

EFFECTS OF MONTESSORI “COSMIC EDUCATION” ON THE LEARNING ACHIEVEMENTS OF FIFTH GRADE PRIMARY STUDENTS

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ABSTRAK

Generasi muda pada era globalisasi ini mendapat pengaruh yang sangat kuat dari nilai-nilai budaya luar, sehingga mulai banyak sikap dan perilaku yang tidak sejalan dengan nilai-nilai Pancasila. Hal ini menyebabkan, nilai-nilai cinta tanah air pun oleh sebagian pihak dipandang mengalami erosi. Salah satu model pembelajaran yang diberikan kepada anak agar mempunyai rasa cintat tanah air, dapat dilaksanakan melalui penggunaan media pembelajaran Montessori “Cosmic education” di kelas berdasar model pembelajaran Montessori.

Tujuan dari penelitian ini adalah melihat pengaruh media pembelajaran Montessori “Cosmic education” terhadap prestasi belajar siswa pada materi cinta tanah air siswa kelas IV SD. Hipotesis dari penelitian ini adalah ada pengaruh media pembelajaran Montessori “Cosmic education” terhadap prestasi belajar siswa pada materi cinta tanah air siswa kelas IV SD.

Desain penelitian yang digunakan dalam quasi eksperimen design tipe non-equivalent kontrol group design. Populasi penelitian adalah seluruh siswa kelas IV SD NGL. Sampel pada penelitian ini adalah siswa kelas IV A sebanyak 30 siswa sebagai kelas eksperimen dan siswa kelas IV B sebanyak 30 siswa sebagai kelas kontrol. Instrumen penelitian berupa soal isian singkat untuk mengukur prestasi belajar siswa pada materi cinta tanah air. Soal pada penelitian ini mempunyai reliabilitas sebesar 0.792.

Hasil penelitian menunjukkan bahwa media pembelajaran Montessori “Cosmic Education” berpengaruh terhadap prestasi belajar siswa, terbukti dari nilai yang diperoleh kelompok eksperimen, yaitu nilai $M = -7.733$, $SD = 3.016$, $SE = 0.551$, diperoleh harga Sig. (2-tailed) sebesar 0,000 ($p < 0,05$) dengan nilai $t = -14.042$ dan $df = 29$ dengan peningkatan sebesar 35% dan koefisien korelasi $r = 0,588$ yang termasuk kategori efek besar. Pada kelompok kontrol, diperoleh nilai M sebesar -0.833, $SD = 2.743$, $SE = 0.501$, diperoleh harga Sig. (2-tailed) sebesar 0.107 ($p > 0,05$) dengan nilai $t = -1.664$ dan $df = 29$ dengan peningkatan sebesar 14% dan koefisien korelasi $r = 0,372$ yang termasuk kategori efek menengah.

Kesimpulan dari penelitian ini adalah media pembelajaran Montessori “Cosmic Education” berpengaruh besar terhadap prestasi belajar di kelompok eksperimen. Berbeda halnya dengan kelompok kontrol yang berpengaruh menengah dalam prestasi belajarnya.

Kata kunci: *media pembelajaran montessori “cosmic education”, prestasi belajar, cinta tanah air.*

1. INTRODUCTION

1.1 Background of the Research

Pancasila is the ideology of Indonesia, yet it has not been internalized on the Indonesian people's hearts and souls. Maftuh (2008) said that Pancasila has not been well-implemented in the political life or in the civic life. This phenomenon becomes more obvious when the young people in the globalization era were affected by the other countries' norms. Most of their attitudes and behaviors are not aligned with Pancasila norms. It causes the nationalism values of

some people seem to erode (Triantoro in Maftuh, 2008).

One of the formal education subjects to strengthen the nationalism of the students is *Pendidikan Kewarganegaraan* (Civics). Civics is aimed to develop and increase the students' nationalism, so that they love and appreciate their country and are willing to sacrifice themselves for their country (Maftuh, 2008).

Maftuh (2008) said that this learning (Civics) is aimed not only to develop individual competences but also positive attitudes, such as: cooperation,

tolerance, open-mindedness, and empathy. The students are also engaged to do real social activities (social action). Therefore, the students learn not only in the classroom, but also outside the classroom or in the real society where they can do useful activities for themselves and for the society.

According to Mayer (2000), in order to fulfill the goal of the learning (while waiting the low-level skills mastered by the students), the teachers need to teach the students how to use the learning media, which is helpful for them to solve their problems (become critic) and develop their memory to understand a problem. The teachers need to teach the learning method from the beginning, so that the students “learn how to learn”. One of the learning models to help the students become critical learners is Montessori “*Cosmic education*” learning model.

Cosmic education is the element to unify the curriculum of primary students. This model provides a conceptual framework for all of the subjects including science and culture. This model provides an appropriate learning model to fulfill the needs of twelve-year-old students and develops their imagination, curiosity, and their willingness to become more active outside the classroom. Cosmic education is aimed to help us as an individual to find our own tasks in our community and to give the students understanding that they (us) are one unity among human beings and different cultures (Duffy & Duffy, 2002).

The development of the students between six and twelve years old creates a new education framework for Montessori learning. According to Montessori theory, primary age is a significant period to learn cosmic education. This period is the most suitable period for the students to learn Montessori “Cosmic Education” learning method because this is the sensitive period when the students develop their way of thinking and contexts to understand something (Duffy & Duffy, 2002).

The learning activities to increase the students’ nationalism are conducted through the implementation of cosmic education in the classroom based on Montessori learning model. Therefore, the research is aimed find the effect of Montessori “Cosmic Education” media on the fifth grade primary students. The hypothesis of the research is that the Montessori “Cosmic education” affects the fifth grade primary students’ nationalism.

1.2 Theoretical Framework

1.2.1 Learning achievement

Learning achievement is a result of learning activities performed by the students (Ridwan, 2008). Tohirin (2006) also reveals that learning achievement is the ability achieved by the students after finishing the learning activities. Based on both statements, the research concluded that the learning achievement is the ability gained by the students after they conducted learning activities.

1.2.2 Nationalism

Nationalism is the similar backgrounds, history, experiences, and struggle to gain freedom, descent, traditions, and language, which are bound together in one unity (Winataputra in Maftuh, 2008). According to Djahiri (1991), nationalism views the highest faith of each person given to the country as a must.

Based on the arguments above, the researcher concludes that nationalism is a feeling of being similar in terms of the backgrounds, the experiences, and the struggle for the country, which unifies the nation, solves the problems, and leads the future of the country.

1.2.3 Montessori Learning Model

The basic philosophies to underline Montessori learning are Absorbent Minds, The Prepared Environment, and Sensitive Period. One of the characteristics of Montessori school is the various uses of games and tools which are divided into several Montessori areas, namely: practical life area, sensorial area, language area, mathematics area, culture area, science area, history area, and cosmic education.

According to *American Montessori Society* (1984), Montessori learning media is aimed to optimize the children’s potential, such as: developing their concentration, observation skill, organization skill, coordination awareness to perceive and to do practical skill, mathematical concepts, reading, and writing skills (language skills), being accustomed to creative arts, understanding the natural environment, social science, and being able to solve their problems.

There are two conditions the children need in order to develop their potential: first, the children need to interact with their environment, so that they understand their own nature. Second, they need freedom to find out who they are. If both conditions

were missing, their potential development will not optimize (Chaeruman, 2008).

1.2.4 Cosmic Education

Cosmic education is a concept which understands of the cosmos, together with the role of humans as living and developing beings are obtained and applied. This concept brings a whole outlook for the people’s perspectives about life. There are seven aspects in cosmic education: first, peacefulness – is when the equality and the care of the earth consciously become the most important things to unify all of the people and things in the universe. Second, conservatory – means the universe is one unity; therefore, human beings are parts of it. Third, value – is when human beings understand that they have heart and thoughts to think about an idea. Forth, hope – is an ability to observe and value a situation in a positive way. Fifth, gratitude – is when human beings know how to express their feelings towards how the universe works. Sixth, Open-mindedness – is the idea that human being are parts of the expanding universe. The development of the open-mindedness brings out the feeling to be open-minded for every kind of development. Seventh, Cosmic work – when the educators realize that the children have huge curiosity and sensitive periods and give the opportunities to find and follow their curiosity.

2. METHODOLOGY

2.1 Type of Research

The research used one of quasi experimental design research methods namely nonequivalent control group design. It was because the researcher conducted the research with two groups (the experimental group and the control group) and the choice of the groups is not in random. After deciding the groups, the researcher gave both groups pretests to know how well they are in the nationalism materials and the differences between the experimental group and the control group. The researcher gave the treatment to the first group (the experimental group/ VA class). The treatment was teaching them using Montessori “Cosmic Education” learning media in the nationalism materials. On the other hand, the researcher did not teach the second group using Montessori “Cosmic Education” learning media. After the researcher gave the treatment, the researcher

gave posttest to both groups. The posttest was used to know how the treatment affected the experimental group.

Table 1: The Treatment Effect

O_1	X	O_2
O_3	X	O_4

Notes:

- O_1 = the results of the observation in the pretest of experimental group
- O_2 = the results of the observation in the posttest of experimental group
- O_3 = the results of the observation in the pretest of control group
- O_4 = the results of the observation in the posttest of control group
- X = the treatment using Montessori “Cosmic Education” learning media

2.2 Population and Sample

The populations were the fifth grade parallel classes of SD NGL Yogyakarta. The parallel classes are divided into two classes: class A (VA) and class B (VB). The samples in the research were VA class as the experimental group and VB class as the control group.

2.3 Research Data Collecting Technique

The researcher used tests namely achievement test to collect the research data. The achievement tests were given in the pretest time and in the posttest time in both groups. The control group and the experimental group were given the same pretest, and the results of the pretest were analyzed using normality test, statistical test, and differentiation test. After the researcher gave them pretests, the experimental group was given the treatment, which aimed to differentiate between the control group and the experimental group. At the end of the meeting, the experimental group and the control group were given the posttest in order to know how the Montessori “Cosmic Education” learning media affected them on the nationalism materials in fifth primary class.

2.4 Data Analysis Technique

In order to analyze the data, the researcher used statistics analysis software. There are two steps to analyze the data, the first is normality test and the

second is statistical test. Statistical test includes the test to find the homogeneity of pretest scores or to find the similarity of the pretest score, the test to find the improvements from the pretest to the test, and the test to compare the posttests of both groups.

3. ANALYSIS AND RESEARCH RESULTS

3.1 The Implementation of the Learning Media

The research was conducted in two classes, namely experimental group and control group. The experimental group was 22 students of fifth grade class A (VA) with 15 male students and 7 female students. The control group was 25 students of fifth grade class B (VB) with 13 male students and 12 female students. The learning activities were different in each class. The experimental group (VA) used "Cosmic Education" learning media; on the other hand, the control group (VB) did not use the media. The control group only used lecturing as the method. The learning activities in each group were taught by the same teachers.

The learning activities using Montessori "Cosmic Education" learning media in the experimental group were conducted five times. The pre-activities were story-telling and discussion. In the main activity, the teachers used Montessori "Cosmic Education" as the media. The teachers taught the students how to use the media, the teacher became the role-models, and then the students used the media by themselves. In the post activity, the students filled in evaluation sheets and drew a conclusion about the process of the learning.

The learning activities in the control group were conducted using lecture method. The learning activities were also conducted five times. The pre-activity was story-telling and discussion. In the main activity, the students listened to the teacher's explanation and the teacher lectured them about the materials. Then, after listening to the lecturing, the students filled in the work sheets. In post activity, the students drew a conclusion and filled in evaluation sheet.

The teacher became the materials deliverer in the control group; on the other hand, the teacher became the facilitator for the students' activities in the experimental group. However, in the experimental group, the teacher also gave explanation when the

students found difficulty in understanding the materials. In this step, the researcher only observed the learning activities conducted by the teachers.

3.2 Research Results

The research was an experimental research, which was conducted to find the effect of the use of Montessori "Cosmic Education" learning media on the fifth grade students' learning achievement in nationalism materials. The research was conducted in SD NGL Yogyakarta. The research used one of the types of quasi-experimental designs namely non-equivalent control group design. There were two groups in the research: experimental group and control group. The experimental group and the control group were chosen by the researcher and approved by the teachers. Different methods were conducted in each group. The researcher used the treatment in the experimental group and conventional method in the control group.

The instrument used in the research was achievements test, in the form of short answer tasks. The numbers of the item for the pretest and post test were 30 and the items were related to nationalism materials. The instruments used by the researcher had been tested using validity test and reliability test. The valid items were 19 and the reliability was 0.792. According to Masidjo (1995), when the value of reliability is 0.792, the test has high validity.

At the beginning of the research, the researcher gave the pretests to both groups. The aim was to know their prior knowledge. Next, the nationalism materials were delivered in both groups using different methods. The experimental group used Montessori "Cosmic Education" learning media and the control group used conventional learning method. After the learning activities were conducted, both groups were given the same posttest in order to know the effect of Montessori "Cosmic Education" learning media on their learning achievements in the nationalism materials.

3.2.1 The Effect of Montessori "Cosmic Education" Learning Media on the Students' Learning Achievements in Nationalism Materials

3.2.1.1 Normality Test

The research was conducted in order to find the effect of the independent variable, which is Montessori "Cosmic Education" learning media on the

students’ learning achievements in SD NGL Yogyakarta. The normality of the data in the pretest and the posttest were tested using Kolmogorov-Smirnov test in the statistics analysis software. The test was conducted in order to decide what kind of statistics would be used to analyze the next respondent data. The data distribution was normal if the value of sig. (2-tailed) of Kolmogorov-Smirnov testis more than 0.05. The following table is the results of normality test in the pretest and the posttest

to find the enhancement of the pretest score and the posttest score of experimental group and the control group to find the how much the enhancement of each group. 4) Test to find how much the treatment affects the group. The researcher tried to find the percentage of the effect of Montessori “Cosmic Education” learning media on the experimental group and compared them to the control group.

3.2.1.2. The Effect of the Treatment

Table 2: The Results of the Students’ Learning Achievements

No	The Aspects of the Test	Sig. (2-tailed)	The Distribution
1.	The average of pretest score of experimental group	0.490	Normal
2.	The average of the pretest of control group	0.257	Normal
3.	The average of posttest score of experimental group	0.710	Normal
4.	The average of the posttest of control group	0.721	Normal

Based on the results of the normality test of the students learning achievements, the value of Sig. (2-tailed) in the pretest of experimental group was 0.490 and the value of Sig. (2-tailed) in the posttest of experimental group was 0.710. The value of Sig. (2-tailed) in pretest of the control group was 0.257 and the value of the Sig. (2-tailed) in the posttest of the control group was 0,721. The value of Sig. (2-tailed) in the pretest and the posttest of the experimental group and control group were normal because the value of Sig. (2-tailed) > 0.05. After finding that the Sig. (2-tailed) of the pretest and the posttest of each group were normal, the researcher used parametric statistics to analyze the data in the experimental group and the control group.

The data analysis to find for effect of the Montessori “Cosmic Education” learning media on the students’ learning achievements was conducted in four steps: 1) Tests to find the differences of the prior knowledge. The researcher analyzed the data by comparing the results of the pretests in the experimental group and the control group in order to find the initial conditions of the students before the

1) Tests to find the difference of the prior knowledge

After finding the normality of the pretest data from each group, the researcher analyzed the pretest and the posttest scores. Then the researcher compared the scores of their pretest. The analysis used in this step was parametric statistics analysis, namely independent sample t-test.]

Before analyzing the data, the researcher tested homogeneity of both groups using Levene’s test. If the value of Sig. is > 0.05, it means both groups have homogeneity. If the value of Sig. is < 0.05 it means both groups do not have homogeneity. The results of Levene’s test showed that the value of F was 1.339 and the value of Sig. was 0.252 (p > 0.05). It meant that the researcher needed to use independent samples t-test to analyze the next data. The following table is the results of the Independent samples t-test.

The score of the experimental group was higher than the score of the control group. It was proved by the results M = 6.77, SD = 3.655, SE = 0.667 in the experimental group and M = 7.93, SD = 2.741, SE = 0.500 in the control group. The result was

Table 3: The Result of the Sig. (2-tailed) in the Pretest

The Pretest of	Sig. (2-tailed)	Meaning
Experimental group and control group	0.168	No Difference

researcher gave the “treatment”. 2) Calculating deviation between the pretest and the posttest scores. The researcher found the significant difference from the experimental group and the control group 3) Tests

significant because df = 58, t = 1.399, Sig. (2-tailed) = 0.168 (p < 0.05). The results showed that Sig. (2-tailed) > 0.05. It meant that H₀ was accepted and H_i was rejected. It meant that there was no significant

differences between the pretest score of the experimental group and the control group. Therefore, the researcher drew a conclusion that experimental group and the control group have the same prior knowledge.

2) Calculating the deviation between the pretest and the posttest score

The second step was conducted by subtracting the posttest scores and the pretest scores. Then, the subtraction results were analyzed using statistical analysis software. It was conducted after the researcher found the normality of the test using Kolmogorov-Smirnov test. The results of the deviation were as follows:

experimental group and the control group. Therefore, the researcher used Independent samples t-test to the next analysis. The following table is the results of the deviation between the pretest and the posttest scores using Independent samples t-test:

Based on the analysis using independent samples t-test, the researcher found that the value of Sig. (2-tailed) < 0.05 was 0,000. The scores were higher in the experimental group with M =7.7667, SD = 3.10376, and SE = 0.56667. It was different from the control group with M = 0.8333, SD = 2.74281, and SE = 0.50077. The results showed that there were differences between the experimental group and the control group, where the value of df = 58, t = -9.168,

Table 4: The Deviation between the Pretest and the Post Test Scores

No	The Aspects to See	Sig. (2-tailed)	Meaning
1	The deviation between the pretest and post test scores in Experimental group	0.911	Normal
2	The deviation between the pretest and post test scores in Control group	0.190	Normal

The table showed that the value of Sig. (2-tailed) > 0.05 was 0.911 in the experimental group and 0.190 in the control group, which meant that the data was normal. The results, then, were used to decide what statistics analysis that the researcher used next. The statistical analysis used by the researcher was

and $p < 0.05$ ($p = 0.000$). Based on the results of the Sig. (2-tailed) which was 0.000 ($p < 0.05$), H_0 was rejected and H_i was accepted. It meant that there was a significant difference between the pretest and the posttest in the experimental group and the control group. In the other words, Montessori “Cosmic

Table 5: The Deviation between The Pretest and the Posttest of the Student’s Learning Achievements

The Deviation between the Pretest and The Posttest of	Sig. (2-tailed)	Meaning
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parametric statistics, namely independent samples t-test. The deviation test on the pretest and the post test was conducted to find the significant differences between the pretest and the posttest scores in the experimental group and to analyze the effect of Montessori “Cosmic Education” learning media on the students’ learning achievements. Before the researcher analyzed the deviation data, the researcher conducted Levene’s homogeneity test. If the value of Sig. was > 0.05, there is a homogeneity variant in both groups. If the value of Sig. was < 0.05 there is no homogeneity in both groups. The analysis results on Levene’s test showed that the value of F = 0.087 and the value of Sig. = 0.768 ($p > 0.05$). It meant that the researcher found homogeneity variant in the

Education” learning media affected the students’ learning achievements.

3.2.1.3 Further Analysis

1) Test to Find the Enhancement of the Pretest and the Posttest

The third step was aimed to see if there was any significant enhancement after the treatment was conducted. From the calculation on the deviation between the pretest and the posttest, the researcher found the percentage of enhancement. Based on the results of the normality test on the control group and the experimental group using Kolmogorov-Smirnov test, the researcher found that the value of Sig. (2-tailed) was >0.05. It meant that the pretest and

the posttest were normal. Then, the next statistical test was paired samples t-test. The following table showed the results of the paired samples t-test:

Table 6: The Difference between the Pretest and the Posttest Scores

No.	Groups	Test		Enhancement	Sig. (2-tailed)	Meaning
		Pretest	Posttest	%		
1.	Experimental Group	6.77	14.50	114.3	0.000	Having difference
2.	Control Group	7.93	8.77	10.5	0.107	Not having difference

The table showed that the value of Sig. (2-tailed) in the experimental group was 0.000 with the value of $M = -7.733$, $SD = 3.016$, $SE = 0.551$, and $t = -8.860$. On the other hand, the value of Sig. (2-tailed) in control group was 0.107 ($p > 0.05$) with the value of $M = -0.833$, $SD = 2.743$, $SE = 0.501$, and $t = -1.664$. In the experimental group, the value of Sig. (2-tailed) was 0.000 ($p < 0.05$), which meant H_0 was rejected and H_1 was accepted. It meant that there were significant differences between the pretest and the posttest scores. In other words, the researcher found significant enhancement from the pretest to the posttest in the experimental group. On the other hand, the value of Sig. (2-tailed) in the control group was 0.107 ($p > 0.05$), therefore, H_0 was accepted and H_1 was rejected. It meant that there was no significant difference between the pretest and the post test in the control group. The percentages of the enhancement of the experimental group and the control group were different. The percentage of the enhancement of the experimental group was 114.4% and the percentage of the enhancement of the control group was 10.5%.

2) Effect Size Test

The fourth step was testing the effect of the treatment or the effect size, which aimed to find how much the treatment affected the learning achievements. Different treatments were conducted in the experimental group and the control group. The researcher used treatment using Montessori “Cosmic Education” learning media in the experimental group and conventional method in the control group. The criteria to find the effect of the treatment were based

on Field (2009). The following table is the results of the calculation on the effect of the treatment:

The table shows that the experimental group get $r = 0,588$ with the percentage of the effect was 35% and the size of the effect (r) is $> 0,50$. On the other hand, the control group has $r = 0,372$ with the percentage of the effect was 14% and the size of the effect (r) is $> 0,30$. From the results, the researcher found that the experimental group got large size effect and the control group got medium size effect. In other words, Montessori “Cosmic Education” learning media gave large effect on the experimental group’s learning achievements and it gave medium effect on the control group’s learning achievements.

4.3 Discussion

4.3.1 The Effect of Montessori “Cosmic Education” Learning Media on the Students’ Learning Achievements

Ridwan (2008) and Tohirin (2006) state that the learning achievement is a skill and a result achieved by the students because the learning activities have been conducted. According to the theory, the students’ having good learning achievements caused by the learning process they did. It was proven by the data analysis which was conducted by the researcher.

Based on the results of the conducted data analysis, Montessori “Cosmic Education” learning media affected the students’ learning achievements. The conclusion was proven by the calculation which showed that the value of Sig. (2-tailed) of the experimental group was 0,000 ($p < 0.05$). It meant H_0 was rejected and H_1 was accepted. In the other words,

Table 7: The Effect of the Treatment on the Students’ Learning Achievement

Groups	t	t ²	df	r	R ²	Enhancement (%)	Size
Experimental Group	-14.042	197.18	29	0.588	0.345	35	Large
Control Group	-1.664	2.76	29	0.372	0.138	14	Medium

Montessori “*Cosmic Education*” learning media affected the students’ learning achievements.

The results of the statistical test showed that Montessori “*Cosmic Education*” learning media affecting the students’ learning achievements matched with the researcher’s research on fifth grade students in SD NGL. The students who used Montessori “*Cosmic Education*” were able to think critically by using Montessori “*Cosmic Education*” learning media in their learning activities. They were also able to memorize all of the materials about nationalism and were able to answer all questions in the posttest well. It showed that Montessori “*Cosmic Education*” learning media was able to increase their learning achievements because the students was able to use the media to study, memorize, and answer the posttest question well.

The results of the use of Montessori “*Cosmic Education*” learning media also proved the Piaget theory that the children between 6/7 and 11/12 years old enter the operational concrete stage (Ormrod, 2008). In this stage, the students use concrete objects to help them think in abstract manners. The students in this stage are also able to think logically as in answering the pretest and the posttest question. Furthermore, the students are able to learn something from every experience they have, especially the experience when using Montessori “*Cosmic Education*”. In the research, they used Montessori “*Cosmic Education*” learning media five times; therefore, the students were able to memorize what had been taught by the teachers related to Montessori “*Cosmic Education*” learning media and answer the posttest questions well. The students were able to classify the dances, the music instruments, the traditional houses, the traditional weapons, the traditional clothes, and then matched them with their places. Piaget theory was proven in this research through Montessori “*Cosmic Education*” learning media that helped the students to think in abstract manner and affected their learning achievements.

Different from the experimental group, the students in the control group (VB SD NGL), which

used conventional method to study, did not actively engaged in the learning activities. It was because the student felt bored of the learning activities. Many students slept, talked to each other, and played with things around them during the teaching learning activities. The control group was lectured without using Montessori “*Cosmic Education*” learning media and then given the evaluation sheet to fill. The analysis results of the posttest in the control group showed that the learning achievements of the students were not significant from the pretest.

4.4 Conclusions

Montessori “*Cosmic Education*” learning media affected the learning achievements of the fifth grade students of SD NGL Yogyakarta in the nationalism materials. It was proven by the results of the independent samples t-test on the deviation between the pretest and the posttest scores of experimental group and the control group. The significant difference between the pretest and the posttest scores were obvious in the experimental group and the control group. In the experimental group, the value of $M = -7.733$, $SD = 3.016$, $SE = 0.551$, and $Sig. (2-tailed) = 0,000$ ($p < 0.05$), therefore, H_0 was rejected and the H_1 was accepted. The value of t_{in} experimental group was -14.042 and the value of df was 29 group with 35% of enhancement and the coefficient correlation $r = 0,588$, which meant the experimental group was categorized as “large effect”.

In the control group, the value of $M = -0.833$, $SD = 2.743$, $SE = 0.501$, and $Sig. (2-tailed) = 0.107$ ($p > 0.05$). The value of t_{in} was -1.664 and the value of df was 29 with 14% of enhancement and the coefficient correlation $r = 0,372$. It was categorized as “medium effect”.

In conclusion, Montessori “*Cosmic Education*” learning media gave large effect on the learning achievement of the experimental group. On the other hand, the control group got medium effect without using the Montessori “*Cosmic Education*” learning media.

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