

The Influence of *Game Based Teaching* Method with Bingo Games and Learning Motivation on Student Learning Outcomes in Elementary School

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Abstract: This study aims to examine the effect of the application of the game based learning (GBL) method with bingo games and learning motivation on student learning outcomes in Indonesian learning in elementary schools. The research used is quantitative with a pseudo-experimental approach using the Treatment by level 2x2 design. The research was carried out on grade I students at SD Negeri 1 Terara with a total population of 40 students, the sample was determined through stratified random sampling based on the categories of high and low learning motivation. The instruments used include learning outcome tests and learning motivation questionnaires, and data analysis using two-way ANOVA. The results of the study revealed that: (1) There is an influence of the *Game Based Learning* Method with Bingo Toys on Learning Outcomes, (2) There is a correlation between the Game Based Learning (GBL) method on learning outcomes (3) There are Indonesian Learning Outcomes in *Game Based Learning* Learning With the Bingo game, learning outcomes and direct learning are higher for highly motivated students in elementary school. (4) There are Indonesian learning outcomes in *game based learning* with lower Bingo games and direct learning outcomes for low-motivation students in elementary school

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Introduction

Education is one of the foundations in the progress of a nation, the better the quality maintained by a nation, the better the quality of the nation, in Indonesia education is very prioritized, because education has a very important role in the realization of a dignified national civilization.

Method is one of the ways teachers in the teaching and learning process to achieve learning goals in delivering material. The subject matter is sometimes difficult for students to understand because of the inappropriate method. Therefore, the method in this case used by the teacher should be able to make it easy for students to understand the material. One of the most popular methods according to today's times is *games based learning* (GBL).

Games based learning (GBL) if interpreted in Indonesian is game-based learning. *This games-based learning* is one of the game-based learning methods that can help teachers to

achieve the learning goals used by teachers. According to Astuti (2017), the *Games Based Learning* method "can make the learning process exciting and arouse passion for learning so that it can motivate and encourage students to be more creative" The application of the right learning method will provide better results. This effort is very important because only through the learning method can it improve the concepts being learned. In relation to learning methods, especially in Indonesian lessons, there are several learning methods that can be considered using appropriate learning models, strategies, and methods.

One of the efforts to create an interesting and enjoyable learning process by using suitable and appropriate learning models or strategies. The Game *Based Learning Motto* is considered suitable to be used to create an effective learning atmosphere for students. In order to create an effective learning atmosphere, the right learning method is needed. *Game Based Learning* is a game/game application that has been specially designed to help in the learning process. In general, the pattern used in this media is the learning process through the pattern of learning by doing. Games based learning is a serious type of game that is designed for a specific purpose in learning. According to Prasetya, et al. (2013) *Game based learning* is a form of learner-centered learning that uses electronic or digital games for learning purposes.

Interest in learning can also be one of the supports for high student learning achievement. This is strengthened by the opinion of Yanti & Sumianto (2021) who said that "Factors that support a student to excel in learning include students' interest in learning". So that the relationship between learning interest and student achievement is quite close. Not only on student achievements, but on students' motivation and enthusiasm in learning in the classroom.

In improving intellectual, emotional calmness and social maturity that can affect children's cognitive, effective, and psychomotor skills so that they can change for the better, it seems that there must be an innovative method. The goal is to know students in improving their learning outcomes. Of course, things that can stimulate or grow the learning environment that results in the students themselves. Any friend, a method, if it is not supported by a pleasant and effective atmosphere, will cause laziness for children to be invited to learn.

Motivation is one of the important factors that affect student learning and learning outcomes, a person who is motivated has a tendency to have all his abilities to get optimal learning results in accordance with the expected goals (Julyanti E. et al, 2021).

Learning activities in the classroom, the role of a teacher cannot be replaced by any modern electronic device. This is because in the teaching and learning process, it is expected that it is not just about delivering subject matter. The aspect of professionalism of a teacher is required to develop learning in the teaching and learning process by choosing the right strategy and in accordance with the psychology of the students (age range 6-12), especially in Indonesian language learning.

Based on the results of the observations I made on grade I students of SDN 1 Terara grade I students, there were several students who excelled and more who did not excel had a score below average, namely 50% (incomplete), 80% learning completeness, it shows that the students' creativity and activity are far from the success indicator, which is 75% of the number of students or those who reach KKM.. The problems are such as lack of vocabulary mastery, reading comprehension, writing and the use of grammar, and lack of Learning Motivation.

Problems that often occur in the field are a decrease in students' motivation to learn, where students lack the drive to learn, often experience difficulties in their studies which affects their academic performance and personal growth.

The problem encountered during learning activities at school is the number of students who chat and joke with their friends and there is a sense of boredom among students about learning in class.

The next problem encountered in schools is that students are less able to read and write because students lack motivation to learn, lack of interest in learning, resulting in low learning outcomes. Only as big as the difficulties in learning Indonesian it is hoped that the learning process carried out can provide a more meaningful learning experience to students.

This difficulty in learning is a real disorder in children related to general and special tasks, which is suspected to be caused by neurological dysfunction factors, psychological processes, and other causes so that children who have learning difficulties show low learning achievement (Andi Asmawadi. 2021).

Interactive lesson materials provided by teachers can attract students' interest to increase their learning activities, so the learning results increase. According to Ahmad Susanto (in Rahmayati, 2023), learning outcomes are the changes that occur in students, both in terms of: 1: Effective (students want to show high curiosity about the material, collaborate with friends, and respect the opinions of others in discussions). 2: Cognitive (students can identify the theme and purpose of reading, and are able to answer simple questions related to reading). 3: Psychomotor (students can write sentences with correct spelling, practice pronouncing new words well, and perform listening activities by taking notes effectively).

Research Method

The design used in this study uses a *2X2 2-way ANAVA Treatment By level design*. In this study, there are two groups that are given treatment, and the class that is given *treatment* is called the experimental class and the class that is not given *treatment* is called the control class (Sugiono 2021).

The target population is all 1st grade students of SD Negeri 1 Terara totaling 40 people, divided into 2 classes. The sample selection method applied is the *Stratified random sampling* technique by considering high and low levels of learning motivation (1) spreading the lifting of learning motivation, (2) calculating and sorting the highest to the lowest scores, (3) determining students who have high and low motivation, (4) determining experimental and control classes. The selection of research subjects used class 1 A as the *treatment* group and 1 B as the control group. This study tool consists of learning outcome questions and a learning motivation survey form. The instrument validity test used *Pearson Product Moment* correlation and the reliability test used *Crombach Alpha*. In addition to being carried out, requirements tests are also carried out in the form of Normality Test using *Liliefors* and Homogeneity test using Barlett Test. Statistical Analysis using Bifactorial ANOVA method (Gu. 2014).

Result and Discussion

A two-factor ANOVA method with a 2x2 design was implemented to approximate the mean variation in direct and combined influences. If an interaction is identified, the analysis will be followed by simple effect testing, namely:

1. There is an influence of the *Game Based Learning* Method with the game Binggo on student learning outcomes in Indonesian learning in elementary schools.

The results of the two-path ANOVA test analysis showed that learning methods and learning motivation had a significant influence on student learning outcomes. In the learning method variable, a value of $F = 715.806$ was obtained with a significance of $p < 0.001$ and an influence contribution of 95.2% (Partial Eta Squared = 0.952). This confirms that the *Game Based Learning* (Bingo) method is much more effective in improving learning outcomes than conventional methods. Furthermore, the motivation variable also showed a very strong influence, with a value of $F = 1233.087$, a significance of $p < 0.001$, and an influence contribution of 97.2% (Partial Eta Squared = 0.972). This means that students with high motivation consistently have better learning outcomes than students with low motivation. Interestingly, the results of the analysis also found a significant interaction between learning methods and learning motivation, with a value of $F = 21.146$, a significance of $p < 0.001$, and an influence contribution of 37% (Partial Eta Squared = 0.370). This shows that the effectiveness of Game Based Learning is greatly influenced by the level of student motivation, where this method will be more optimal if applied to students who have high learning motivation. Overall, this analysis model has a very high strength with $R^2 = 0.982$, which means that 98.2% of the variation in learning outcomes can be explained by a combination of learning method, motivation, and interaction variables of the two.

2. There is an influence of the interaction between the *Game Based Learning* method and the Binggo game and Learning Motivation on Indonesian learning outcomes in elementary schools.

Based on the two-path variant analysis table (ANOVA) above, information was obtained that the overall research model was significant with a value of $F = 656.680$ and $p < 0.001$, as well as a determination coefficient of $R^2 = 0.982$. This shows that 98.2% of the variation in student learning outcomes can be explained by a combination of learning method factors and learning motivation. This number is very high, indicating that both independent variables have a very strong influence on learning outcomes.

The learning method factor had a significant effect on learning outcomes, with a value of $F = 715.806$; $p < 0.001$; Partial Eta Squared = 0.952. This means that learning methods contribute 95.2% to the variation in student learning outcomes. These results confirm that the use of *Game Based Learning* (Bingo) is much more effective than conventional methods in improving learning outcomes. These findings are consistent with the opinion of Prensky (2001) who emphasized that game-based learning is able to create a more interactive and fun learning environment, thereby encouraging students to be more active in understanding the material. Research by Supriyanto & Wahyuni (2019) also shows that game-based methods significantly improve learning outcomes compared to traditional lecture methods.

Learning motivation factors also had a significant influence, with a value of $F = 1233.087$; $p < 0.001$; Partial Eta Squared = 0.972. This means that learning motivation explains 97.2% of the

variation in student learning outcomes. In other words, the higher the motivation that students have, the higher the learning outcomes achieved. This finding is in line with Sardiman's (2014) theory which states that motivation is the main driving force that determines a person's learning success. Hamalik (2012) also underlined that motivation is an important internal factor that directs, moves, and sustains students' learning behavior.

3. There are Indonesian Learning Outcomes in *Game Based Learning* with Binggo games higher Learning Outcomes and direct learning for highly motivated students in elementary schools.

The results of the data analysis showed that learning methods had a significant influence on student learning outcomes by considering the level of motivation. The group of students who participated in the learning using *Game Based Learning* (Bingo) with high motivation obtained an average learning outcome of 92.8, this figure is the highest achievement compared to other groups. Meanwhile, students who used the same method but had low motivation still showed fairly high learning outcomes, namely 78.2, although still lower than the group with high motivation. On the other hand, the group that participated in learning with conventional methods obtained lower learning outcomes, where students with high motivation only reached an average of 82.2, while those with low motivation obtained the lowest average score of 63.2. These findings indicate that the *Game Based Learning* (Bingo) method is more effective than conventional methods in improving learning outcomes, as well as proving that learning motivation is an important factor that determines the success of students in absorbing subject matter.

Theoretically, the results of this study are in line with the view of constructivism (Piaget & Vygotsky) which emphasizes that meaningful learning occurs when students actively build knowledge through direct experience. Game Based Learning provides an interactive experience that allows students to construct their understanding in more depth. Furthermore, these findings are also reinforced by the Self-Determination Theory (Deci & Ryan, 1985) which explains that intrinsic motivation will increase engagement, perseverance, and academic achievement. This is reflected in the high achievement of learning outcomes in the group of students who have high motivation. In addition, the theory of learning through games (Bruner, 1966) emphasizes that playing activities in learning are able to increase students' creativity, interest, and understanding of concepts, which in this study is reflected in the effectiveness of the use of Bingo in learning. Finally, these results are in line with social cognitive theory (Bandura, 1986) which emphasizes the importance of social interaction, observation, and experience in the learning process. Through games, students are encouraged to interact, collaborate, and at the same time be motivated because of the element of challenge, so that learning outcomes increase significantly compared to conventional learning which tends to be passive.

4. There are Indonesian Learning Outcomes between *Game Based Learning* and Binggo Lower Learning Outcomes and direct learning for Low motivation students in Elementary School.

The results of the data analysis in the table above show that there is a significant difference in learning outcomes between students who are taught using the *Game Based Learning* (Bingo) method and students who are taught using conventional methods, both in the group with high

motivation and low motivation. In a group of highly motivated students who participated in Bingo-based learning, the average score of learning outcomes reached 92.8 with a 95% confidence interval between 91.83–93.77. This score is the highest achievement among all groups, showing that a combination of innovative learning methods and strong internal motivation can result in optimal learning achievement. In contrast, students with low motivation on the same method only obtained an average of 78.2, although it was still higher compared to the conventional group. In the conventional group, highly motivated students had an average of 82.2, while low-motivated students were only 63.2, which was the lowest average score among the entire group. This pattern shows that in addition to learning methods, learning motivation factors also have a great influence on student learning outcomes.

These findings confirm that *the Game Based Learning* (Bingo) method is superior to conventional learning. This advantage is in line with the opinion of Prensky (2001) who stated that the integration of games in the learning process can increase student involvement, concentration, and enjoyment in learning. Game-based learning not only presents the material in an interesting way, but also creates a healthy competitive atmosphere that encourages students to be more active. This is in line with the research of Supriyanto & Wahyuni (2019) which found that the application of game-based learning significantly improves students' cognitive learning outcomes compared to lecture methods. In fact, game-based methods are able to foster students' critical thinking, collaboration, and creativity skills.

Conclusion

Referring to the findings that have been described, the following conclusions can be drawn: (1) There is a difference in learning outcomes between the group of students who are taught with *the Game Based Learning learning method* and the group of students who are taught with the conventional learning method (Lecture) in 1st grade students of SD Negeri 1 Terara. It is known that the variable learning method has a significant influence on the learning outcomes of Indonesian language students of elementary school students. (2) There is an effect of the interaction of learning methods and motivation on the learning outcomes of grade 1 students of SD Negeri 1 terara, There are results of the interaction test between learning methods and the level of student learning motivation. (3) There is a difference in the learning outcomes of students who have high motivation who are taught with the *Game Based Learning* learning method and those who are taught with the Conventional method in Indonesian subjects, (4) There is a difference in the learning outcomes of students who have low motivation who are taught with *the Game Based Learning* learning methodwith those taught using the Conventional/Lecture method in 1st grade students of SD Negeri 1 Terara. Then the suggestions that can be given are as follows: (1) educators are advised to apply various innovative learning methods, one of which is *the Game Based Learning* (GBL) method in Indonesian learning because the use of this model in the learning process shows effectiveness in improving students' abilities. (2) The teaching and learning process of educators should use various interesting learning media to foster students' enthusiasm for learning. Learning media can be in the form of interactive media, animations, or learning videos; (3) The findings in this research can be used as a foundation for further research with a wider scope, such as involving different class sizes, learning durations, and different learning media so that the influence of

the Game Based Learning (GBL) method can be interpreted in a more comprehensive way.

This research has several limitations that open up opportunities for further study. First, focusing on one variable learning method limits understanding of the impact of *Game Based learning* (GBL) on other students' abilities, such as collaboration. Second, this finding is specific to the context of the subject being studied, namely at SD Negeri 1 Terara so that reflection is needed to test the generation in other institutions. Finally, the existing quantitative data does not explain the factors and how the barriers arise so this encourages quantitative research to uncover the good reason.

Recommendation

Based on the research findings, teachers are encouraged to apply Game Based Learning (GBL), particularly Bingo games, as an alternative instructional method to improve student learning outcomes and motivation in elementary schools. Future studies are recommended to involve broader samples, different subjects, and varied game-based media to strengthen the generalizability of the findings

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