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## THE EFFECT OF ICE BREAKING ON STUDENT LEARNING CONCENTRATION ON THE SUBJECT OF ISLAMIC RELIGIOUS EDUCATION

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### Abstract

This study aims to test the effect of ice breaking on children's learning concentration in Islamic Religious Education subjects at State Senior High School 10, Pekanbaru. This research method uses a quantitative approach and the Quasi-Experiment method with a Non-equivalent Control Group Design research design. The sample used in this study was 35 students of class X.1 as the experimental class and 35 students of class X.3 as the control class –sampling using a purposive sampling technique. Data collection was carried out using observation, questionnaires, and documentation. Data analysis techniques used parametric statistics, with the T-test. The results of this study indicate that there is a significant difference in student learning concentration between the control class and the experimental class in Islamic Religious Education subjects at State Senior High School 10 Pekanbaru,  $t_{count}$  is greater than  $t_{table}$ , which is  $3.987 > 1.667$  and  $Sig. (2-tailed) = 0.000 < 0.05$ , then  $H_0$  is rejected and  $H_a$  is accepted. It has been proven that ice-breaking affects students' concentration in learning.

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### Keywords

Concentration Learning; Icebreaker; Islamic Religious Education; Quasi-Experiment; Students.



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## INTRODUCTION

Concentration of learning is a fundamental aspect of the educational process because it is the foundation for students to absorb, understand, and remember the information conveyed during learning. Concentration is defined as intensely focusing on an object or activity by excluding distractions or other irrelevant things (Van Der Stigchel, 2020). In learning, the ability to concentrate determines the effectiveness of the interaction between teachers and students and affects students' absorption of subject matter. Concentration affects academic ability and is closely related to students' ability to manage emotions, behaviours, and motivation in a learning environment (Simatupang & Bui, 2025). Concentration works in harmony with memory. When concentration increases, memory will last longer. On the other hand, if concentration is weakened, students tend to forget the material delivered more easily. Therefore, in ideal conditions, every learning process should take place in an atmosphere that can support and maintain student concentration so that the learning results achieved can be maximised (Huda et al., 2022).

The reality on the ground shows conditions far from ideal. Based on observations made at State High School 10 Pekanbaru, many students still struggle to concentrate during the learning process. This is characterised by various behaviours such as students who chat while the teacher is explaining lessons, ignore the teacher's explanation, and often change seats for no apparent reason (Furlong, 2020). Some even disturb other friends around them. This situation causes learning interactions to be ineffective, hinders understanding of the material taught, and reduces the overall quality of the learning process. Many factors, such as a tired or sleepy physical condition, boredom with monotonous lessons or teaching methods, or psychological factors such as a lack of interest in the material or the teacher, can cause this inability to concentrate (Bella & Ratna, 2018). This condition is a big challenge that must be overcome with the right and innovative pedagogical approach.

To answer these problems, this study aims to empirically examine the influence of ice-breaking activities on student learning concentration in Islamic Religious Education subjects at State High School 10 Pekanbaru (Ghasiyah et al., 2024). By utilising various forms of ice breaking, such as yells, gestures, songs, games, and audio-visual media, teachers can revive students' enthusiasm, which begins to decline in the middle of the learning process (Fajarudin et al., 2021). The primary purpose of this study is not only to find out whether ice breaking positively impacts learning

concentration, but also to provide alternative learning methods that are more humane and fun, as well as to make students active subjects in the learning process.

Much research on the role of ice breaking in learning has been done, but most of it still has limitations in scope and approach. Research by, for example, found that ice breaking positively impacted learning concentration (Haryati & Puspitaningrum, 2023). However, the study was only conducted on grade X students in one school, so the results did not reflect the diversity of learning conditions in other schools or at different grade levels. In addition, the context of the lessons studied has not touched the subject of Islamic Religious Education, which has its characteristics in its delivery and approach. Thus, further research is still needed to explore using ice-breaking more widely and in different learning contexts.

In addition, previous research has not discussed the types of icebreakers that are most effective in improving study concentration. There are various variations of ice breaking, such as applause, humour, fairy tales, and simple magic, each of which has different characteristics and effects on students (Krist & Shim, 2024; Mustakim & Kamal, 2024). A study, for example, researched the influence of ice breaking but has not analysed the difference in effectiveness between these types of ice breaking, as well as how long and how often ice breaking should be done in one learning session (Deswanti et al., 2020). This information is essential to assist teachers in choosing the right and efficient strategy according to the conditions of the students and the material being taught.

Furthermore, most previous studies have focused on the ice-breaking variables themselves without considering other variables that could interact or contribute to student concentration, such as teachers' teaching styles, classroom layout, or individual student characteristics (Faizah, 2019; Rosni, 2021; Wahyuni, 2021). These variables significantly influence how students respond to the learning strategies given. For example, a teacher with an expressive teaching style may not need as much ice-breaking as a teacher with a monotonous teaching style (Fatsah et al., 2025; Wulandari, 2021; Zuhaida & Kinesti, 2023). Likewise, comfortable classroom conditions, adequate lighting, and healthy social interaction between students can amplify the positive impact of ice breaking on study concentration (Franceschini & Neves, 2022; Hidayatun et al., 2025). Therefore, this study seeks to examine more thoroughly the context of the application of ice breaking so that the results can be more applicable and contextual.

This research offers novelty by examining the influence of ice breaking specifically in learning Islamic Religious Education at the high school level, which has not been widely explored.

In addition, this study will also examine the forms of ice-breaking used and analyse their relevance to the conditions of students in the field. With a quasi-experimental approach and a nonequivalent control group design, this study is expected to produce strong empirical evidence regarding the effectiveness of ice breaking in improving learning concentration. The urgency of this study is very high, considering that declining interest in learning and weak student concentration are still recurring problems in many schools. The results of this research can be used as a reference for teachers, principals, and curriculum developers in developing learning strategies that are more effective, fun, and oriented to student needs.

## **METHOD**

This type of research is quantitative research. This study uses a quasi-experimental design. This research is a pseudo-experimental study because the researcher cannot fully control the external variables that affect the implementation of the experiment (Maciejewski, 2020). The design used in this study is a nonequivalent control group design. Quasi-experimental research was chosen because the author wanted to apply an action or treatment. The treatment in question is ice-breaking activities. This is to determine the effect of the experiment's ice-breaking therapy on children's learning concentration. The description of quasi-experimental research is as follows.

**Table 1.** Research Design

<b>Class</b>	<b>Pre-test</b>	<b>Design</b>	<b>Post-test</b>
<b>Eksperiment</b>	$O_1$	X	$O_2$
<b>Control</b>	$O_3$	-	$O_4$

Information:

E = Experimental class

K = Control class

$O_1$  = Experimental class before being given pre-test treatment (questionnaire)

$O_2$  = Experimental class after being given post-test treatment (questionnaire)

$O_3$  = Control class before being given pre-test treatment (questionnaire)

X = Ice Breaking

This research was carried out from May 5 to June 10, 2024, and the research site was conducted at State High School 10 Pekanbaru, which is located on Jl. Bukit Barisan No.7, Tengkerang Tim Village, Tenayan Raya District, Pekanbaru City, Riau Province. The subjects in this study are

class X students of SMAN 10 Pekanbaru, with 412 children. The population is the entire source of research data. Population can be interpreted as a whole of elements in research, including objects and subjects with specific characteristics. The population in this study consists of all class X children, totalling 414 children from 10 classes at State Senior High School 10, Pekanbaru.

A sample is a part of the population's numbers and characteristics. The sample of this study is class X.1 as an experimental class and class X.3 as a control class, taken by purposive sampling (Campbell et al., 2020). The sample of this study amounted to 70 children, consisting of 35 children in the control class and 35 children in the experimental class. Data collection techniques use observation, questionnaires, and documentation. Data analysis is carried out after the data is obtained from the sample through the selected instrument. It will be used to answer the problem in the study or to test the hypothesis proposed through the presentation of the data. In this study, the researcher used quantitative data analysis with t-test statistics. The data analysed through the t-test is manifested in the form of numbers. This test was carried out with the help of the SPSS computer program version 23, an independent sample test. The T test is performed by looking at the alpha coefficient value of 5% (0.05) to decide whether to accept or reject.

The statistical hypothesis is as follows:

- H<sub>a</sub>: There was a significant difference in children's learning concentration between the control and experimental classes. In Islamic Religious Education at State Senior High School 10, Pekanbaru.
- H<sub>0</sub>: There was no significant difference in the concentration of children's learning between the control and experimental classes in Islamic Religious Education at State High School 10 Pekanbaru.

## FINDINGS AND DISCUSSION

### Findings

**Table 2.** Descriptive Statistics

Statistics												
N	Rang e	Minim um	Maxim um	Sum	Mean	Hours of deviati on	Varia nce	Skewness	Kurtosis			
Statis tic	Statis tic	Statisti c	Statisti c	Statis tic	Statis tic	St d. Error	Statis tic	Statis tic	Statis tic	Std. Erro r	Statis tic	Std. Erro r

<b>Pretest Experiment</b>	35	17	68	85	26 24	74, 97	,79 1	4,68 1	21,9 11	,17 8	,3 9	- ,69	,7 7
<b>Posttest Experiment</b>	35	24	68	92	28 07	80, 20	1,1 47	6,78 6	46,0 47	,05 8	,3 9	- 1,0	,7 7
<b>Pretest Control</b>	35	24	60	84	25 45	72, 71	1,0 66	6,30 4	39,7 39	- ,42	,3 9	- ,60	,7 7
<b>Posttest Control</b>	35	26	64	90	25 91	74, 03	1,0 61	6,27 5	39,3 82	,24 9	,3 9	- ,06	,7 7
<b>Valid N (list)</b>	35											8	8

The pretest results before using ice-breaking activities in the experimental group showed that the highest learning concentration questionnaire score in the Islamic Religious Education subject was 85, and the lowest was 68. The average calculation was 74.97. The results of the posttest were carried out after using ice-breaking activities. In the experimental group, the highest learning concentration questionnaire score in the Islamic Religious Education subject was 92, and the lowest was 68. The average calculation was 80.20.

The results of the pretest in the control group that did not use ice-breaking activities obtained the highest score of the study concentration questionnaire in the Islamic Religious Education subject, 84, and the lowest, 60. The average is 72.71. The posttest results in the control group obtained the highest learning concentration questionnaire score in the Islamic Religious Education subject of 90, and the lowest was 64. The average calculation is 74.03.

1. Normality Test

Table 3. Normality Test Results

	Class	Kolmogorov-Smirnova			Shapiro-Wilk		
		Statistic	df	Itself	Statistic	df	Itself
<b>Result</b>	Pretest Experiment	,142	35	,073	,953	35	,144
	Posttest Experiment	,141	35	,074	,952	35	,135
	Pretest Control	,110	35	,200*	,952	35	,132
	Posttest Control	,068	35	,200*	,972	35	,504
	<b>*. This is a lower bound of the true significance.</b>						
<b>a. Lilliefors Significance Correction</b>							

Based on the table 3 above, for all data of the experimental group and control class, as well as the pretest and posttest, the value of sig. Kolmogorov Smirnov and Shapiro-Wilk  $\geq 0.05$ . Because the research data is usually distributed, the research can be continued using parametric statistics.

## 2. Homogeneity Test

**Table 4.** Homogeneity Test Results

		Levene Statistic	df1	df2	Itself
<b>Result</b>	Based on the Mean	1,197	1	68	,278
	Based on the Median	,688	1	68	,410
	Based on Median and with adjusted df	,688	1	67,45 0	,410
	Based on the trimmed mean	1,171	1	68	,283

Based on the table 4 above, the value of sig. Based on the mean of 0.278 0.05, it can be concluded that the variances of the > Experimental post-test and control classes are the same or homogeneous. Then, one of the (not absolute) conditions of the independent sample t-test is met.

## 3. Hypothesis Test

The hypothesis test was used to calculate the correlation between variable X and Y using the t-test at a significant level of 5% (0.05). The hypothesis test in the study was carried out to determine the effect of ice-breaking activities on children's learning concentration in the subject of Islamic Religious Education at State High School 10 Pekanbaru. The test criterion is that. It is rejected.  $t_{\text{count}} > t_{\text{table}}$ .

The hypothesis test, including the normality and homogeneity tests, can be used after the prerequisite test. The hypothesis test used in this study is a parametric statistical test, namely the Paired Sample T-test. This test determines whether there is an average between two paired (related) sample groups. That means two samples, but getting two different treatments. The data used is usually on an interval or ratio scale. The paired t-test is one of the hypothesis test methods that uses non-free (paired) data. As for what is meant by non-free or paired data, namely, the object of research is subjected to two different treatments to produce two types of samples from the first and second treatments, or in other words, the data in the second sample is a change from the data of the first sample. In addition, pairing means that the data from the two samples have the same amount. This test uses the help of the SPSS version 23 program, and the data obtained is as follows.

**Table 5.** Uji Paired Sample T Test

		Mean	N	Hours of deviation	Std. Error Mean
<b>Pair 1</b>	Pretest_Experiment	74,97	35	4,681	,791
	Posttest_Experiment	80,20	35	6,786	1,147
<b>Pair 2</b>	Pretest_Control	72,71	35	6,304	1,066
	Posttest_Control	74,03	35	6,275	1,061

**Table 6.** Uji Paired Sample T Test

		Paired Differences				t	df	Sig. (2-tailed)	
		Mean Hours of deviation	Std. Error Mean	95% Confidence Interval of the Difference					
				Lower	Upper				
<b>Pair 1</b>	Pretest_Experiment	5,22	7,758	1,311	-	2,564	3,987	34	,000
	Posttest_Experiment	9			7,893				
<b>Pair 2</b>	Pretest_Control	1,31	2,576	,435	-	,430	3,019	34	,005
	Posttest_Control	4			2,199				

Value-based decision-making policy  $t_{count}$  and  $t_{table}$

If  $t_{count} > t_{table}$  Make it is rejected  $H_0$  and accepted  $H_a$

If  $t_{count} < t_{table}$  then accepted  $H_a$  and rejected  $H_0$

**Discussion**

Based on the table about the t-test (*paired sample t-test*) above, there is a difference between the results before and after being given *icebreakers*. The value is based on the degree of freedom (dk), the magnitude of which is N-1, which is 70-1= 69. The value of dk=69 at a significant level of 5% was obtained = 1.667. Based on the analysis of the t-test (paired sample t-test), it can be obtained that the result is greater than 3.987, 1.667 and Sig. (2-tailed) = 0.000 0.05, then rejected and accepted. So, it can be concluded that ice breaking significantly influences children's learning concentration in Islamic Religious Education subjects at State High School 10 Pekanbaru.

Based on the data analysis, it can be said that there is a difference in children's learning concentration between the control classes in the subject of Islamic Religious Education at State High School 10 Pekanbaru, which is evidenced by the difference in mean values. The mean post-test score of the experimental class was 80.20, while the control class was 74.03. Then, an effect size calculation was carried out to determine the influence of ice-breaking activity on children's concentration in Islamic Religious Education subjects. After the calculation, it can be concluded that the magnitude



of the impact of ice-breaking activities on children's learning concentration in Islamic Religious Education subjects at State High School 10 Pekanbaru is 0.670. In the interpretation table, Cohen's score is reasonably sufficient.

The results of this study show that ice-breaking significantly influences student learning concentration in Islamic Religious Education learning at State High School 10 Pekanbaru. This is evidenced by an increase in the average post-test score in the experimental group compared to the control group (80.20 vs. 74.03). This discovery aligns with the view that concentration is a source of mind power that can be increased through fun methods, such as ice breaking. *Ice breaking* creates a relaxed and fun atmosphere so that students are more focused and motivated in learning. In this context, the theory of learning motivation and student involvement is particularly relevant, where a conducive learning atmosphere can increase students' absorption and interest (Abdul Latip et al., 2024; Abidin, 2024; Akram & Li, 2024; Elhawwa, 2022).

Research has consistently shown that ice-breaking activities not only enhance students' learning motivation but also contribute significantly to improved overall learning outcomes, as these engaging exercises foster a sense of community and encourage active participation among peers (In'Ratnasari & Sholihah, 2023; Sugito, 2021). Previous research has shown that interactive learning methods can increase student engagement, primarily through uplifting activities such as yelling, games, or gestures (de la Hera Conde-Pumpido et al., 2018; Deliyannis & Kaimara, 2018; Ioannou, 2019; Sager et al., 2023). In this study, ice breaking was applied strategically at the beginning, core, and end of learning, adjusting to the needs of students and learning materials, thus significantly positively affecting student concentration. Therefore, the results of this study strengthen the theoretical foundation that activity-based learning methods can improve student focus and learning outcomes (Anwer, 2019; Nwosu et al., 2022; Sharma & Kumar, 2018; Tsai et al., 2020).

However, compared to previous research, this article provides uniqueness in applying ice breaking specifically in learning Islamic Religious Education, which has a content of values and ethics. This method helps students understand academic material and provides space to internalise religious values more deeply (Hanaris, 2023; Nurizka & Rahim, 2019). Teachers can create more meaningful learning by engaging students in relevant activities (Hanaris, 2023; Nurhamidah & Nurachadijat, 2023). This integration makes the results of this study contribute to the development of value-based pedagogy that has rarely been explored in previous studies.

Based on the results of the study using observation sheets about the procedure for ice activities and t-tests through questionnaire instruments on children's learning concentration in Islamic Religious Education subjects at State Senior High School 10 Pekanbaru, the conclusion was obtained that the results of 3.987 were greater than 1.667 (3.987 > 1.667) with a significance of 0.000 < 0.05, which means rejected and accepted. This proves that ice-breaking significantly influences children's learning concentration in Islamic Religious Education subjects at State High School 10 Pekanbaru. Based on the discussion of the results of this study, several suggestions were submitted by the next researcher that the results of this study should be used as a reference to conduct other similar research with different methods and analysis tools (Al-Farabih & Burga, 2023; Hanaris, 2023; Nurizka & Rahim, 2019; Tumangger et al., 2024). Then, there is also a need for an interview or open questionnaire aimed at related parties to get concrete arguments for the variables being studied.

## CONCLUSION

Based on the results of the research conducted through observation of the implementation of ice-breaking activities and filling out questionnaires regarding student learning concentration in Islamic Religious Education subjects at State High School 10 Pekanbaru, it can be concluded that ice-breaking has a significant influence on increasing student learning concentration. These findings show that applying icebreakers in the learning process can create a more enjoyable learning atmosphere, reduce boredom, and help students focus more actively and engage in learning activities. However, this study has limitations in quantitative approaches that lack in-depth exploration of students' subjective experiences and a limited scope to one school and one subject. Therefore, it is recommended that further research use qualitative approaches such as interviews or open questionnaires with students, teachers, and schools to explore a broader and deeper perspective regarding the effectiveness of ice breaking. In addition, it is also essential to consider the use of different analysis methods and instruments to obtain a more comprehensive picture of the effect of ice breaking on other learning variables.

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