THE EFFECTIVENESS OF TRADITIONAL GAME-BASED COMMUNICATION LEARNING ACTIVITY FOR COGNITIVE PROCESS DIMENSION LEARNING ACHIEVEMENT

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Abstract: This paper aims at describing the effectiveness of traditional game in improving student's cognitive process through communication activity. The study was a quasi-experiment. The population consisted of 184 fourth grade students in Group III in Jembrana district. The sample consiste of 27 of control class and experiment class. The data were collected from the cognitive process learning achievement which were collected with an essay test which consisted of 17 items. The hypothesis was tested by t-test inferential statistics. The result showed that there is a significant difference in the student's cognitive process between those who were taught with traditional game-based communication learning activity and those with the conventional teaching ($t_{obs.}$=7.50 > $t_{c.v}$=2.00). This means that there is a positive effect from traditional game-based communication learning activity on the student's cognitive process learning achievement.

Keywords: ***communication learning activivity, traditional game***

EFEKTIVITAS AKTIVITAS PEMBELAJARAN MENGOMUNIKASIKAN BERBASIS PERMAINAN TRADISIONAL TERHADAP HASIL BELAJAR DIMENSI PROSES KOGNITIF

Abstrak: Penelitian ini bertujuan menggambarkan keefektifan permainan tradisional dalam meningkatkan proses kognitif siswa melalui aktivitas mengomunikasikan. Jenis penelitian ini adalah eksperimen semu. Populasi penelitian ini adalah 184 siswa kelas IV di Gugus III Kecamatan Jembrana. Sampel penelitian ini yaitu 27 siswa kelompok kontrol dan 27 siswa kelompok eksperimen. Data yang dikumpulkan adalah data hasil belajar proses kognitif siswa menggunakan tes essay yang berjumlah 17 butir. Hipotesis diuji dengan statistik inferensial uji t. Hasil penelitian menunjukkan bahwa terdapat perbedaan yang signifikan hasil belajar proses kognitif siswa antara kelompok siswa dengan aktivitas pembelajaran mengomunikasikan berbasis permainan tradisional dan siswa yang dibelajarkan pembelajaran konvensional (t_{hitung}=7,50 > t_{tabel}=2,00). Hal ini berarti terdapat berpengaruh positif aktivitas pembelajaran mengomunikasikan berbasis permainan tradisionalterhadap hasil belajar proses kognitif siswa.

Kata Kunci: ***aktivitas pembelajaran mengomunikasikan, permainan tradisional***

INTRODUCTION

There are still many teachers who express the students' learning achivement using the old version of Bloom's taxonomy. Actually, the categorization has been revised, but many have not understood which domain has been revised. Anderson and Kratwohl in the Revised Bloom's Taxonomy (2010) state that there are two dimensions of learning achievement, i.e., knowledge and cognitive process dimensions. The cognitive process dimension is divided into six categories: (1) Remembering: retrieving knowledge from the long term memory; (2) Understanding : constructing meaning from the teaching material, including what is uttered, and drawn by the teacher; (3) Applying or using a procedure in a certain condition; ; (4) Analyzing : breaking material into its components and determining relations among the components and the relation between the components and the entire structure or the goal; (5) Evaluating : making a decision based on a criterion and / or standard; (6) Creating: integrating the parts to make a new and coherent entity or to make a new, coherent and original product.

The government actually has started an evaluation process by using the revised Bloom's taxonomy through the implementation of the 2013 Curriculum. The teaching according to the 2013 Curriculum uses the scientific approach with activities contained in it. Kurniasih (2014) explains that the 2013 Curriculum is a series of improvements made to the curriculum that was started in 2004 which was based on competence which was then continued to the 2006 Curriculum (School-Based Curriculum). The pattern used in the 2013 Curriculum is the teaching with the scientific approach. The teaching with the scientific approach requires the students to be active in every teaching activity. Wijayanti (11:2014) explains that the teaching with the scientific approach is a process of teaching that is designed in such a way in order the students actively construct concepts, laws or principles through the stages of observing (to identify or determine a problem), formulating a problem, proposing or formulating a hypothesis, collecting data with various techniques, analyzing the data, drawing a conclusion and communicating a concept, law, principle discovered. In line with this, Sutarto, Jaedun & Nuryadin (10:2017) explain that in the 2013 Curriculum the teaching process with the scientific approach is made to have five stages: observing, asking questions, collecting information, associating, and communicating.

The teaching in the scientific approach pays a special attention to the student's cognitive process. Cognition is an important aspect in the student's development that is related directly to the teaching process, and is very crucial in determining the student's success in school. In the child of the elementary school ages the mental activity is focused on the real objects or various events that he/she has ever experienced. This means that the elementary school child has got a thinking ability of cause and effect sequence. In understanding the nature that surrounding them, the children no longer rely on information coming from the five senses, since they have started to have an ability to differentiate what is seen from the reality.

A lesson at school has to be based on the competencies that the teacher want to achieve, the teaching activities have to be oriented toward the developing of children who are polite, responsible, honest, and having the characteristics of other noble characters. To avoid boring school learning activities, the teacher needs to be creative and inovative in order the students are interested in following the teaching process. One of the ways is by using an appropriate teaching The teaching process has to provide meaningful learning to make the students acquire an ability that is needed to solve a problem in such a way that they get an optimum learning achievement. The government and educational institutions expect that by having implemented the teaching with the scientific approach, the quality of teaching activities can increase so that the teaching becomes more meaningful for the students and can optimize their learning achievement and the process of achieving the knowledge.

Based on the result of observation made on 6th February, 2017, the teachers of elementary schools in Group III in Jembrana district have not run the teaching process according to what was stated by in Cagne, Briggs, dan Wager (9:1992) that teaching is a series of activities designed to make the students learn. This has the impact on a low students' learning achievement. Based on the result of observation and a document recording done for the fourth grade in the even semester in the academic year 2016/2017 it was found that the learning achievement of the fourth grade students of elementary schools in Group III in Jembrana district fell into a low category of achievement. This was seen from the mean score for the semester test which was still below the Criterion of Minimal Mastery Level, which can be seen in Table 1.

Some of the factors which caused the low students' learning achievement were as follows. *First*, the implementation of the scientific approach in the teaching in the classroom was still less than optimal, so that the teaching was still teacher centered. The most difficult stage taken by the teachers was the communicating stage. At this stage, the teachers had difficulties to make the students have the habit of reporting their findings during the process of observation. The students had not been in the habit of talking about and presenting scientifically what they had learned at that time. The difficulty in communicating in the children might be caused by various factors, for example, the internal factors such as being not brave and lack of self-confidence, while the external factor might be lack of opportunity given to the children to

Table 1. Mean Scores for Semester Test for the Fourth Grade Students in the Academic Year 2016/2017 in Elementry Schools in Group III in Jembrana District

Name of School	Mean in Subject Content				
	Indonesian	Pancasila and Civics Education	Science	Social Science	Art and Culture
SD N 1 Dauhwaru	63	64	56	49	55
SD N 2 Dauhwaru	68	67	69	60	60
SD N 3 Dauhwaru A	67	68	63	60	64
SD N 3 Dauhwaru B	66	66	63	62	63
SD N 4 Dauhwaru	67	66	63	60	60
SD N 5 Dauhwaru	66	66	61	58	61
SD N 6 Dauhwaru	60	64	61	62	62
SD Negeri Budeng	66	65	64	60	61
Minimal Mastery Level Criterion Score	70	75	65	60	62

interact and express their opinions (Lismawati, 11: 2015). In the activity of communicating, the teachers did not give the opportunities evenly to the students in expressing their opinions so that the communicating activity was dominated by the students who were really active from day to day, thus, the students' communnicating skill was not optimal. Based on the observation made by the writer, the mean in communicating activity fell into a low category.

Secondly, the teaching tended to be boring since there were not games and media to motivate the students to learn. The media used by the teachers were still limited, and the teachers' creativity in making teaching media was still minimal. Apart from the teaching media, the teachers also had inadequate knowledge about games that could motivate the students to learn. *Thirdly*, the teachers did not adequately involve the students in the teaching and learning process so that the teaching and learning activity in the classroom tended to be low. The activities in the teaching and learning process was dominated by the teacher. The teachers played too much role in every stage of the scientific teaching. The teachers had not been in the habit of letting the students discover by themselves the knowledge that they were learning in the teaching and learning process.

Related to this this fact, the teaching and learning process becomes a factor that affects the success or failure of an instruction. . Noviyanti and Setyaningtyas (2017) state that the teacher who manages the class well can educate the students effectively. The limited time allocated for teaching is not used up for conditioning the students, especially those who have problems with behaviors, so that the objectives of the lesson cannot be reached optimally. As a teacher, one has to be able to manage the classroom as well as possible in order the objectives of the lesson can be fully attained and the students' cognitive process become better. Cognitive process is the way one acquires knowledge. Cognitive processes then are the processes followed by the students actively in the process of constructing meanings. Constructive teaching (meaningful learning) is seen as an important goal of education. Constructive teaching calls for a teaching which does not only communicate factual knowledge, it also requires giving assessment questions which require the students not only to remember or recognize factual knowledge (Anderson, 9: 2010).

In relation to the problem above, it is important to make an improvement in teaching. The teaching should be presented in a more innovative way and able to improve the student's activity and motivation. In this case, to make the teaching more innovative and the students more active, traditional games can be expected to solve the problems at school.

According to Mulyani (10:2016), "A traditional game is a game we inherit from our ancestors that we are obliged to preserve since it contains local wisdom values". Through the traditional games, we can improve the quality of various aspects of the children's development. On the other hand, according to Kurniati ((2016: 02), "a traditional game is a game activity that grows and develops in a certain region, which is full with cultural values and the community's life values and is taught from one generation to the next generation." the traditional games that from every region are thousands in number all over Indonesia are a form of Indonesia's cultural assets (Astiiti, 2017).

The development of a new era makes people ignore the traditional games, while the contemporary games cannot develop the aspects of children's development well. According to Muliawan (2009:35) the great difference between the contemporary games and the traditional games lies in the fact that in the past, the traditional games did not only train the mind, feeling and emotion, but they also keep the balance between body movement and agility. This is far different from the modern games. The modern (contemporary) games are mostly designed to train children's physical ability. Actually, the full range of educative elements have to include 5 elements: motor (physical motion), affect (feeling), cognitive (intelligence), spiritual (character), and balance (perfectness of life) (Muliawan, 2009:35). The lack of familiarity of the children with the traditional games can have an effect on their low level of cooperativeness (Ekawati, 10: 2015). In an effort to optimize children's learning activity of communicating it is important to develop it through the use of an innovative teaching media. The learning activity of communicating will be more interesting if a media that supports the teaching is used, thus the children will be more motivated in learning. Moreover, the elementary school children are characterized as children who learn while playing.

The result of study that is relevant to this study is from the study done by Putri (2015) entitled "Penerapan Metode Demonstrasi melalui Permainan Traditional Juru Pencar dengan Media Visual untuk Meningkatkan Kemampuan Sosial Emosional Anak". This is supported also by a study done by Sri Wati (2013) who states that traditional games are useful as educational and teaching media. Apart from their function as a teaching media, it can also be used to preserve local cultures as stated by Tatjana (2011) in his study that *"*Traditional games are part of heritage and cultural tradition, but due to contemporary living conditions, passing them on to the younger generations ceases with time*"*. This statement confirms that traditional games are a legacy and cultural tradition, however, since the contemporary living condition, the young generation start to forget them as the time passes.

This study investigated how a teaching activity which is based on traditional games affects the students' cognitive process. The teachers can use the results of this study as references in enhancing a teaching activity into a more attractive, pleasant, and motivating one for the students in learning.

METHODS

This study used an experiment method. From the point of view of the focus of the problem and the relation between the variables, this study belonged to a quasi-experiment since in the process of study not all of the variables could be controlled well. In this study the variables tested were the effect of the traditional game-based learning activity of communicating in a group of students and that of conventional learning activity in the other group of students on the students' cognitive process learning achievement. This study was designed using Non-Equivalent Post-test Only Control Group Design. This study was conducted in SD Group III in Jembrana District with the total number of 175 students distributed into 7 schools: SD Negeri 1,SD Negeri 2,SD Negeri 3,SD Negeri 4, SD Negeri 5 and SD Negeri 6 Dauhwaru and SD Negeri Badung. The sample was determined by random sampling with the 7 class, size of 52 students, who were divided into two classes. The data collected in this study were the students' cognitive processes taken with an essay test that contains 19 items based on the basic competences under the theme of "My House" under the subthemes 2 and 3.

The test used in collecting the data had met the elements of basic competences based on the 2013 Curriculum. The test was also validated in terms of content validity by 2 experts in the field of measurement and the 2013 curriculum which was followed by empirical validation by a public test. The test of internal consistency of the 19 items yielded the results as follows: 17 items were valid and 2 items invalid. The analysis of discrimination power of the test items showed that 14 items had poor qualification and 3 fair qualification, An analysis of test item discrimination index showed that 3 test items had a fair qualification. The Analysis of the test level of difficulty showed that 3 test items met the criterion for an easy test, 12 met the criterion for a moderately difficult test, and 2 for a difficult test. The test of reliability analysis showed that the test has a high qualification (0.73). The data from the students' cognitive

learning achievement were taken by giving a posttest after the implementation the learning activity of communicating based on traditional games and the implementation of conventional teaching.

The hypothesis in this study was analyzed by using the t-test with polled variance. The ideal mean and the ideal standard deviation criteria can be seen in Table 2.

Table 2. Criteria of Ideal Mean and Ideal Standard Deviation

Real Score Range	Category
$50.95 \leq X \leq 67.9$	Very high
$39.65 \leq X < 50.95$	High
$28.35 \leq X < 39.65$	Medium
$17.05 \leq X < 28.35$	Low
$0.1 \leq X < 17.05$	Very low

RESULTS AND DISCUSSION

Results

The data in this study consisted of the posttest scores for the students' cognitive process in the team: My House in subtthemes 2 and 3 for the sixth grade students, as the effect of the treatment of traditional game-based learning activity of communicating in SDN 6 Dauhwaru as the experiment group and SDN 4 Dauhwaru as the control group. The following is the description of data in cognitive process in the two groups. This study found that in the experiment group the result in the student cognitive process, after being given the treatment of learning activity of communicating based on traditional game can be seen in Table 4 as follows.

Table. 3 Descriptive Analysis Result

No	Category	Percentage of achievement	
		Experiment	Control
1	Very high	84%	33.33%
2	High	16%	14.81%
3	Medium	0%	14.81%
4	Low	0%	29.6%
5	Very Low	0%	7.40%

Based on the percentage it can be concluded that in the experiment group the data of the students' learning achievement tended to obtain scores in high category and very high category, while in the control group, the data distribution of learning achievement showed scores in very low to very high category. In a more detailed way, the posttest result of 25 students in the experiment group and 27 students in the control group can be seen in table 2 above in the section Method.

Based on a five scale criterion and according to data analysis mean score in cognitive process in experiment group given treatment with learning activity of communicating based on traditional game was 60.67 (falling into very high category), while the mean in control group taught with conventional teaching was 35.88 (falling into medium category). This proves that the mean score for cognitive process mastery in the experiment group was higher than that in the control group. The data of the average of standard deviation for the posttest for the two group are presented in Table 3.

Table 4. Means and Standard Deviation of Data of the Result of Posttest for Experiment Group and Control Group

Variable	Experiment Group		Control Group	
Post-test	Mean	Standard Deviation	Mean	Standard Deviation
	60.67	5.27	35.88	1.57

Before doing the hypothsis testing by using T-Test, first requisite tests which consisted of normality test and variance homogenity test were submitted.

The data normality test was done for the posttest data on cognitive process mastery of the experiment group and the control group based on the data analysis done, the result of the normality test of the distribution of data for the posttest in cognitive process mastery for experiment group and control group are presented in Table 4.

Table 5. Recap of the Result of Normality Test of the Distribution of Data of Cognitive Process Mastery

No	Data Group	Total Sample	x^2obs.	x^2c.v
1.	*Experiment Post-test*	25	4.689	7.815
2.	*Control Post-test*	27	7.426	7.815

This shows that $x^2_{obs.}$ for cognitive process mastery was smaller than $x^2_{c.v.}$ ($x^2_{obs.} < x^2_{c.v.}$), so

that the data on cognitive process mastery of the experiment group had a normal distribution. This shows that $x^2_{obs.}$ for cognitive process mastery was smaller than $x^2_{c.v.}$ ($x^2_{obs.} < x^2_{c.v.}$), so that the data of the scores of cognitive process mastery of the control group had a normal distribution.

Homogeneity test was done to the paired variances between the experiment group and the control group. The test used was F-test with the criterion of homogeneous data of $F^2_{obs.} < F^2_{c.v.}$ The following is the presentation of the recap of the result of variance homogeneity test between the experiemnt group and the control group in Table 5.

Table 6. Recap of Results of Variance Homogeneity Test with F-Test.

Sample	$F_{obs.}$	$F_{c.v.}$	Conclusion
Experiment Group	0.11	1.94	$F_{obs.} < F_{c.v.}$
Control Group			

Based on the table above, it can be concluded that $F^2_{obs.} < F^2_{c.v.}$, thus, H_0 is accepted, which means that the variance of the data of the cognitive process mastery of the experiment group, and that of the control group is homogeneous.

The research hypothesis tested was there is a difference in the cognitive process mastery between the students who were taught in learning activity of communicating based on traditional games and those taught in a conventional teaching. To test the hypothesis that was proposed the noncorrelational t-test or independent t-test was used. Table 6 shows that the variance is homogeneous and the number of students in each class is the same, so that this noncorrelated t-test was used with the formula of polled variance. The recap of the result of the noncorrelated t-test is presented in Table 6.

Hence, it can be interpreted that there is a significant difference in the students' cognitive process between the students who were taught using the learning activity of communicating based on the traditional games in the scientific approach and those who were taught using conventional teaching model for the sixth grade students in elementary schools in Group III, Jembrana District in the school year 2016/2017 in Jembrana district in the academic year 2016/2017.

Discussion

Based on the hypothesis testing it was found that $t_{obs.}$ = 7.50 and the $t_{c.v}$ with discrimination index =(n1+n2)-2 = 49 at the 5% level of significance, α= 0.05, is 2.00. This means that $t_{obs.}$ is greater than $t_{c.v}$($t_{obs.} > t_{c.v.}$), thus H_0 is rejected and $H_{1\ is}$ accepted. Therefore, it can be interpreted that there is a significant effect on cognitive process in the group of students who learned by using traditional game-based learning activity of communicating based on traditional game in the scientific approach and in the group of students who did not learn by using traditional game-based learning activity in the scientific approach.

This study showed that an innovative teaching can improve student's activity, motivation, and cognitive process. The cognitive processes are the ways an individual uses in acquiring knowledge. They are used to construct meanings. Constructive teaching (meaningful learning) is seen as an important educational goal. Constructive teaching requires more than communicating factual knowledge. It requires asking questions to assess the students, thus the students do not only remember or recognize factual knowledge (Anderson, 98: 2010).

This study has proven that the traditional game-based learning activity of communicating is effective in improving student's activity and motivation in the classroom in following the lesson. A traditional game-based learning activity of communicating is very suitable with the character of the elementary school students in general, since at this stage the elementary school age children are very fond of playing no wonder that the children are very noisy even when the teacher is teaching. Some of them even disturb their friends. This finding is supported by the study conducted by Noviyanti and Setyaningtyas (9 : 2017) who state that less conducive environment will hinder the

Table 7. Recap of the Data of Hypothesis Test Results

Group	N	df.	$t_{obs.}$	$T_{c.v.}$	Conclusion
Experiment	25	49	7.50	2.00	$t_{obs.} > t_{c.v.}$ Ha is accepted
Control Group	27				

development of student's discipline (misbehavior). The child's negative behavior will not only distrub their friends in the classroom, but also lower down other students' attention to follow the lesson. Disturbing other friends will not only have a physical impact, but it will also have a psychological impact on the children. Thus, in this case traditional games are very effective to be implemented in teaching.

Traditional games make the classroom condition lively. The teaching environment that is conducive will be able to improve the students' learning motivation. Taro (11:1999) explains that traditional games play a role in the children's world. Traditional games are cultural activities that function as the media to educate the sense of solidarity (democracy, sensitiveness to other's feeling, respect for differences, and shared agreement, cohesiveness, and mutual help), heroism (struggling to reach one's dream, meeting the desire for independence, responsible, defending one's right, never giving up), physical endurance, (regular and measurable movement to improve body organs functions). The development of personality (honest, sportive, responsible, self control, not prioritizing one's personal interest, tolerant and loving) disciplined (conforming to regulations, norms and values), and pride for the *bhineka tunggal ika* culture (unity and diversity). In this case, traditional games, in addition to being used as teaching media, they can also be made into character education. Parallel to this, the same was also stated by Haerani that traditional games which are also Indonesia's national culture has been proven capable of developing positive character in the children.

By inserting traditional games in the teaching process it can help preserve cultural legacy for the next generation, since as it has already been known, in today's age with the progress in technology which becomes increasingly advanced and sophisticated, not limited to a certain age, children of today have started to follow the development of the age, for example by using gadgets that have become so numerous that they have an effect on the local traditional games. In this case, in addition to being useful for character education, the insertion of traditional games into the teaching process is very effective as the means to preserve traditional games of the archipelago.

Teaching with traditional games is also capable of improving the activity of communicating in the students. The students who were initially passive in learning and tend to be afraid to express their opinions, after being given traditional games in the activity of communicating become very enthusiastic in following the lesson and have started to be active in learning. Joyful learning is presented in the teaching activities which include *kiat-kiat*, directions, strategies and all learning processes which can sharpen memories, and make learning as a joyful, useful, and meaningful process. Hence, the students understand the material given better and are able to apply it in the daily life. This agrees with Fatoni's opinion (Fatoni, 2015) that shows that students' understanding of the length measurement can be stimulated by using the traditional game of *batok kelapa* as the context. This is proven by the traditional games such as the games of box office, dragon, Pancasila the Five Principles, *ngengkebang batu*, and *nyen durine* can improve the student's activity in following the lesson.

In the teaching which used the game of box office, the activity of communicating becomes very effective and optimal since the game of box office in the activity of teaching can make the classroom atmosphere become joyful and the students become more focused. In the game of dragon like in the game of box office, the activity of communicating becomes very effective and optimal since the game of box office in the teaching activity is able to make the classroom atmosphere more joyful and the students become more focused, this game is also able to make the students more focused. In the game of dragon, like in the game of post office box, this game is also able to make the students more active and in the activity of communicating and they become more brave in communicating or expressing their opinions. This is parallel with Koswara's opinion (Koswara, 2014) that states that teaching will be more meaningful and permanent if the students are given the chance to be active for developing their own knowledge, to develop knowledge by themselves to get a change into a completely new behavior as the result of experience in interacting with the environment. A joyful and meaningful learning is capable of influencing the students' cognitive process so that the fourth grade students have

already been able to answer c1 and c6 problems, i.e., remembering, understanding, applying, analyzing, evaluating, and creating in the revised Bloom's cognitive process taxonomy.

In this study the traditional game of *Pancasila Lima Dasar* was used. By using the game of *Pancasila Lima Dasar* in the teaching process, in addition to making teaching more joyful, this game can also educate nationalism and this is important today since many people have forgotten the basic principles of their country, so that this game is very effective to be applied in teaching.

This study also used 2 Balinese traditional Balinese games, namely *ngengkebang batu* and *nyen durine*. By incorporating the games, in addition to their function as media in education, they also introduce traditional games which come from the culture itself, since most of the students do not know games which come from their own culture. The game of *ngengkebang batu* and *nyen durine* became the learning activity of communicating became joyful.

In addition to make learning more joyful, the traditional games used in this study also make the students more active and more enthusiastic in following the lesson. The traditional games make learning more meaningful, so that the learning the students get from the teacher is retained longer by the students and will have a positive impact on the students' activity and cognitive process.

This study was a follow-up from Sri Wati (2013) entitled "*Pengaruh Model Pembelajaran TPS Berbantuan Media Permainan Tradisional Bali terhadap Pemahaman Konsep IPA Siswa Kelas IV SD Gugus IV Sawan*". The results of the study showed that there was a significant difference in understanding science concept understanding between the students who learned from the teaching that used traditional Balinese game media-based teaching model and those who learned from the conventional teaching model. This study is also supported by a study conducted by Untari (2013) entitled "*Keefektifan Pendekatan Pembelajaran Pendidikan Matematika Realistik Indonesia (PMRI) Berbantu Permainan Tradisional Dhakon Terhadap Kemampuan Berhitung Perkalian Siswa Kelas II.*" The study concluded that there is a difference in the mean in the ability to multiply, that is, the ability to multiply in the experiment group is better than that in the control group. The study conducted by Tatjana (2011) entitled "Traditional Games and Pupils' Violent Behaviour in Elementary Education." The result states that The results of this research indicate that traditional games could be a quality and efficient model for preventing violent behavior among pupils in elementary education. It means that this study shows that traditional game can become an efficient model to prevent violence among the students in the elementary school students.

Some studies above have proven that traditional game can increase the students' cognitive process. In addition to its use as media in teaching, traditional games can also be used as media for character education to achieve the goal of education, as stated by Widiana (2017) that the goal of education has to be achieved, one of the ways is through the implementation of character education curriculum.

Based on the cognitive process analysis of the *post-test* given in the form of an essay test with 17 items with the criteria of c1-c6 , it was found that most of the students could only answer up to c2 (understanding). Based on this finding, it is suggested to the teachers to start teaching the students with problems within the c1- c6 scope so that their cognitive process becomes more optimally developed.

The activity of communicating is one of the activities in the scientific approach and this activity is an important one, because by communicating the teacher can find out which students are able to understand the extent to which the students are able to understand the teaching material. In this study, traditional games can be used as media to help improve the students' activities of communicating, the students had not felt afraid to report the result of a discussion or to express their opinions any longer. In this case, there was an increase in the role of the students in the teaching process and it had conformed to the scientific approach. The teaching that uses the scientific approach is a teaching that uses science approach and inquiry, in which the students have a direct role both individually and collectively in the group to explore concepts and principles during the course of learning activity, while the role of the teacher is to direct the students' learning process and to correct students' mistakes in principles and concepts (Marjan, 11: 2014).

This study found out that the learning activity of communicating based on traditional games has a positive effect on the cognitive process of the fourth grade students in the even semester in SD's of Group III of Jembrana district. This study also showed that the learning activity of communicating based on traditional games has a positive effect on the tendency of most of the students' high scores because of some factors such as the use of an innovative and joyful teaching, the conducive learning condition to the elementary school children in general, and the increasingly more directed speaking ability

CONCLUSION

Based on the result of the calculation of the t-test, it was obtained that tobs. = 7.50. While tc.v. at df=(n1+n2)-2 = 49 and the 5% level of significance ,$\alpha = 0.05$ was 2.00. This means that tobs. was greater than tc.v. $_1$ ($t_{obs.} > t_{c.v.}$), thus, H_0 was rejected and H_1 was accetpted. This means that there is a difference between the group of students who learned with the learning activity of communicating based on traditional games in the scientific approach and those who learned with conventional teaching model in the fourth grade in the even semester in the academic year 2016/2017 in SD`s in Group III in Jembrana district. There is a difference in the students' learning achievement which shows that the implementation of the scienfic approach in the learning activity of communicating based on traditional games has a positive effect on the learning achievement of the fourth grade students of elementary school in the even semester in the academic year 2016/2017 in SD's in Group III in Jembrana district.

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