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The Application of Ice Breaking as a Strategy to Increase Students' Learning Motivation

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Abstract
This study aims to determine the effect of the application of Ice Breaking in increasing student learning motivation in science learning. The method used is quantitative with a pre-experimental one-group pretest-posttest design. Data were collected through questionnaires, observations, and documentation, then analyzed using simple linear regression tests and product moment correlations. The results showed that there was an increase in learning motivation after the implementation of ice breaking. The average pretest score of 40.23 increased to 40.35 in the posttest. The correlation test showed a value of r = 0.7 > r table 0.388, which means there is a significant relationship between ice breaking and learning motivation. The regression equation obtained is Y = 17 + 0.65X with a coefficient of determination of 49%, meaning that Ice Breaking contributed 49% to increasing learning motivation. These findings indicate that the use of Ice Breaking is an effective strategy in supporting active and enjoyable learning in elementary classes, especially in science learning.

Keywords: Ice Breaking, Learning Motivation, Natural and Social Sciences

Abstrak
Penelitian ini bertujuan untuk mengetahui pengaruh penerapan Ice Breaking dalam meningkatkan motivasi belajar siswa. Metode yang digunakan bersifat kuantitatif dengan desain eksperimental pre-test pre-test satu kelompok pra-eksperimental. Data dikumpulkan melalui kuesioner, observasi, dan dokumentasi, kemudian dianalisis menggunakan uji regresi linier sederhana dan korelasi momen produk. Hasil penelitian menunjukkan bahwa terjadi peningkatan motivasi belajar setelah pelaksanaan ice breaking. Skor rata-rata pretest 40,23 meningkat menjadi 40,35 di posttest. Uji korelasi menunjukkan nilai r = 0,7 > tabel r 0,388, yang berarti ada hubungan yang signifikan antara pemecahan es dan motivasi belajar. Persamaan regresi yang diperoleh adalah Y = 17 + 0,65X dengan koefisien penentuan 49%, yang berarti bahwa Ice Breaking berkontribusi 49% terhadap peningkatan motivasi belajar. Temuan ini menunjukkan bahwa penggunaan Ice Breaking merupakan strategi yang efektif dalam mendukung pembelajaran aktif dan menyenangkan di kelas dasar, khususnya dalam pembelajaran IPA.

Kata kunci*: Ice breaking, motivasi belajar, IPS*

Introduction

Education has an important role in educating the life of the nation and shaping the character of the younger generation. Through quality education, students can develop their potential intelligence, skills, and personality. However, in reality, the quality of education in Indonesia still faces various

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challenges, one of which is the low enthusiasm for student learning. Teaching and learning activities are the process of interaction between teachers and students to achieve learning goals. This interaction should take place in two directions, where teachers and students are both active and understand each other's ways and thinking patterns (Mustari & Rahman, 2023).

One of the obstacles that students often face is laziness to study. This is usually due to a boring and uninteresting way of teaching. This laziness reflects low motivation to learn, which ultimately has an impact on students' learning achievement. Learning motivation is very important because it affects learning outcomes, and the factors that affect it can come from oneself or the environment. The role of teachers is very large in this case because teachers interact directly with students in the learning process (Wana et al., 2024). Low motivation to learn can arise due to several things, such as monotonous learning methods, teachers who are too dominant, and lack of student participation in the learning process. Often students are only passive listeners, not active participants in building their own pedagogical abilities. As a result, they get bored easily, have difficulty concentrating, and lack enthusiasm for learning (Cheng & Chen, 2022).

To increase student engagement, learning should start with a fun, exciting, and attention-grabbing atmosphere. One way that can be used to dilute a tense or boring classroom atmosphere into a more lively and fun one is ice breaking (Febriandari, 2018). According to Ramayulis, teachers not only play the role of teachers, but also classroom managers, motivators, and assessors. Therefore, teachers need to have a way to keep students interested and focused on learning (Utami et al., 2024). In the context of education, ice breaking serves to eliminate boredom and make students re-energize. This activity can be done inside or outside the classroom, depending on the space available (Munif, 2011). In the learning process, students are required to be ready to take lessons, including science (Natural and Social Sciences) lessons which are a combination of science and social studies. This subject is often considered difficult because it requires reasoning, comprehension, and memorization, so students are less interested and quickly lose attention (Isnaeni & Zulherman, 2024). Therefore, teachers need to find ways to make students feel happy and excited in learning.

Ice breaking not only makes the classroom atmosphere more comfortable, but can also increase students' motivation to learn. When the learning atmosphere is pleasant, students are more active and enthusiastic to follow the lessons (Fadillah & Muthi, 2024). Solihat said that ice breaking is useful for overcoming boredom, practicing creativity, cooperation, systematic thinking, increasing confidence, and helping students to be more focused and ready to make decisions (Susanti, 2021). Based on the results of initial observations, it is known that science lessons often feel boring for students because of the lack of variety of learning methods. Students are easily bored, lack focus, and are not enthusiastic about following lessons. Therefore, a more interesting learning approach, such as ice breaking, is needed. This study aims to find out the application of Ice Breaking in increasing students' learning motivation in social studies learning and the extent of its influence.

Method

This study uses a quantitative approach with a type of experimental design *pre-experimental one-group pretest-posttest*. This design allows researchers to observe changes in students' learning motivation before and after being given treatment in the form of application *ice breaking* in learning. This design is particularly suitable for testing direct cause-and-effect relationships even without a control group, especially in the context of Education research (Creswell & Guetterman, 2019). The location of the research is at the Nahdlatus Shaufiah Wanasaba boarding school in East Lombok, East Lombok, with a total of 26 subjects in grade IV. The sampling technique uses the saturated sampling method, where the entire population is used as a sample because the number is limited and all of them meet the criteria. The data collection technique uses three main methods, namely questionnaire, observation, and documentation (Scott, 2021). The questionnaire was used to measure the level of

students' learning motivation both before and after treatment, which was compiled based on learning motivation indicators (One, 2016). Observations were used to record student engagement and class dynamics during the activity, while documentation was used as complementary data to reinforce the findings. The use of these three techniques aims to ensure that the data obtained has high validity and can reinforce each other (Scott, 2021).

The data was analyzed using the help of SPSS software version 22 and manual analysis. The tests carried out include normality tests (to ensure data distribution), Pearson correlation tests (to determine the strength of relationships between variables), and simple linear regression tests (to determine how much influence free variables have on bound variables). The selection of this technique is based on its effectiveness in quantitative research in the field of education, in particular to detect the linear relationship between two variables (Turney, 2023).

Correlation Test can be calculated with the formula (Munir & Sholehah, 2023) as follows:

$$rxy = \frac{N\Sigma XY - (\Sigma X)(\Sigma Y)}{\sqrt{\{n.\Sigma X^2 - (\Sigma X)^2\}.\{n.\Sigma Y^2 - (\Sigma Y)^2\}}}$$

Results and Discussion

Result

The research was conducted by distributing questionnaires or questionnaires to obtain data on the Application of Ice Breaking as a Strategy to Increase Student Learning Motivation. The object of this research is elementary level students who are in the Nahdlatus Shaufiah Wanasaba Islamic boarding school in East Lombok, which totals 26 students as well as a research sample.

1. **Data Normality Test**

   A normality test was carried out to find out whether the data concerned could be called normal distribution or not. The rules of the researcher's normality test used the kolmogrov-smirnov formula (Sugiono, 2021).

Table 1. Overall Post-Test Results Table

post	F	pi	Pk	Zi	F (Zi)	a1	a2	nmax	Dtabel
34	1	0,0385	0,040	-2,69	0,0036	0,0364	0,002		
37	1	0,0385	0,078	-2,13	0,0166	0,0619	-0,023		
42	1	0,0385	0,117	-1,19	0,1170	0,0001	0,038		
43	1	0,0385	0,155	-1,00	0,1587	0,0033	0,035	0,1690	0,259
45	1	0,0385	0,194	-0,63	0,2643	0,0705	-0,032		
46	1	0,0385	0,232	-0,44	0,3300	0,0977	-0,059		
47	5	0,1923	0,425	-0,25	0,4013	0,0233	0,169		
48	1	0,0385	0,463	-0,06	0,4761	0,0130	0,025		
49	1	0,0385	0,502	0,12	0,0478	0,4537	-0,415		
50	7	0,2692	0,771	0,31	0,1217	0,6491	-0,380		
52	2	0,0769	0,848	0,69	0,2549	0,5928	-0,516		
56	4	0,1538	1,002	1,44	0,4251	0,5764	-0,423		
mean (rata-rata)		48,35							
simpangan baku		5,329							

Source: Results of research data processing in 2024

Based on the results of the calculation value of a max and the value of Dtable, namely a max = 0.1690 and the value of Dtable = 0.259, then based on the test criteria: a max ≤ Dtable, 0.1690 ≤ 0.259, this shows that Ho is accepted, so it can be concluded that the data is normally distributed.

2. **Homogeneity Test**

Variance homogeneity testing is a test that is carried out to find out whether the variances of a number of populations are the same or not. In this study, the homogeneity test uses the variance test in SPSS statistic 22, the basis for the data decision can be done by comparing the significance number ≥ 0.05, then the data is homogeneous. Here are the results:

Tabel 2. Test of Homogenelty of Variances

Levene Statistic	df1	df2	Sig.
.347	3	14	.792

Source: Results of research data processing in 2024.

Based on the table above, it can be seen that the significance value is 0.792 which is greater than 0.05. This is proven by the normality test rule to see the significance is ≥ 0.05, which is 0.792 ≥ 0.05, so the data is said to be homogeneous.

3. Uji Hypothesis

To test the two variables of this study, the hypothesis of this study was analyzed using a Simple Regression Test to test the hypothesis. The author writes a hypothesis in the form of statistics, namely:

Hipotesis
Ha : There is an effect of the application of ice breaking on learning motivation
Ho: There is no effect of the application of ice breaking on learning motivation
Statistik Hypothesis
Ha: R = 0
With: R ≠ 0

Solution steps:

1. Creating a Table

Deep do The hypothesis test of the researcher does it manually, to make it easier for the researcher to process into two research variables, the researcher creates a table of performance to combine between Variable X (*Ice Breaking*) and Variable Y (Learning Motivation). The value of X is the result of the Questionnaire data (*Post-Test*) and Y value are the results of Questionnaire data (*Pre-Test*) Students. From the results made in the following table:

Table 3. The Effect of Using *Ice Breaking* in Increasing Learning Motivation

NO	Name	X	And	X2	Y2	XY
1	Adlin Naufal Fajri	47	48	2209	2304	2256
2	Agniya Thohira	47	43	2209	1849	2021
3	Asri Anggina	52	52	2704	2704	2704
4	Atika Zahra Latifa	52	55	2704	3025	2860
5	Aulia Safitri Rahmani	56	56	3136	3136	3136
6	Bq. Gina Hildiya R.	42	42	1764	1764	1764
7	Bq. Izzia Ilma	43	49	1849	2401	2107
8	Diva Eit Saputri	56	48	3136	2304	2688
9	Harist Arkan I.	48	50	2304	2500	2400
10	Hasna Kamila	47	52	2209	2704	2444
11	Hidayatul Fitri	50	47	2500	2209	2350
12	Isra'atul Husna	50	50	2500	2500	2500
13	Jenudin Arsad	50	50	2500	2500	2500

14	Maya Angela	56	56	3136	3136	3136
15	Khafiza Khaera L.	47	53	2209	2809	2491
16	Then Gibran Rasyidi	49	48	2401	2304	2352
17	Liyunzi Arsadi	50	43	2500	1849	2150
18	Muhammad Hidir M.	50	46	2500	2116	2300
19	Mrs. April Yunadia	46	36	2116	1296	1656
20	Rabi'atul Adawiyah	34	38	1156	1444	1292
21	Samsul Hadi	50	50	2500	2500	2500
22	Siti Ayuni Astuti	50	44	2500	1936	2200
23	Sofia Hana Nadira	45	50	2025	2500	2250
24	Usratur Rahmah	56	56	3136	3136	3136
25	Deshani Qatrun Nada	47	49	2209	2401	2303
26	Zukit Arrahman	37	43	1369	1849	1591
	Sum	Sx 1257	SY 1254	ΣX2 61481	ΣY2 61176	ΣXY 61087

From the table above, it can be seen:

a. N = 26

b. Left = 1257

c. SY = 1254

d. Sx2 = 61481

e. S2 = 61176

f. ΣXY = 61087

2. Hipotesis

Has : There is an influence *ice breaking* on learning motivation

Ho : No influence *ice breaking* on learning motivation

3. Statistik Hypothesis

Has : R = 0

Ho : R $\neq$ 0

4. Determining the value of a

$$\alpha = \frac{(\Sigma Y)(\Sigma X^2) - (\Sigma X)(\Sigma XY)}{n(\Sigma X^2) - (\Sigma X)^2}$$

$$\alpha = \frac{(1254)(61481) - (1257)(61087)}{26(61481) - (1257)^2}$$

$$\alpha = \frac{77097174 - 76786359}{1598506 - 1580049}$$

$$\alpha = \frac{310815}{18457}$$

$$\alpha = 16{,}83$$

$$\alpha = 17 \text{ (Pembulatan)}$$

5. Determining the value of b

$$b = \frac{n(\Sigma XY) - (\Sigma X)(\Sigma Y)}{n(\Sigma X^2) - (\Sigma X)^2}$$

$$b = \frac{26\ (61087) - (1257)\ (1254)}{26\ (61481) - \ (1257)^2}$$
$$b = \frac{1588262 - 1576278}{1598506 - 1580049}$$
$$b = \frac{11984}{18457}$$
$$b = 0{,}649$$
$$b = 0{,}65 \text{ (pembulatan)}$$

By finding the value of a = 17 and the value of b = 0.65, it can be determined that the equation of the regression line is Y = 17 + 0.65X

6. Determine the sum of squares (JK) of each source of variation.

a. The total amount is as follows

JKtot = ΣY2 = 61176

b. The sum of the squares of regression a is as follows:

JKreg (α) = $\frac{(\Sigma Y)^2}{N} = \frac{1254^2}{26} = \frac{1572516}{26}$ = 60481.38

c. The sum of the regression squares b/a is as follows:

JKreg (b/a) = b (ΣXY -)$\frac{(\Sigma X)(\Sigma Y)}{N}$
= 0.65 (61087-)$\frac{(1257)(1254)}{26}$
= 0.65 (61087-)$\frac{(1576278)}{26}$
= 0.65 (61087-60626)
= 0.65 (461)
= 299.6
= 300 (rounding)

d. The number of residues is as follows:

JKres = JKtot - JKreg(α) - JKreg(b/a)
JKres = 61176 - 60481.38 - 300
JKres = 694.62 - 300
JKres = 394.62
JKres = 395 (rounding)

7. Determine the degree of freedom (dk) of each source of variation

a. dkreg (α) =1

b. dkreg) = k = 1($\frac{b}{a}$

c. dkreg = 26 -1 -1 = 24

8. Determine the average number of squares (RJK) of each source of variation

a. RJKreg (α) = = 60481.38$\frac{JKreg\ (\alpha)}{1} = \frac{60481{,}38}{1}$

b. RJKreg) = = 300($\frac{b}{a}\frac{JKreg\ (\frac{b}{a})}{1} = \frac{300}{1}$

c. RJKres = = = 16.45 = 16.5 (rounding) $\frac{JKres}{n-2} = \frac{395}{26-2}\frac{395}{24}$

9. Calculating the value of Fcalcul.

a. Fcount = = = 18.18 = 18.2 (rounding) $\frac{JKreg\,(\frac{b}{a})}{RJKres}\frac{300}{16,5}$

10. Comparing Fcal prices with Ftabel

The hypothesis Hα is accepted and H0 is rejected if Fcal > Ftable. on the other hand, H0 is accepted and Hα is rejected if Fcal < Ftable. Based on the results of the F test, it shows that the Fcal test value is 18.2 and the Ftable value is obtained based on the critical value α = 0.05 on dkreg) = k = 1 and dkres = 26 - 1 - 1 =24, then it is determined that Ftable is 4.26. Based on the results of these values, it can be seen that 18.2 > 4.26 means Fcal > Ftable. So it shows that Hα is accepted and Ho is rejected, then there is an influence of the use of ($\frac{b}{a}$*ice breaking* in increasing students' learning motivation in science subjects in elementary school and this also means that the regression equation Y = 17 + 0.65X is meaningful.

Next between the *ice breaking* with the value of learning motivation, the correlation can be calculated. Correlation It can be calculated with the following formula:

$$rxy = \frac{N\Sigma XY\ -\ (\Sigma X)(\Sigma Y)}{\sqrt{\{n.\Sigma X^2\ -}\,(\Sigma X)^2\}.\{n.\Sigma Y^2\ -\ (\Sigma Y)^2\}}$$

Price-price that Needed To solve this, you can see table 4.5 as follows:

Thick: N = 26
ΣX = 1257
ΣY = 1254
Σx2 = 61481
ΣY2 = 61176
ΣXY = 61087

$$rxy = \frac{N\Sigma XY\ -\ (\Sigma X)(\Sigma Y)}{\sqrt{\{n.\Sigma X^2\ -\ (\Sigma X)^2\}}.\{n.\Sigma Y^2\ -\ (\Sigma Y)^2\}}$$

$$rxy = \frac{26\ (61087)\ -\ (1257)(1254)}{\sqrt{\{26 * 61481 - (1257)^2\}}.\{26 * 61176 - (1254)^2\}}$$

$$rxy = \frac{1588262\ -\ 1576278}{\sqrt{\{1598506 - 1580049\}}.\{1590576 - 1572516\}}$$

$$rxy = \frac{11984}{\sqrt{\{18457\}}.\{18060\}}$$

$$rxy = \frac{11984}{\sqrt{333333420}}$$

$$rxy = \frac{11984}{18257,4}$$

$$rxy = 0,65$$

$$rxy = 0,7\ (\text{pembulatan})$$

The price of the table for the critical value of α = 0.05 with a value of N = 26 with free degree or db = N -2 = 26 -2 = 24 or obtained rtable = 0.388 . Because the price of the rtable calculation >, it can be concluded that there is a positive and significant relationship of 0.7 between the use of *ice breaking* in increasing students' learning motivation in science subjects. Furthermore, the coefficient of determination is calculated as follows:

$$KD = r^2 \times 100\%$$

$$= 0.7^2 \times 100\%$$

$$= 0.49 \times 100\%$$

$$= 49\%$$

This means that the average value of learning motivation for science class IV of 49% is determined by *ice breaking* given through the regression equation Y = 17 + 0.65X. while the remaining 51% is determined by other factors.

Discussion

Motivation to Learn Before the Implementation of Ice Breaking

Before the implementation of ice breaking, the results of the pretest questionnaire showed an average score of 48.23. This figure shows that students' motivation to learn is still relatively low. During observation, it was seen that many students paid less attention to the lessons, did not understand the material presented, and tended to talk to their classmates. As a result, the learning process becomes ineffective and students are not actively engaged. This is in line with the opinion (Kompri, 2016) that students with low motivation usually pay less attention to lessons, lack enthusiasm, feel overwhelmed, have difficulty concentrating, and often disrupt the class.

Learning Motivation After the Implementation of Ice Breaking

After ice breaking was applied, the average post-test questionnaire score increased to 48.35. Although the improvement is not too large, there is a significant change in quality. Students become more focused, excited, and able to complete tasks well. The atmosphere of the classroom becomes more pleasant, and the students show more interest in the lessons. According to Sunarto, ice breaking helps maintain emotional stability and increase students' enthusiasm for learning (Sunarto, 2017). These results strengthen the finding that the use of ice breaking in the learning process is able to increase students' motivation to learn. The difference in score between pre-test and post-test shows a positive development after this method is applied.

The Application of Ice Breaking as a Strategy to Increase Student Learning Motivation.

The results of data analysis using SPSS version 22 showed that the average pretest score of 48.23 increased to 48.35 after the implementation of ice breaking. Although the difference is small, it still indicates a positive change. The results of the simple regression test found a value = 17 and a value b = 0.65 so that it can be determined that the regression line equation is Y = 17 + 0.65X, with X as *the ice breaking* variable and Y as the learning motivation. The value of Fcal of 18.2 is greater than the Ftable of 4.26, so it can be concluded that Hα is accepted and H_0 is rejected. This means that ice breaking has a real influence on increasing student learning motivation.

To measure how big of an influence this is, Product Moment correlation is used. It was found that the rcount of 0.7 was greater than the rtable of 0.3882. This shows that there is a positive and significant relationship between ice breaking and learning motivation. Based on the regression line equation Y = 17 + 0.65X where the r-square value of 49% shows that almost half of the increase in

learning motivation is due to ice breaking, while the remaining 51% is influenced by other factors that come from the internal or external of the student himself.

Conclusion

Based on the results of the analysis, it is known that the value of Fcal is 18.2 higher than the Ftable of 4.26. This shows that the use of ice breaking has a significant influence on students' learning motivation, so alternative hypotheses are accepted. In other words, there is a real influence of the application of ice breaking on increasing student learning motivation in elementary schools in the Nahdlatus Shaufiah Wanasaba Islamic boarding school, East Lombok. A correlation value of 0.7 indicates a strong relationship, and an r-square value of 49% indicates that almost half of students' learning motivation is influenced by ice breaking, while the remaining 51% is influenced by other factors such as students' physical, psychological, and social environment.

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