



The Influence of Contextual Teaching and Learning on Performance Study Mathematics

Arip Febrianto^{1*}, Trio Pika Yuliana Sari¹

¹ PGRI University of Yogyakarta, Indonesia

* Corresponding author: arip@upy.ac.id

ABSTRACT

One of challenge in Learning Mathematics that is performance Study student part big Still classified as low . Research Objectives This For know How influence from the Contextual Teaching and Learning (CTL) learning model in increase performance Study mathematics student class IV SDN 1 Kadipiro . The research used experiment with approach quantitative , population from study This consists of from all over student class IV SDN 1 Kadipiro . Number population Class IV of SDN 1 Kadipiro consisting of from IV A As class experiment totaling 28 students and class IV B as control class with total 26 students . So the total number sample used in study This totaling 54 people. The results of the study show that class experiments using the CTL learning model produce mark or more achievements Good than control class . Based on the results of the T-Test test were obtained mark asymp sig. of 0.000, which indicates that variable independent own significant influence to dependent variable . Therefore that , based on condition taking decision , can withdrawn conclusion that learning model contextual own significant influence to dependent variable .

Keywords: *Contextual Teaching and Learning, Achievement Study , Mathematics*

1. INTRODUCTION

The National Education Goals have set For to make smart life nation for building the whole Indonesian people and Indonesian society as a whole overall . One of the effort For increase quality learning at school is with improve activity processes Study teaching . Various draft in implementation of the learning process teach has emerge and develop rapid along with progress over time. Education is business For humanize human , or business For help humans to be able to realize self in accordance with essence his humanity [3].

Learning is a mental process that takes place in order to form behavior individual . Learning process can done Good both mentally and physically physical . Activity psychological involving tasks cognitive like analysis , understanding , listening , and others [5]. A teacher need capable to absorb and create atmosphere a lively and enjoyable class , while activity physique related with application or often called with practice . This will useful For reduce boredom participant educate and improve motivation they during the education process with utilise various models and means learning.

One of discipline knowledge which is certainly very necessary various teaching models and media is

Mathematics . Mathematics is one of the most vital areas of study for mastered by students . However in in practice , still Lots students who feel worried to arithmetic Because view that mathematics is field challenging , boring , and scary study . One of the cause is Because mathematics often have characteristics that are not real or abstract [1]. Where should it be student get experience as well as knowledge new , but Because the boredom that is felt to lesson mathematics , things This result in they No Can to achieve what should be they acquire . In other words, skills participant educate tend No develop or still stagnant . If the situation This Keep going continue , will There is impact negative to motivation students , and of course objective teaching mathematics No will achieved as expected [2] .

If method lecture No result in student Study with passive way, then researcher interested For implementing learning models *Contextual Teaching and Learning* (CTL). In learning contextual , there is seven element main supporting effective learning, namely constructivism, discovery, questions, community authentic learning , modeling , reflection , and assessment

The results of the pre-research, which was carried out through interview with the fourth grade teacher at SD Negeri 1 Kadipiro, Mr. Ahmad Habibbur Rahman S.Pd, showing that student face a number of challenge during lesson mathematics in grade IV. One of the challenge the is performance Study students, some of whom big still relatively low. With consider existing problems, researchers want to offering innovative ideas, especially in lesson mathematics, which will allow educator own chance to provide experience new to student they through more learning models interesting, which can produce interesting learning. Namely by implementing the Contextual Teaching and Learning learning model.

2. LITERATURE REVIEW

2.1. Contextual Teaching and Learning (CTL)

Understanding Contextual Teaching and *Contextual Learning Teaching and Learning (CTL)* is draft learning that can help teachers relate between the material taught with real world situations participant educate and encourage participant educate make connection between the knowledge they have have with its application in the life theyas one of the member family and society. *Contextual Teaching and Learning (CTL)* Also own a number of characteristics Where For the process, learning about a lesson must associated with material lesson other so that participant educate get A condition life that real. Besides That, condition And problem Which real tend seldom represented by one field science. So from That they will see How knowledge And skills relate with life they Good moment This or timefront. This is also intended for students can more know How situation life real, identify and solve problem with effective, and capable make decision Which wise And capable think creative (Nasution.S 2000)

Learning contextual is learning active, Where learning This centered to activity participant educate. Study is activity implementation knowledge, not just memorize. In in process learning contextual This Also naturally capable involving participation from each participant educate. Principle each other involving This will give freedom to participant educate For capable interact in a way direct with Teacher, participant educate other (in form cooperation) as well as environment around. Second principle difference Where principle This realize that every participant educate Certain own talent And his ability each so that No Can treated as if something Which own characteristic homogeneous. Furthermore For the third principle that is principle management self Where *Contextual Teaching and Learning (CTL)*. capable help participant educate For reach performance Study as well as get skills Work And capable develop character with method to hook activity school with

knowledge or experience Alone. So that task Teacher here is support every participant educate For can apply all potential himself (Dimiyati & Mudjiono. 2006)

2.2. Characteristics Contextual Teaching and Learning

- 2.2.1. *Work The same*
- 2.2.2. *Each other support*
- 2.2.3. *Pleasant, No boring*
- 2.2.4. *Study with enthusiastic*
- 2.2.5. *Learning integrated*
- 2.2.6. *Student active*
- 2.2.7. *Use various source*
- 2.2.8. *Sharing with Friend*
- 2.2.9. *Student critical Teacher creative*

2.3. General Components of Contextual Teaching and Learning

- 2.3.1. *Constructivism (Constructivism)*
- 2.3.2. *Invention (Inquiry)*
- 2.3.3. *Ask (Questioning)*
- 2.3.4. *Public Study (Learning Community)*
- 2.3.5. *Modeling (Modeling)*
- 2.3.6. *Reflection (Reflection)*
- 2.3.7. *Evaluation Which Actually (Authentic Asssment)*

2.4. Advantages And Lack Contextual Teaching and Learning(CTL)

Model learning *Contextual Teaching and Learning (CTL)* This own excess And lack, excessfrom model learning This among them as following:

- 2.4.1. Learning will become more meaningful And real, Where participant educate sued For can conclude connection between experience Study at school with experience in the life real.
- 2.4.2. Learning more effective and also can increase strengthening draft to participant educate Because with model learning This have Wrong One component that is *constructivism* Where every participant educate invited For can find Alone his knowledge, and every participant educate expected so that Study through experience No just memorize.
- 2.4.3. Contextual is learning Which emphasize activity participant educate in a way comprehensive, good in a way physique or mentally
- 2.4.4. Class in learning contextual No as tempt to obtain inromation, will but Also as place For test results findings they in the field.
- 2.4.5. Material learning Also can found directby each participant educate, No giving from Teacher.
- 2.4.6. Whereas For lack from model learning *Contextual Teaching and Learning (CTL)* This is:
- 2.4.7. Required time Which Enough long during process with model learning This in progress
- 2.4.8. If Teacher No can control class, so create situation class Which Possible not enough conducive

2.5. Objectives Model Learning *Contextual Teaching and Learning (CTL)*

2.5.1. Learning Model *Contextual Teaching and Learning (CTL)* this own objective For capable increase motivation each participant educate For can make it easier in understand material the lesson that later will studied naturally Also with to hook material the with context life they daily so that participant educate own knowledge or skills Which can used For solve from every problem to problem other .

2.5.2. Learning model *Contextual Teaching and Learning (CTL)* also has objective so that during the process learning This in progress participant educate expected No only just memorize but participant educate must capable understand every material .

2.5.3. Model learning This Also emphasize on improvement interest experience every participant educate

2.5.4. Learning model *Contextual Teaching and Learning (CTL)* this aiming For educate every participant educate For capable think critical And skilled in processing knowledge so that participant educate can find and create something useful for himself Alone And Also person other.

2.5.5. Learning model *Contextual Teaching and Learning (CTL)* also has objective For invite participant educate on a activity Which capable to hook material Which studied it into the life a day - a day they , And Then participant educate in a way individual can transfer information-information complex and participants educate can make information That as learning Which meaningful .

2.6. Learning

Learning is a connection Which well organized have elements - element humane , material, facility , equipment And order method Which will each other continuous For reach A objective learning . Man Which involved in the system learning covering student , Teacher, And power others , for example power laboratory . Materials include books , boards writing , chalk , photography , slides, film and audio. Facility And equipment consists of from room class , audio visual equipment and computers. Procedures covering timetable And method delivery information , practice , Study And and so on . Model learning can interpreted as framework conceptual Which describe order method Which systematic inorganize experience Study For reach A objective lessons (Sudrajat , A 2008).

2.7. Learning Elementary School Mathematics

Mathematics become Wrong One eye lesson Which There is in level education school elementary school intermediate First , and school intermediate above . Mathematics is also wrong One eye lesson

Which have connection Which Enough close with life daily .

Based on what was stated by Irawan, Daeka (2015:7) said that mathematics is studies magnitude , structure , room And change . All expert to put forward that mathematics is knowledge which can look for various pattern , formulate formula new , and build truth through method rigid deduction from definitions or continuous meanings . So less appropriate If mathematics only just interpreted as knowledge Study countcount just but more to pattern reasoning And logic .

Offirston (Daughter, 2017:11) Also say that mathematics Can become tool as Wrong One method For develop method pattern think , then from that , mathematics This very very required in solve A problem in life daily , even more from That knowledge mathematics Also can become Wrong One tool For support progress knowledge knowledge And technology .

Based on description Which has explained on , so can withdrawn A conclusion that learning mathematics be one of eye an important lesson For delivered to student Good That from level school base until school intermediate on . Given from startschool base because of can made into as supplies knowledge counting as well as ability For can process the data later Also can beneficial for life daily or For solve A problem And For to communicate idea or idea .

General purpose learning Mathematics in elementary school is so that student become more skilled especially when use knowledge mathematics . Following is objective learning mathematics SD:

2.7.1. Understand draft mathematics , explained connection between every draft , And implementation draft algorithm

2.7.2. Use reasoning on pattern there is characteristic , do manipulation mathematics in generalization , compiling proof or explain idea And statement mathematics .

2.7.3. Capable solve A problem Which covering ability understand problem , designing mathematical models , as well as capable complete the model and able to describe the solution that has been succeed obtained .

2.7.4. Describe idea into the form A symbol , table or in form diagram or even media other For can explain condition or A problem .

2.7.5. Own attitude value to application knowledge mathematics in the life daily .

2.8. Achievement Study

2.8.1. Definition Performance Study

About performance Study a expert to argue that " Achievement Study is results which is obtained

participant educate in the form of the impressions that become change in self every individual as results from activity a process learning . Achievement Study in a way special is results after participant educate follow lesson in the class . In The Big Indonesian Dictionary (KKBI) states that performance Study is mastery knowledge or skills Which developed lesson , usually intended with mark test or number the value given by the teacher. From several opinion on can concluded that performance Study is results which has achieved by participant educate or form real Which owned by every individual after experience process Study specifically learning Mathematics in time certain Which stated with number according to with results Which Already determined .

Term performance Study consists of from two say that is , achievement and learning . The term achievement in the dictionary popular scientific interpreted as results Which achieved . According to Noehi Nasution, Study in meaning wide can interpreted as a process that will later will cause change a behavior in demand as results from formation response First , with condition that change or the emergence behavior in demand new That No due to existence change temporary Because something thing

Achievement is gathering results end from a work Which has done . Performance is one activities carried out , created Good in a way individual or group .

2.8.2. Importance Performance Study

Performance Study Which tall And optimal own role Which very important For success For achieve it objective education And teaching . Performance Study from result evaluation can made into as reject measuring from results Which obtained by participant educate For know so far where ability participant educate afterto finish a activity . As for performance Study as results evaluation functioning as tool For know achieved whether or not objective learning , as bait come back For learning process evaluation teaching , and become base in compilation report progress Study participant educate to parents . In addition , achievements learn also as tool For increase motivation participant educate so that more active Study For get mark Which good (Dita, P 2022).

2.8.3. Factors Which Influence Performance Study

Factors Which can influence performance Study participant educate in a way general And in a way line big can grouped become 2 factors , that is factor internal And factor external .

2.9. Factor Internal

Factor internal is factor Which originate from in self every individual Which experience process Study , factors which influence Study which originates from from in self every individual shared into 2 factors , namely factor physical and factors psychological . Physical factors that influence results Study among others, namely sensitive and five-pointed senses , health And age as well as condition

body each individual. Whereas For factor psychological affect the process and results Study between other level intelligence , creativity , talents and interests , achievements Study previous , and motivation Study . Intelligence (intelligence) is factor Which very important in process Study teach . That there is different intelligence different for each participant educateso that there are also differences in accept lesson Which given .

Creativity is ability every individual in produce or create something new . Talent and interest is factors that can influence results learn . Every participant educate own talent and ability different There is participant dudik who has talent and ability speak and there is Also participant educate what talented and have ability more in count and Knowledge Natural Science . Actually creativity students too can sharpened through activity learn , learn basically is process sustainable Where Study This Also what we can be certain of is need motivation Study , motivation Which intended here is things that are not lost important in activity learn . Without existence motivation learning , process Study will not enough succeed even though a participant educate have level intelligence Which tall . Will but not enough succeed in study it if they own motivation Study Which low .

2.10. Factors External

External factors that can influence results Study every individual is factors that originate from influence outside somebody . Factor outside the between other factor environment social from every individual Which consists of from environment school And public . Factor family is factor Which very important For development every participant educate . Environment family is environment First for every individual and is education that first and foremost , good in a way individual or group . Then environment school also not lost important Where environment school become environment second after environment family in school participant educate can get knowledge as well as education Which previously obtained in environment family , Then can applied returned by participants educate in the environment school And environment school even can continue or develop education Which has given in environment family previously .

So it can concluded that performance Study is results from activity Study Which has done every individual as change from behavior in demand Which passed with experience as well as outlook For Can interact with environment new Which concerning realm cognitive . Where performance Study This is also used as as reject measuring achieved or whether or not A objective learning , Of course performance Study This become very important thing . In achievement Study There are also two influencing factors that is factor internal And external that Already explained on .

3. RESEARCH METHOD

Methods used in the study This is use method experiment with approach approach quantitative . Research This utilise population limited and includes all student class IV SDN 1 Kadipiro . Therefore that , the sample taken here covers all over population . Saturated sampling is method taking sample Where every individual in population taken as sample . As a result , the population Class IV of SDN 1 Kadipiro shared into two classes : class IV A, which has 28 students , and class IV B, which has 26 students . With Thus , the total sample in study This is 54 people. Research has starting in October 2024. This study conducted at SDN 1 Kadipiro , which is located on Jl. Soragan Jl. Sutopadan No.RT. 04, Cobongan , Ngestiharjo , Kasihan District , Bantul Regency , Special Region of Yogyakarta.

In research This is a learning model contextual (CTL) is used as variable independent (X) variable independent and variable bound (Y). Therefore that, the goal from study This is For know whether variable X or Y can influence variable Y or bound ; in other words, can CTL influence precision learning contextual . This study use design experiment original , control post-test without treatment previously . Structure This has two groups , each of which they appointed in a way No random . One of the group accept intervention , while other groups do not . Group experiment called receiving group actions , and groups that do not accept action called group class control .

4. RESULT AND DISCUSSION

A. Instrument Trial

1. Validity Test

Validity is a the size that determines to what extent is the validity A tool measure . A instrument considered valid if tool measurement used For collect data can trusted , so that tool the can used For measure things that should be measured . In testing instrument this , researcher apply level significance of 5% of 21 respondents , where the level 5% significance results r table value of 0.43. Based on testing validity that has been conducted by researchers , it was found that all over question can declared valid or worthy For tested .

2. Test Reliability

Reliability test aiming For evaluate whether questionnaire show consistency when measurements taken with tool the repeated . The basis for implementing reliability testing *Cronbach Alpha* according to [8], a questionnaire can considered reliable If mark *Cronbach Alpha* > 0.6 . From the results of the reliability test that has been carried out by researchers , it was found mark *Cronbach Alpha* of 0.911 for question *Pre-Test* (Figure 1) and 0.904 for question *Post-Test* (Figure 2), so that can concluded that the item will be tested can categorized reliable .

Cronbach's Alpha	N of Items
.911	15

Figure 1. Pre-Test Reliability Test Results

Cronbach's Alpha	N of Items
.904	15

Figure 2. Post-Test Reliability Test Results

B. Prerequisite Trial

1. Test Test Normality

Test test normality This done For know whether the data distribution is normal or no . In the research this , test test normality is done apply Kolmogorov-Smirnov method . This method can used when amount respondents > 50 , with criteria that data distribution is normally distributed if mark *asyp . Sig(p)* more big from α . The method of taking decision normality with the Kolmogorov Smirnov test in SPSS 21 Research results obtained from all tested variables normally distributed with mark significance more from 0.05 can seen in.

C. Hypothesis Testing

1. T-test

Paired T-test used For evaluate whether the application of the CTL (Contextual Teaching and Learning) learning model impact significant on the results Study mathematics student class IV SDN 1 Kadipiro . In the T-test that has been done researcher obtained sig. result 0.000 where according to criteria results T- sample test decision pair , value *asyp sig.* < 0.05 , this show that variable independent tested own influence significant to variable dependent . and vice versa If mark *asyp sig.* > 0.05 , then variable independent tested No own influence significant to variable dependent . With Thus , based on criteria results decision said , can concluded that The application of the CTL (Contextual Teaching and Learning) learning model has an effect significant to results Study mathematics student class IV SDN 1 Kadipiro . Therefore that , H_0 is rejected and H_1 is accepted.

Independent Samples 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
Equal variances assumed	.274	.603	7.837	52	.000	22.775	2.906	16.943	28.606
Equal variances not assumed			7.779	48.86	.000	22.775	2.928	16.890	28.660

Figure 3 T-Test Results

5. CONCLUSION

Research result show that class experiments and classes control achieve more good . Class experiments that use learning models contextual and instructional (CTL) shows improvement mark or performance compared to class control . This is because the CTL model encourages student For participate more active in the learning process , making they more interested For finish questions , and show improvement ability in think critical .

In the research instrument this , researcher use level of significance 5% of 21 respondents , and obtained r table of 0.433. The results of the normality test obtained from all The variables that have been tested are normally distributed with mark significance > 0.05 . Validity test study show that all valid and proper questions For tested . Reliability test results researcher show Cronbach Alpha score 0.911 for Pre-Test questions and 0.904 for Post-Test questions , so that can concluded that the question that will be tested can considered reliable . Homogeneity test results show that all variable in study This homogeneous , with normal distribution and values significance more from 0.05. And in the Independent Sample T-Test it was obtained results asymp sig (2-tailed) 0.000 where number is < 0.05 . Based on criteria results decision for the Parried Sample T Test if mark asymp sig. < 0.05 then independent variables being tested proven own significant influence to dependent variable .

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