should test the GOPE model in classroom settings to assess its effectiveness in improving critical and collaborative thinking, learning motivation, and academic performance. Additionally, exploring its applicability across different subjects and educational levels can provide broader insights into its adaptability and impact. Addressing these limitations will contribute to the development of robust and scalable strategies for modern education.

Acknowledgments: I would like to thank the respondents who were willing to fill out the questionnaire for data collection for this research. Thank you to Padang State University for providing a PNBPN research grant with the Decree of the Chancellor of UNP Number 394/UN35/LT/2024.

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