

Influence of the Science Game "Sing and Floating" on Classification Ability of Children 5-6 Years Old at Kemala Bhayangkari Kindergarten School of Wangon

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Abstract—The purpose of this research is known influence of the science game about sink and floating toward classification ability children at age 5-6 years old at Kemala Bhayangkari kindergarten School of Wangon. This research is quasi experiment research, with kind of research is nonequivalent control group design. The population in this research is 50 children, the sample consisting of 36 children, consist of from 18 children like as experiment group and 18 children like as control group. The experiment group was given treatment with science game about sink and floating, while in control group the activities be held likes usually. The accumulation data with observation thread.

Which data in the result then to analysis and to test by t-test of statistic to see different between experiment group with control group. Based on the result of the paired sample t-test in experiment group, obtain p value is $0,000 < 0,05$. The difference statistically significant, $t \text{ count} -22,039 \leq t \text{ table } 1,739$. While in independent t-test obtained the value of t count $-13,567 \leq t \text{ table } 1,690$. So, based on the analysis the result is indicated there are influence from science game about sink and floating toward classification ability children at the age 5-6 years old.

Keywords: *Science game about sink and float, classification ability.*

I. INTRODUCTION

Children is gift from Allah with fantastic potential, especially at the age of 0-6 years. Growth and development his brain reached 50% from the growth of a whole, so known as a golden age. In this period the provision of stimulation highly recommended, the aim is to developed the potential of children (Suyanto, 2005: 3-4).

Children is the unique personal, so the process of learning is also unique. Provided the stimulation must be adjusted with characteristic of children. The favorite activities of children is playing, because give a sense of happy, freedom just be yourself, free to chose a game, should be able to play the role of having the character of symbolic, children will be active motion, both physically and psychological to obtain self satisfaction (Hughes, 2010: 4-5). One of the activity of playing that can activate senses children is a science game. Science for the children is everything that found, amazing and interesting,

and gave stimulation of children to investigate (Nugraha, 2005: 14).

On this science process, children will be active to know the truth of the experiment. Children will learn by sensory to observe, classifying, estimate, and calculating (Yulianti, 2010: 42-43). Classification is skill in the process of science, passed in a conference the experts science on *American Association for the Advance of Science* (Nugraha, 2005: 126).

Classification activities is expected can give positive impact to children, such as have proficiency in choose and sort out some things are best for themselves. Sandra Crosser (2005) revealed that children age 5 years old can classify the same object. Characteristic classification on children 5-6 year is can classified the objects based on a particular category. Supporting that Saramadan Clements (2009: 88-89) explain the topic of classification for kindergarten children is

“classification: object can be grouped based on attributes and quantified”.

Suyanto (2005: 159) explain about the topic of science what was interesting for children, one of them is science game about sink and floating. When the children do that experiment, children will be understand the object which sink and floating, and then classify it to the same category.

Based on an examination in KemalaBhayangkari kindergarten of wangon, the activity still focused to worksheets with classical method. So, the sensory of the child less stimulated, less got experience of classification. Based on this researchers provides treatment of science game about sink and floating to know the influence science game about sink and floating towards classification ability children 5-6 years old in KemalaBhayangkari Kindergarten of Wangon.

II. METHODS

Type of Research

The research is quasi experiment, on a quasi experiment not all experiment condition could be functions fully to control other variables that affects (Sugiyono, 2013: 116). Experimental methods chosen to know the influence of science game about sink and floating towards classification ability children 5-6 years old.

The design used *pre-test post-test nonequivalent control group design*, consist are two groups there are experiments group and control group. In the experimen group was given treatment with science game about sink and floating, but in the control group still using konvensional method. Design of the the research as follows.

Table 1. Design of the research

Group	Pretest	Treatment	Posttest
Control	O ₁	-	O ₂
Experiment	O ₁	X	O ₂

Keterangan:

O₁ = test of classification ability (pretest)

O₂ = test of classification ability (posttest)

X = science game about sink and floating

A stage in this study is: 1) manufacture and trial instruments, 2) do Prasurvey and permits to the kindergarten, 3) Coordinate with teachers and giving briefing on the science game about sink and floating, 4) do pretest on each research group, 5) apply the treatment science game about sink and

floating on experiment class, 6) do posttest on each research group, and 7) do data analysis.

Research Subject

Population in this research is all children 5-6 years old in KemalaBhayangkari Kindergarten of Wangon, consist of 50 children. The sample consisting of 36 children, divided into two groups, consist of from 18 children like as experiment group and 18 children like as control group.

Technique and instrument of Data Collection

Observation techniques used in this research, to observe influence science game about sink and floating towards classification ability. Observation guidelines used to collect data classification ability. The assessment do with notes classification ability in sheet of observation. Then analyzed the form of score 0 and 1. Score “0” used when the children not able to classification, and score “1” when the children be able to classification (Sugiyono, 2012: 134). Next total a score will be convert in the scala of 100 to make easier for the calculation of data analysis. An indicator that used in this research as follows.

Table 2. Indicator in this research

Indicator	Assesment item
Classify object based on one category	1. Classify object sink
	2. Classify object floating
	3. Classify object big
	4. Classify object small
Classify object based on two category	5. Classify object sink a big
	6. Classify object sink a small
	7. Classify object floating a big
	8. Classify object floating a small

Statistic Analyses

The testing of hypotheses use parametric statistics. To know a differences in the treatment of two group, used t-test namely paired sample t-test and independent sample t-test. The data has been collected, then the calculated using *Microsoft office excel 2007*, and tested with *SPSS 16. for windows*.

III. RESULT

The observation resut of classification ability to summarize about output data with pretest and posttest, either of experiment group or control group. At or to pretest group, the activity going on usually. Whereas the posttestgroup given treatment with

science game about sink and floating. The embrace discription about pretest data and posttest data ability classified like this.

Table 3.Pretest & Posttest Data

	Pretest		Posttest	
	KE	KK	KE	KK
N Valid	18	18	18	18
Missing	-	-	-	-
Mean	38,27	37,4	93,61	42,9
Median	37,35	33,2	99,6	41,5
Minimum	16,6	24,9	83	33,2
Maximum	66,4	58,1	99,6	66,4
Sum	688,9	672	1685	772

Keterangan:

- KE = Experiment group
- KK = Kontrol group

To see from result of pretest and postest like that, trully before to given treatment, the start score ability clssificated group and control group is relative same, whereas after to giving treatment that's is game of science about sink and float occurred increased significant score toward introduction ability classificate on the eksperiment group. The control groub also increasing, but is not to significant because not to given anything treatment.

Furthermore, this data to analysis for examine hypothesis by *paired sample t-test* and *independent sample t-test*, ensuing be result analysis data of classified ability.

Table 4.Output test of paired sample *t-test*classification experiment group

Paired Differences					t	df	Sig. 2-tailed
Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
			Lower	Upper			
-5.533	10.652	2.510	60.630	50.036	-22.039	17	.000

So heavily relies result of *paired sample t-test*, by using degree level 0,05 can be aconclusion that's Ho is to push away, because the p score is 0,00 that's mean is more litle than α , or $p < 0,05$. The different is significant by statistical can be to see at the t score $-22,039 \leq t$ table 1,739 until can be inferential that's different between pretest data classification ability at the eksperiment group. Whereas the result experiment of paired sample *t-test* pretest and posttest classification ability at the control group that like this.

Table 5.Output test of paired sample *t-test*classification control group

Paired Differences					t	df	Sig. 2-tailed
Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
			Lower	Upper			
-5.533	11.025	2.598	11.016	-.050	-2.129	17	.048

So heavily relies result of *paired sample t-test*, by using degree level 0,05 can be aconclusion that's Ho is to push away, because the p score is 0,048 that's mean is more litle than α , or $p < 0,05$. The different is significant by statistical can be to see at the t score $-2,129 \leq t$ table 1,739 until can be inferential that's different between pretest data classification ability at the control group. Whereas the result of *independent sample t-test* classification ability at the control group that like this.

Table 6. Output independent sample t-test

Independent Samples T-Test									
	Levene's Test for Equality of Variances		t-test for Equality of Means						
	F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
								Lower	Upper
Klasifikasi variasi asumsi Equal variances assumed	6.83	.013	-13.567	34	.000	-55.333	4.078	-63.621	-47.044
			-13.567	34	.000	-55.333	4.078	-63.621	-47.044
Klasifikasi variasi asumsi not Equal variances not assumed			-13.567	34	.000	-55.333	4.078	-63.621	-47.044
			-13.567	34	.000	-55.333	4.078	-63.621	-47.044

So heavily relies result of *independent sample t-test*, by using degree level 0,05 can be a conclusion that's H_0 is to push away, because the p score is 0,000 that's mean is more little than α , or $p < 0,005$. The different is significant by statistical can be to see at the t score $-13.567 \leq t \text{ table } 1,690$ so can be inferential that's there are the significant influence from science game about sink and floating toward classification ability.

Table 7. Recapitulation of examine result t-test and independent t-test classification

	Kelompok Kontrol	Kelompok Experiment
Mean <i>pretest</i>	37,4	38,27
Mean <i>posttest</i>	42,9	93,61
t <i>pairedt-test</i>	-2,129	-22,039
t <i>independent t-test</i>	-13.567	

the strenght from recapitulation table on top , t account from examine paired t-test control group is $-2,219 \leq t \text{ table } 1,739$, at the eksperiment group can be conclusion value of t account $-13,567 \leq t \text{ table } 1,690$. Based on the analysis the result is indicated there are influence from science game about sink and floating toward classification ability children at the age 5-6 years old.

IV. DISCUSSION

The classification ability is the most must be introduced to children. Sandra Crosser (2005) revealed that children age 5 years old can classify the same object. Classification activities is expected can give positive impact to children, such as have proficiency in choose and sort out some things are best for themselves. Reys (1998: 90-94) revealed that classification is capability a very fundametal to study the real world, classification can help the children to identified some objects.

Liu (2007:6) explained that the activity of collecting and classify can be conducted by using object that in in around the child. Supporting that Jackman (2012:151) revealed that collecting and classify the object based on the common characteristics such as size, shape, and colour. Next Seefeldt, (2008: 392-401) explain that classify is grouping the same object or having the equality, example in science games about sink and floating is the children classify object based on the same characteristic of which object sink and object floating.

Next, there are research result by Tri Widyakto (2014) revealed that the science game influence to cognitive development children age 5-6 years. That research result becomes the basis for this research, with a focus research is science game to cognitive development. Cognitive development that measured in this research in the classification ability.

V. CONCLUSION

Based on observation and testing data using SPSS obtained t count *pairedt-test* control group $-2,129 \leq t \text{ table } 1,739$, while in experiment group, obtain p value is $0,000 < 0,05$. The difference statistically significant, t count $-22,039 \leq t \text{ table } 1,739$. While in independent t-test obtained the value of t count $-13,567 \leq t \text{ table } 1,690$. Based on the analysis the result is indicated there are influence from science game about sink and floating toward classification ability children at the age 5-6 years old.

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