



FIELD GAMES TO STIMULATE ELEMENTARY SCHOOL STUDENTS' PROBLEM SOLVING ABILITY

Problem solving stimulation by Field Game for elementary school

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Abstract

The purpose of this study was to determine the problem-solving ability of elementary school students. The method used is Pre Experimental Designs with a Group Pretest Posttest. Samples of 12 elementary school children were divided into two teams. Teams A and B consist of six students each. The instrument used in this research is the Game Performance Assessment Instrument (GPAI). The data analysis technique used was the T-test. The results obtained from the pretest of team A had an average GPA score of 5.4, while team B had an average GPAI score of 4.64. The results obtained from the posttest from team A showed an average GPAI score of 6.94, while team B had an average GPAI score of 6.6. It turns out that there is an increase in children's problem-solving abilities. Based on the test, the data is declared normal and homogeneous—the T-test sig result of $0.018 < 0.05$, stating differences in students' problem-solving abilities. So the field game effectively stimulated elementary school students' problem-solving abilities.

Keywords: *Field Game, Problem Solving, TGFU, GPAI*

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INTRODUCTION

Society 5.0 or can interpreted *society 5.0* is a concept introduced by the government Japan . Draft *society 5.0* does not only limited for factor manufacture but also solving problem social with help integration room physical and virtual (Skobelev&Borovik , 2017). *Society 5.0* is a concept developed for the sake of its formation Super smart communities that have pattern behavior optimizing utilization *Internet Of things*, *Big Data* , and *Artificial Intelligence* as

solution for life more society good(Setiawan & Lenawati, 2020) . In the era of *society 5.0* society faced with enabling technology access in felt virtual space like room physical. In technology *society 5.0* AI based on big data and robots for To do or support profession man(Nastiti & Ni'mal'Abdu, 2020) . Society 5.0 aims for create human centered society in which development economics and settlement challenge Public achieved, and people can enjoy quality full high life active and comfortable(Handayani & Muliastri, 2020) . *Society 5.0* will impact on all aspect life start from education , urban planning , transportation , agriculture , industry and health. circumstances this especially on health relate with function immune disturbed body so that cause Diabetes Mellitus sufferers more susceptible caught disease infection (Alisa, Amelia, Literature, & Depitasari, 2020) .

Small ball games are used in physical education. One of the small ball games is baseball which is included in the curriculum. Baseball games can develop basic locomotor and psychomotor movements to stimulate throwing, catching, running and hitting the ball precisely (Nurhikmah, 2021). Whereas locomotor and non-locomotor throwing can be stimulated by playing baseball to facilitate learning, it is better to modify the tools. (Lusye, 2016; Santoso et al., 2020).

Small ball learning or traditional games, one of the lessons in elementary school, is conveyed through Teaching Games For Understanding (TGUFU) on baseball games with the ability to master basic skills, (Supriadi, 2019). The TGUFU learning method can provide reactions to the ability to control emotions and be able to make decisions on teamwork, (Cartono, 2020). The use of TGUFU turns out to have been used to increase basic skills in games and increase emotional control abilities and decision making, further related to decision making which is also a skill in applying skills in training that applies the basic rules of the game (Alfarizi, 2019). So that TGUFU learning is still unknown and has never been used in learning (Y. Touvan Juni Samodra 2013). This is something new that needs to be tested, needs to be proven, needs to be seen in terms of its activities in improving problem solving. The TGUFU learning model is in the form of activities that require thinking, to solve problems in cognitive activities using motion media.

Through the implementation of measurements using the Game Performance Assessment Instrument (GPAI) method, an assessment is used as an instrument for collecting data on learning which includes base components, adjustments, decision making, skill execution, support, cover, and guard/mark, innovative approaches and provide positive benefits in the

teaching and learning process, (Purnama & Lubay, 2018) (Griffin & Bulter, 2005: 131-133), (Supriadi, 2019), base is the return of players in accordance with the home or recovery position that has been determined as a place that is safe from the opposing team's throws, (Hasbi), Adjust is the adjustment of the player's condition to the opponent's movements both from the attacking team and from the defending team, decision made is making good and accurate decisions after what to do when the game has started. For example, when the attacking team makes a stroke when the ball has been hit, a decision will be made whether to remain motionless at the hitting spot or run to the stop post, skill execution is the execution of skills in existing games such as skills to hit the ball correctly, throw according to the batsman's request, catch the ball accurately, support is support that tries to maintain a game to be more alert and careful, cover is the player's defense in keeping the opponent in accordance with the movement of the opponent or the movement of the ball, and guard/mark is guarding by guarding the ball and the opponent. Mitchell, Griffin, and Oslin (1998). The Game Performance Assessment Instrument (GPAI) is a research instrument that is used as a way to observe performance behavior related to solving tactical problems (Oslin et al., 1998). The important thing in GPAI is to find out the results of children's playing abilities in making decisions to solve problems (June Samodra, 2015) (Lee, 2016). The indicators used in the GPAI instrument are basic techniques, decision making, and cover as a form of assessment in this study Griffin, Linda L. (1998: 220). So that GPAI is a summary of cognitive, effective, and psychomotor assessments (Y. Touvan Juni Samodra 2013).

Playing is an activity for solving problems, there are two problems in playing, namely defending and attacking. Defending is about how to block or prevent scores, attacking is how to score or get points as a team. How to defend with basic technical skills and basic movements by running, throwing, catching, covering or closing moves. How about attacking runs, hits, positions, and there are casualties. Defense and attack activities that represent problem shooting will be assessed with the GPAI. TGFU is learning how to make decisions in solving problems.

Based on the facts, the review shows that field games focus on playing as an understanding that can educate students. Is it true that it can develop basic movements, is it true that it can develop critical thinking skills. To test or prove that these field games can educate students in developing basic motor skills and abilities. With problem solving, students will: a will actively examine and think about solving the problem in groups, so that the assessment uses GPAI.

METHODS

Experimental research method. The form of research that will be used is Pre-Experimental

Designs. The research design that will be used is the Two Group Pretest Posttest Designs (Sugiyono 2018: 72). The population in this study were all 42 students of Madrasah Ibtidaiyah Al-Ihsan Kubu. The sampling technique in this study used a systematic sampling of 12 people.

Giving treatment with 12 meetings as learning to improve children's ability to make decisions. The first meeting how to hit 3rd base, the second meeting how to hit 4th base, the third and fourth meeting how to hit home, the fifth meeting how to hit 2nd base, while base 1 is filled with people, the sixth and seventh meeting how to hit 2nd base base 3, while the 1st and 2nd bases are filled with people, the eighth and ninth meetings how the batter goes to base 4, while the 1st, 2nd and 3rd bases are filled with people, and the 10th and 12th meeting how the batter goes to home, while base 1 ,2,3 and 4 are filled with people. With the aim to improve children's problem solving skills in thinking critically about problems. To find out the results of the child's ability to make decisions, a posttest was carried out as a benchmark for children's decision-making abilities with a modified game of baseball games. The GPAI ability test was carried out twice both during the pretest and posttest and was documented via video.

The data collection technique used the Game Performance Assessment Instrument (GPAI) as an assessment in observing performance behavior related to solving problems (Griffin, Linda L. (1998: 220). The test was carried out with a modified baseball game as a pretest that was assessed, namely basic motion, decision making, and cover while the posttest is the same as using a game modification of the baseball game which is assessed, namely basic motion, decision making, and cover. Then data analysis was carried out in this study through prerequisite tests of normality, homogeneity, and T test (difference test) Differences in pretest and posttest results and significantly assisted using the SPSS 20 application.

RESULTS AND DISCUSSION

Based on the results of the analysis of the description of the pretest and posttest data in the calculation of table 1 of the results of the GPAI pretest and posttest, it can be concluded that the average value of the pretest GPAI assessment results for team A was 5.4 and the average posttest score was 6.94. Whereas in team B the average GPAI assessment results obtained from the pretest were 4.63 and the posttest scores were 6.6. The histogram graph of the average pretest and posttest results is as follows:

Table 1. Results of GPAI Pretest and Posttest Assessments

Penilaian GPAI			
No	Nama Siswa	Pretest	Posttest

1	A	Fa	4,78	9,33
2		R	6,55	11
3		Fa	6,66	7,33
4		Si	7,08	5
5		Sa	4,33	5
6		Sy	3	4
rata-rata			5,4	6,94
1	B	Faj	5,89	7
2		Ray	4	4,42
3		El	3,67	7,78
4		Ci	2,89	7,07
5		Af	3,67	7
6		Raf	2,33	4
rata-rata			4,63	6,6

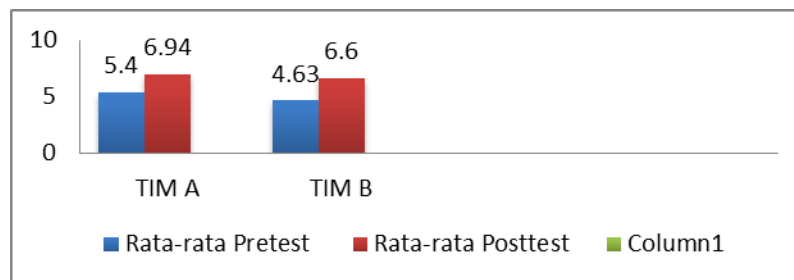


Diagram 1. Average pretest and posttest GPAI assessment results both team A and team B

The first prerequisite test is the normality test and homogeneity test.

Table 2. Kolmogorov Smirnov Normality Test

N	12
sig. (2-tailed)	,200

The normality test was carried out to find out whether the data obtained was normally distributed or not. Based on the results of the Kolmogorov Smirnov SPSS calculation from table 2, the calculated significance value is $0.200 > 0.05$, which means that it is normally distributed.

Tabel 3. Uji Homogenitas Levene Statistic

Hasil tes GPAI	Levene statistic	df1	df2	Sig.
Based on mean	,892	1	12	,355

Based on the SPSS results from table 3 the results of the analysis if the calculated significance value

is > 0.05 indicates the results of the data come from populations that have the same (homogeneous) variance. Based on table 3 based on maen for the variable results of the sig count of the GPAI test is $0.355 > 0.05$, it can be concluded that the variance of the data on the test results is homogeneous.

Table 4. Overall Prtest and Posttest Test

Uji T	N	Sig,(2-tailed)
Pretest dan posttest keseluruhan	12	0,018

Based on the results of SPSS table 4 analysis results of a significance value (2-tailed) 0.018 < 0.05 , so it can be concluded that there is a significant difference in the results of the pretest and posttest. With the difference in the results of the pretest and posttest as a result of the research which showed a greater posttest result, this experimental research was declared successful in increasing the problem solving abilities of elementary school students.

Discussion

Based on data analysis, it is known that there is an increase in children's ability to solve a problem by using GPAI as a benchmark for the extent to which children are able to make decisions about the problems they face (Fransiska et al., 2020). Increased interest in children's learning to be able to think critically in making a decision (Karisman, 2020). Improvement in providing stimulation to children to be able to improve basic movement skills in real sports (Purnama & Lubay, 2018). Improve in processing the information obtained into memory to practice again (Yusra & Al, 2017). Increasing children's sports activities in game modification (Yudhi et al., 2018). Improving children's gross motor skills through easier and more focused games as decision making (Hadi et al., 2021). Increase children's confidence in making decisions (Abbas & Abidin, 2016). Improving children's ability to communicate to channel decision-making strategies in solving problems (Utharina et al., 2019). Improving the ability of physical activity in improving critical thinking skills (Y. Touvan Juni Samodra 2013). Increase the agility of children in making decisions about the game to change the form of movement quickly and precisely to avoid opponents (Riyanto, 2017). Improving automation abilities in basic movement skills so that children are able to move automatically without being stiff, as it makes it easier for children to make decisions without hesitation to move (Pulu, 2020). Improving children's physical development in games that are easier to do and liked by children in the sports learning process, so that children are able to think critically about their own abilities in making decisions (Apit, 2012).

Based on the results of the discussion above, TGFU can improve critical thinking skills which stimulate children to be able to make decisions in a game. So that children can improve their ability to analyze a problem that arises and what they face. To decide exactly what to do and how to do it. With the existence of a game field as a benchmark for children in making a decision by using GPAI as an assessment of the extent to which children can solve their problems. The higher the GPAI value, the higher the child's ability to think critically in solving the problems they face.

CONCLUSION

The results of the research and discussion prove that field game modifications are effective in stimulating the problem-solving abilities of elementary school students. These results can be seen from the positive increase in the posttest average value compared to the pretest average value and the increase that occurs is significant. These results indicate that field games can be used as physical education learning activities in the form of games that are able to stimulate students' problem-solving abilities. Weaknesses in this study the field used in this study is still in the poor category and the sample of this study is small. Recommendations for further research can reveal field game modifications in developing basic movement abilities.

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