

Research Article

The Effect of Traditional Games Congklak Lidi and Sumbar Suru on the Concentration Level of Grade 3 SD Student

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Abstract.

Technological sophistication attracts students' attention to gadgets, thereby impacting student learning achievement. Several factors cause decreased student achievement, one of which is low student concentration. The purpose of this study was to test the effect of the traditional *congklak lidi* and *sumbar suru* game treatment on the concentration of 3rd grade elementary school students. This research is a type of quasi-experimental research with a research design between subject design and non-randomized pretest-posttest control group design. The sample technique used is purposive sampling with the required subject characteristics in the study, namely elementary school students aged 8–9 years, no physical disabilities or mental disorders, female and male, and a low pretest scores. Researchers took 9 subjects at each school to be given *congklak lidi* and *sumbar suru* treatment. The data collection method used was the Wilcoxon non-parametric analysis test and Mann–Whitney analysis to see the difference in pretest and posttest scores. Based on the results of data analysis, it can be concluded that the traditional games of *congklak lidi* and *sumbar suru* are able increase student concentration.

Keywords: concentration, congklak lidi, sumbar suruCorresponding Author: Iswinarti;
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1. BACKGROUND

Elementary school children aged 6-12 years experience relatively rapid development. At this age children have a high curiosity about something. At this time children tend to have interest and curiosity about gadgets. The presence of gadgets greatly affects the development of children. One of the crucial consequences is the child's concentration decreases. Decreasing student concentration requires variations in the teaching and learning process at school [1]. This shows that the current culture is dominated by digital technology, which contributes to influences in child development [2]. Besides digital games having advantages, digital games will increasingly erode traditional games [3]. The results of the study difficulty survey showed that 86% of students concentrated on learning and 73% of students lacked social skills. The survey results have an effect

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on the quality of education [4]. As for one of the journals explained that one of the problems that often arises in the learning process is the lack of student attention during the learning process takes place [5].

Concentration comes from the English language, namely concentrate which means to concentrate and concentration which means concentration [6]. It can be interpreted that concentration is an activity in which a person focuses attention on a particular object. In line with other findings which state that concentration is an important role that students need to have so that students can focus on the material provided by the teacher [7]. When students can focus on one object and override others, it is said to be concentration [8]. Concentration is needed especially for school-age students because it can support learning outcomes well [9]. The cause of students having difficulty concentrating is because students cannot pay attention to the teacher's explanation properly, have difficulty accepting material, and have difficulty answering and working on questions from the teacher [10]. Attention is a complex cognitive process to select important issues and ignore things that are less important. Attention is used to help a person to concentrate and focus on a given stimulus for a long time [11].

Based on the results of an interview at one of the elementary schools located in Boyolali, it was found that the concentration in reading of the students there was still low [12]. In this regard, it was found from other studies that concentration problems showed several behaviors such as daydreaming when given subject matter, not paying attention to the teacher who was in front, and some chatting with friends [10]. The most basic problem of learning problems is that it requires high concentration of learning. students lose the concentration of learning not only in the last minute but in the early minutes after the start of learning [6]. In line with the description of the previous phenomenon, the researcher encountered a similar problem at an elementary school in Tulungagung. Based on the results of observations and interviews, it was found that 3rd grade elementary school students had problems related to learning concentration. There are several behaviors that arise when given learning material, they don't pay attention, play alone, chat with friends, and prioritize asking questions at the end rather than paying attention to the material from start to finish. The researcher strengthened the data by measuring the students' concentration level using a puzzle board and measuring it based on a behavior checklist. There are 6 students who have low concentration and 4 students have high concentration. This has an impact on students' literacy and numeracy abilities.

From the description above it is related to student concentration so that it attracts researchers to conduct research related to the concentration of 3rd grade elementary

school students. Based on the phenomenon and empirical data the researcher decided to take the subject of grade 3 elementary school students. From the implementation of the concept of child development to learning in elementary schools with the age of 6-8 years, it is generally necessary to pay attention to the abilities and potential of children. The learning process received by children in grades 1, 2 and 3 is more focused on the assignment of reading, writing and arithmetic abilities. During the concrete operational stage (children aged 7-11 years) they already have arithmetic skills such as adding, subtracting, multiplying and dividing [13]. The development of children's thinking skills at the age of 8-12 years has a strong memory, at this age the child begins a period of learning, adds skills, knowledge and good habits [14]. This statement is in line with the findings of the phenomenon of learning concentration problems that affect literacy and numeracy abilities in grade 3 elementary school students. From the description above these problems can be improved using traditional games.

There is previous research that discusses the existence of traditional games as learning media in schools. Traditional games are very important to be developed for children, especially elementary school children. The results showed that in the game students were trained to learn to count, concentrate and balance the body [15]. Traditional games are cultural products that have great value and have messages behind them. Character education can be formed through traditional games from an early age because traditional games are cultural assets as a cultural characteristic. Traditional games can help children's cognitive development because traditional games require the ability to think logically and comply with rules that have been formed and agreed upon [16]. Various types of traditional games in Java include: *congklak/dakon*, *crank*, *gobak sodor*, *mushroom*, *betengan* stilts, etc. [17]. From the presentation of several of these journals, it shows that traditional games have many benefits to reveal a number of things, so researchers use traditional game media to influence variable y (concentration).

Based on the background explanation above, it shows that traditional game has many impacts, one of which is on student concentration. Related to some of the phenomena above, the problem can be formulated, namely how is the effect of giving the traditional game *congklak* stick and *sumbar suru* to elementary school students. The traditional games of *congklak lidi* and *sumbar suru* are chosen to be given to elementary school students. *Congklak lidi* and *sumbar suru* are traditional games that require children's concentration while playing. This research has general and specific objectives. The general objective of this research is to preserve traditional games for grade 3 elementary school students. The specific objective of this research is to see the effect of giving traditional *congklak* stick and *sumbar suru* games on student concentration.

This research will benefit from increasing the concentration of grade 3 elementary school students playing which will later be useful as input and recommendations to improve the quality of student concentration.

The ability to concentrate is related to reading and listening. One must maintain concentration to obtain information, including in the educational process. Attention will help someone in gaining knowledge. It is important for students to pay attention and concentrate because attention and concentration will increase competency and skills to memorize content in a longer period of time [18]. Other sources state that concentration is an important variable that can affect cognitive, affective, psychomotor, and other scientific processes [5]. Learning concentration is an indicator that is believed to be able to facilitate students in achieving learning goals [19]. Focus (strong attention) in active children tends to have the ability to focus attention, for example when playing puzzles [20].

There are several aspects of concentration, among others: 1) Aspects of task completion, individual ability to complete a given task and indicators based on the number or final score of the task. 2) Aspects of persistence, individual consistency in completing tasks and indicators based on duration. 3) Focus defense aspect, resilience to the task or stimulus given, the yardstick of this aspect is how many times the individual will be tempted by things other than the task or stimulus given. 4) Aspects of regularity, completion of individual tasks carrying out procedures or steps sequentially [21]. These four aspects can be used as aspects in increasing the concentration of grade 3 elementary school students.

In this study using a puzzle board media as a measuring tool pre-test and post-test to measure individual concentration. A puzzle board of 24 pieces with different characters. Puzzle is a game that requires precision and trains to concentrate the mind, because when compiling puzzle pieces requires concentration so that they can be arranged into a complete and complete picture as a whole [22]. The treatment used is a traditional game. Playing traditional games requires the ability to think logically because they contain simple to complex rules and procedures. The higher the difficulty level of the rules in the game, the more cognitive abilities are needed in the game [23]. Traditional games are also games that have a regional or cultural history in which there are human values [24]. Traditional games can innovate to introduce Indonesian culture and develop national character [15].

The values contained in the congklak stick and sumbar suru games cover 4 aspects of concentration, including: 1) the task completion aspect, in this aspect the traditional game *congklak lidi and sumbar suru* will be assessed based on the child's ability to

collect scores in the game. 2) the persistence aspect, in this aspect the duration when completing the game will be considered as an assessment of this aspect. 3) defense focus aspect, consideration of the assessment on this aspect is based on the child's resilience in participating in the game, which means paying attention to how many times the child will be tempted by other things. 4) regularity aspect, when playing children will be given instructions in the game. In this aspect the assessment is carried out based on the suitability between the instructions and the subject's ability to receive and carry out these instructions.

2. RESEARCH METHODS

2.1. Research design

This research is a type of quasi-experimental research with the research design used is between subject design and non- randomized pretest-posttest control group design so that measurements are carried out on different subjects in different situations. The sampling technique uses purposive sampling with predetermined characteristics. In this study the two situations were the situation before being given treatment and after being given treatment in the experimental group and the control group which was not given treatment. In this study, measurements were carried out 3 times, namely giving a pre test before being given a traditional game, then concentration will be measured by giving a post test.

2.2. Variables or concepts studied

In this study there are two variables, namely the independent variable (x) and the dependent variable (y). The independent variable

(x) or the independent variable is a variable that influences it so that it will cause a change in the dependent variable (y) or the dependent. In this study the independent variables used the traditional game of *congklak lidi* and *Sumbar Suru*. The dependent variable (y) or the dependent variable is the variable that is influenced by the free variable (x) or the independent. In this study the dependent variable used by researchers was concentration.

2.3. Research subject

The sample technique uses purposive sampling with subject criteria. The research subject criteria used were 27 students. The characteristics of the study subjects were students aged 8-9 years, had no physical disabilities and mental disorders, were male and female and had pre-test scores from low to high. Researchers took 9 subjects in each school to be further divided into 3 small groups, each of which would contain 3 subjects in the group. Two groups were experimental groups and one group is control group.

2.4. Research Instruments

The instruments in this study were measured using a pre-test and post-test using a behavior checklist with 4 aspects of concentration which include 1) Aspects of task completion, 2) Perseverance, 3) Defense focus, and 4) Regularity [21]. The behavior checklist was rated by two expert in psychology and the instruments were deemed valid.

2.5. Data Collection Procedures

The researchers' initial steps were in the preparatory stage by deepening the material, making measuring instruments, then conducting try outs on subjects with a total of 10 3rd grade elementary school students. Researchers searched for school locations to collect research data and requested permission and initial assessments in 3 different schools. Do a pre test with a puzzle board stimulus. Subjects were initially measured for their ability to concentrate using a puzzle with a total of 24 pieces. The time allotted to complete the puzzle was 12 minutes. Each subject got the chance to play 3 times.

The initial assessment was carried out in 3 different elementary schools, 2 schools were used as the experimental group and 1 school as the control group. Differences in schools as data collection aims to minimize game learning stimulus by the experimental group to the control group. From the results of the pre-test, the testers made a selection based on the standard deviation that had been prepared. Subjects who have low and very low pre-test scores.

Based on the behavior checklist table used, there is a vulnerable value of 1-4 where a score of 1 is for subjects who have very low concentration, a value of 2 is for subjects who have low concentration, a value of 3 is for subjects who have high concentration values

and a value of 4 is for subjects who have concentration values. very high. Assessment of pre test and post test is calculated based on the score of 4 aspects. So the 4 aspects are summed up so that there are 4 categories namely: 1) very low concentration (1-4), low concentration (5-8), high concentration (9-12), and very high concentration (13-16)

Then grouped following the game procedure. The experimental group 1 received the *congklak lidi* treatment and the experimental group 2 received the traditional game from Sumbar Suru. For the experimental group, after receiving their respective traditional game treatment, they will be given a post-test by playing a puzzle with the same code as was played during the pre-test measurement. The code sequence in play is also carried out sequentially 3 times. In the control group, the pre-test and post-test were carried out using puzzle media with the same pre-test and post-test codes.

The researcher intervened using the stimulus of the traditional game *congklak lidi and sumbar suru*. In the aspect of task completion, the score calculation in sessions 1 and 2 is calculated from the number of sticks and seeds obtained. Sessions 1 and 2 with a score of 1. Provisions in sessions 3 and 4 are assessed based on color, namely yellow with a score of 3, red with a score of 2, and green with a score of 1. The provisions for the game of sumbar suru in session 1 when playing there is an arena limit of 40x40 cm, in sessions 2 and 3 the playing area is 35 x 35 cm, and in session 4 the playing field is 30 x 30 cm.

Researchers divided the groups based on the results of the pre test by taking as many as 9 students/l in each school. In the control group the subjects did not receive treatment. From the experimental groups 1 and 2 with the number of subjects each 9 students. Of the 9 students divided into small groups which became 3 small groups with the contents of 3 students.

2.6. Data analysis technique

After collecting the data, the researcher carried out the data analysis process by using a diagram table analysis to see differences in behavior before and after playing the game. Data processing used SPSS, namely non-parametric analysis (subjects < 30 students) Wilcoxon and presented descriptively with a comparison between the pre-test and post-test results with the aim of seeing the differences before and after being given the traditional congklak stick and sumbar suru games. If the post test score is higher than the pre test then the research hypothesis is accepted, it can be stated that there is an effect of increasing the concentration of 3rd grade elementary school students. There

are 3 research groups namely experimental group 1, experimental group 2, and control group. Then do data analysis using Mann Whitney to see the effect of each group.

3. RESULT

From the results of processing the Wilcoxon test data, the results are as shown in the table below:

TABLE 1: Wilcoxon test pre-test and post-test data.

Group	Asymp. Sig. (2-tailed)	Information
Experimental Group 1	0,007	There is Influence
Experimental Group 2	0,007	There is Influence
Control Group	0,880	No Influence

Based on the results of the Wilcoxon test using SPSS in the table above, the asymp values are obtained. Sig in experimental group 1 with a value of $p < 0.05$ ($p = 0.007$). These results indicate a significance rating of 0.007 so that it can be said that the *congklak* lidi treatment has an effect on increasing concentration. In the experimental group 2, the results obtained were $p < 0.05$ ($p = 0.007$). These results indicate a significance rating of 0.007 so that it can be said that the administration of the *Sumbar Suru* treatment has an effect on increasing concentration. In the control group the results obtained were $p > 0.05$ ($p = 0.088$). These results show a significance rating of 0.088 so that it can be said that the control group was not affected by increasing concentration. So, based on the Wilcoxon test above, it shows that giving treatment to the experimental group 1 and experimental group 2 has an effect, while the control group has no effect on increasing concentration.

TABLE 2: Mann Whitney test data pre-test and post-test.

Group	Sig.(2-tailed)	Information
KE1 & KK	0,000	Significant
KE2 & KK	0,000	Significant
KE1 & KE2	0, 186	not significant

Based on the analysis of data calculated by Mann Whitney using SPSS, the results of the pre-test and post-test in the experimental group 1 and the control group obtained $p < 0.05$ ($p = 0.000$). These results indicate that there are differences in values in the experimental group 1 and the control group. Tests in the experimental group 2 and the control also showed that there was a significant difference in value with a $p < 0.05$ ($p = 0.000$). The results of the difference in group values can be interpreted that the

traditional games given to the experimental group 1 and experimental group 2 have an influence on student concentration. The results of the analysis test for the experimental group 1 and experimental group 2 obtained a p value > 0.05 ($p=0.186$). These results mean that the experimental group 1 and experimental group 2 do not have a significant difference in value. In the comparison of the experimental group 1 and the experimental group 2 there was no effect. So, it can be concluded that the treatment of the traditional game *congklak stick* and *sumbar suru* both had an effect on the concentration of grade 3 elementary school students, the results of the comparison of the experimental group 1 and experimental group 2 were not significant or it could be interpreted that they had no effect.

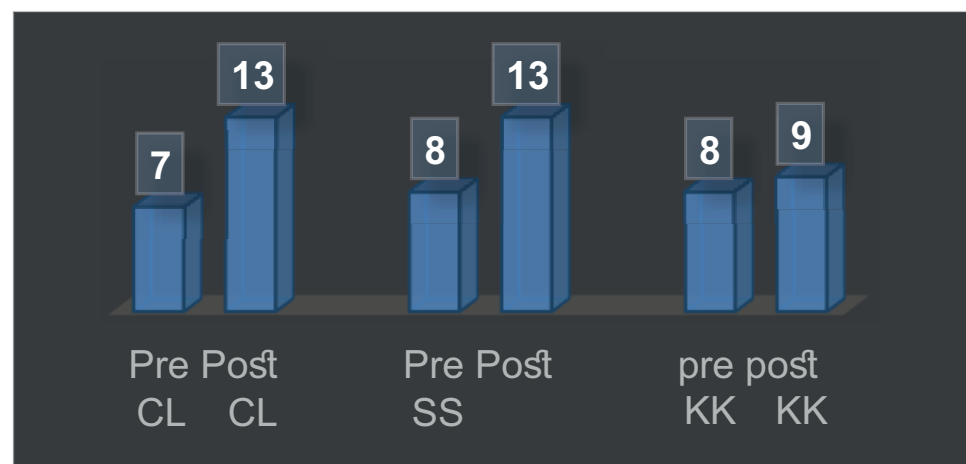


Figure 1: Diagram of pre-test and post-test comparison values.

Based on the bar chart, the comparison of the group's pre-test and post-test scores showed that the experimental group 1 and experimental group 2 had higher scores than the control group. In the experimental group 1 with the *congklak lidi* game treatment, the average pre-test score was 7 and after being given 4 sessions of the *congklak lidi* game, the average post-test score for each subject was 13. In the experimental group 2 with the traditional game treatment *Sumbar Suru* obtained an average pre-test score of 8 and after 4 sessions of *Sumbar suru* treatment the average value was 13. Meanwhile in the control group the pre-test average score was 8 and the post-test average score was 9.

Giving treatments that are carried out successively will have an effect on increasing student concentration, because students will experience a learning process or can be called experiential learning. The theory of experiential learning is defined as learning through experience. Experiential learning requires cognitive processes to assist the learning process through stimulation of tools and in the form of training. The important things that must be considered are individual participation in a real or concrete activity

with the aim that it can be learned [25] In this case the tool used is the puzzle board, played 3 times in a row with different codes.

4. DISCUSSION

Based on the research conducted for \pm 8 days, the results obtained were that there was an increase in the ability to concentrate in grade 3 elementary school students through the traditional game congklak stick and sumbar suru. These results were proven by the difference in the results of the pre-test and post-test in the experimental group and the control group before being given treatment and after being given. The success rate based on the Wilcoxon analysis test in the three groups showed a significant difference after being given treatment in the experimental group. From the results of the comparison of the 3 groups, a significantly higher difference was obtained, namely in the experimental group 1 compared to the experimental group 2. The experimental group 1 used the traditional congklak stick game treatment. It can be interpreted that the congklak stick game can significantly increase student concentration. In line with previous research which stated that traditional games can be used as learning media to increase concentration [15].

Behaviors related to academic achievement include concentration and memory [26]. According to Krawietz, students' academic success requires the ability to concentrate in their learning. Lack of concentration becomes an obstacle in understanding and capturing material and information that is around, children become less focused, unable to complete tasks, less organized, and less diligent. With high concentration abilities it can make it easier for students to master the material provided and increase student motivation and enthusiasm when learning [8]. The higher the concentration of students, the easier it will be for students to understand the material and do assignments. It is difficult to maintain maximum student concentration during the process of learning activities in class, because there are many distractions that can have a negative impact on student concentration and learning [27]. There are several ways that can be used as a medium to increase concentration, one of which is traditional games [28].

Traditional games are cultural products that have great value and have messages behind them. Character education can be formed through traditional games from an early age because traditional games are cultural assets as a cultural characteristic. Students play to explore, find, and ask questions. In Spain, play is considered a basic necessity, because the motivational aspect of play is considered to be an ideal resource

used in schools to convey the overall content of the subject matter and is also considered a significant link for learning. The Spanish government considers it necessary to develop varied and interesting games to provide students with many learning opportunities [29]. Traditional games can be used as innovative learning media if applied and used appropriately, systematically, and practically [25].

These traditional games can innovate to introduce Indonesian culture and develop national character [15]. In line with this opinion, it is explained that traditional games have also proven effective for developing social skills. Traditional games are one of the educational game tools (EGT) that teachers can use to stimulate and develop abilities in children [30]. Many elements are contained in traditional games including agility, speed, coordination, cooperation, etc. [31]. Traditional games are games that are played by one or more than one person so that traditional games are included in static games [32]. Bekelan, congklak stick, and selentikan are traditional Javanese games which according to the analysis of their playing procedures have an inherent value, namely the value of learning to solve problems. When playing games, children are required to concentrate, make decisions, set strategies, and complete tasks starting from easy levels to difficult levels [3].

The congklak stick game requires players to concentrate in order to win the *congklak lidi* game. The condition when the subject tries to pick up the stick while playing so it doesn't touch the other stick is a form of concentration. The subject sets the strategy of releasing the stick when starting the game, and the focus of the subject is on the game and the rules set in the game (not allowed to move places when playing). The subject played the *congklak lidi* game by forming a group, with 3 group members. From the 4 sessions given, it can be seen that the average student has improved in aspects 1, 2, 3 and 4. This is due to the repeated learning factor. Likewise in the game *sumbar suru*, the subject requires concentration in playing to win the game. The subject needs to concentrate when scooping out the tamarind seeds by paying attention to the area provided. Subjects are prohibited from scooping seeds that have left the arena. The effect of implementing procedures where the arena in each session is different and scoring seeds in several different sessions affects the results from the aspects of completing tasks, persistence, regularity, and maintaining focus.

From previous research using the same method, namely BERLIAN and the traditional *congklak lidi* game, the authors used the BERLIAN method to see the effect of giving the traditional congklak stick and *sumbar suru* games on student concentration. There is an opportunity to reflect on the activities experienced. The experiences learned come from structured experiences and real life. In accordance with previous research conducted by

Iswinarti to see the effect of character education on children using the Berlian method, in this study the traditional games used were bekelan, congklak stick, engklek, gobak sodor, and rubber jumping [2]. The theory of experiential learning is defined as learning through experience. experiential learning requires cognitive processes to assist the learning process through stimulation of tools and in the form of training

The results of previous research on improving the working memory capacity of elementary grade students through the traditional congklak stick game obtained higher post-test scores in the experimental group than post-test results in the control group [33]. Other research conducted shows that children who play using traditional games can develop cooperation, help children to adjust, interact positively, control themselves, develop empathy for friends, obey rules, and respect others. In addition to the benefits obtained from traditional games, traditional games tend to take advantage of the surrounding environment without having to buy it so that when children play they can increase their creativity and imagination. Like the congklak stick game, you can do it using a stick or used skewers, for the *Sumbar Suru* game, you can use corn, soybeans, and tamarind seeds. Traditional games have noble values and moral messages such as the values of togetherness, honesty, responsibility, broad-mindedness, achievement, and obedience to rules [34].

Based on previous studies comparing problem-solving skills using PBL with nuanced ethnomathematics using traditional games. Obtaining an average score of problem solving abilities using the PBL model with ethnomathematics nuances using traditional games is better than the average problem solving ability gap using the expository model [35]. There are other opinions from the results of previous research related to increasing learning achievement and motivation. From the results of the research it can be concluded that due to the use of sports and traditional games they are instruments that are effectively applied in the post- pandemic period [36]. According to research results as a favorite learning tool, students prefer traditional games. In addition, traditional games need to be supported to support character education based on local wisdom [37].

5. CONCLUSION

The traditional games of *congklak lidi* and *sumbar suru* in this study had an effect on increasing the concentration of grade 3 elementary school students. From the results of the comparison of the pre-test and post-test values of the experimental groups 1 and 2 with the *congklak lidi* and *sumbar suru* games, it had an effect on student

concentration. From these results it means that there is no difference, both treatments have the same effect. Strengthened by a comparison of the pre-test and post-test values of the experimental group and the control group, it was found that the group that was given the treatment could increase concentration significantly.

The implication of this research is twofold. Firstly, government in education sector and teachers should include traditional games as alternative means to develop students' strength. This action will also help cultivating cultural value inherent in the local tradition in Indonesia. Secondly, researcher can support this adaptation by developing more research investigating the effectiveness of other traditional games. In the global context, this will allow more research collaboration with international partners that place interest in cultural modality as a source for enhancing education.

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Ethics Policy

This research was conducted by agreement between researchers and related parties.

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