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The Impact of The Auditory, Intellectually, Repetition (Air) Model on Social Studies Learning Outcomes

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Abstract

The objective of this study was to ascertain and describe the learning outcomes in the subject of Social Studies (IPS) after the implementation of the Auditory, Intellectually, Repetition (AIR) model in Grade IV at SDN 76 Palembang. The research methodology employed was experimental, utilizing a true experimental design with a pretest-posttest control group design. The research analysis revealed that the average pre-learning outcomes for students in the experimental group were 66.16, which improved significantly to 87.3 after the implementation of the Auditory, Intellectually, Repetition (AIR) model. In contrast, the average pre-learning outcomes for students in the control group were 65.34, with a modest increase to 69.22 after traditional teaching methods without the use of the AIR model. Statistical calculations yielded a calculated t-value (t-test) of 1.79, surpassing the critical t-value (t-table) of 1.67. Consequently, the null hypothesis (Ho) was rejected, and the alternative hypothesis (Ha) was accepted. This signifies that the implementation of the Auditory, Intellectually, Repetition (AIR) model led to improved student learning outcomes in the subject of IPS at SDN 76 Palembang.

Keywords: *Auditory Model, Intellectually, Repetition (AIR), Social Studies, Learning Outcome, Elementary School*

INTRODUCTION

Education plays a crucial role in the life of human beings, as it is an enduring element throughout one's existence. Every individual is entitled to education, regardless of their social status. An educated person undergoes positive transformation in their life, as education facilitates and fulfills their daily life needs. Education encompasses various activities aimed at planned and systematic self-improvement in the learning process, allowing learners to develop their potential optimally (Monawati & Yamin, 2016).

In accordance with Law No. 20 of 2003, Article 1, on the National Education System, education is a conscious and planned effort to create a learning environment and process that enables learners to actively develop their spiritual and religious strength, self-control, personality, intelligence, noble character, and the skills required for themselves, society, nation, and the state.

Education is an inseparable component of educational institutions, ranging from elementary schools to universities. At the elementary school level, students are taught to cultivate values such as mutual affection among peers, respect for both teachers and peers, social skills, and mutual assistance, both in the school and home environments. These values are imparted to elementary school students through the teaching of Social Studies (IPS).

IPS is a field of study that delves into the lives of humans, specifically their interactions within society and with their environment (Suhada, 2017). According to Susanto (2019), IPS is the study of social and human sciences to provide elementary and middle school students with profound insights and understanding. IPS encompasses subjects such as geography, history, economics, and sociology in elementary schools, making it an integrated subject that explores students' lives within their environment. The goal of IPS education is to help students comprehensively develop their abilities and insights related to

the social and human sciences (Susanto, 2019:151).

One crucial aspect in evaluating learning outcomes is the cognitive domain. In this context, learning outcomes serve as indicators of how well students understand the taught material after a specified learning period, typically measured through grading. However, school learning often encounters various challenges, one of which is low student performance in IPS. This aligns with data obtained from interviews with a Grade IV teacher at SDN 076 Palembang, indicating that students face difficulties comprehending the teaching material and lack active engagement in IPS. Therefore, it is imperative for teachers to take action to ensure active learning during the instructional process. Teachers can employ suitable teaching models to create enjoyable learning experiences, thereby increasing student interest in IPS.

According to Ade, Selegi, and Sukardi (2021), a teaching model is a plan devised by teachers to ensure that the learning objectives are met. Nafi'ah (2018) further explains that a teaching model is a structured plan used by teachers to deliver instructional content in the classroom. Trianto (2015) adds that a teaching model is a teacher's planning guide for the teaching process. Based on these expert opinions, it can be deduced that a teaching model comprises a sequence of activities or stages conducted by teachers during the instructional process.

One teaching model that can be utilized is the Auditory, Intellectually, Repetition (AIR) model. According to Shoimin (2014:29), the AIR teaching model stands for Auditory (learning through listening and speaking), Intellectual (learning through thinking), and Repetition (repeating content for better comprehension). Furthermore, Sitepu et al. (2020) state that the AIR teaching model emphasizes active, critical learning, prioritizing student engagement. Combining the insights from these experts, the AIR teaching model utilizes sensory perception, thinking abilities, and content repetition in the teaching and learning process to ensure students gain a deep understanding of the material being taught.

Based on the research conducted by Luthflana & Wahyuni (2019) on the application of the Auditory, Intellectually, Repetition (AIR) teaching model in mathematics, it can be concluded that the implementation of the AIR model significantly enhances the proficiency of Grade VIII.4 students in mathematics. In line with this, Manullang et al. (2020) found that the application of the AIR model improves student performance in IPS among Grade IV students. Similarly, Aryanthi et al. (2019) conducted research on the AIR model in IPS education, demonstrating that students' IPS performance can be enhanced through its application. Considering these findings, the AIR model appears to be an appropriate choice for IPS instruction, as it leads to improved student learning outcomes. Based on these considerations, the researcher conducted a study titled "The Auditory, Intellectually, Repetition (AIR) Model in IPS Education and Its Impact on the Learning Outcomes of Grade IV Students at SDN 76 Palembang."

RESEARCH METHODOLOGY

This research employs an experimental method utilizing a True Experimental Design with a specific type known as the pretest-posttest control group design.

Table 1
***Pretest-Posttest* Control Group Design**

Group	*Pretest*	Treatment	*Posttest*
Experiment	O_1	X	O_2
Control	O_3		O_4

The population in this study comprises all fourth-grade students of SDN 76 Palembang for the Academic Year 2020/2021, consisting of two classes with a total population of 59 students. The sampling technique employed in this research is simple random sampling, where classes, not individual students, were randomly selected. A drawing was conducted to determine the experimental and control classes. Based on the results of the random sampling via drawing, the sample consists of

30 students from Class IV.A of SDN 76 Palembang as the experimental group and 29 students from Class IV.B as the control group.

The data collection techniques employed in this study encompass both testing and documentation. For this research, a set of 15 multiple-choice questions was administered in both the pretest and posttest to students in both the experimental and control groups. Documentation, in this context, pertains to the photographic records of the researcher's activities during the research process and student data at SDN 76 Palembang.

The data analysis techniques employed in this research consist of three steps. Firstly, the normality test is conducted to determine whether the collected data follow a normal distribution. Secondly, the homogeneity test is applied to assess whether the two sets of data are homogenous. Lastly, hypothesis testing is carried out.

RESULTS AND DISCUSSION

The Auditory, Intellectually, Repetition (AIR) teaching model comprises three key aspects: auditory (listening), intellectual (thinking), and repetition (reinforcement). In the auditory phase, students engage in listening and speaking activities, requiring active listening to the teacher's explanations, active questioning, and responding to inquiries. During the intellectual phase, students are encouraged to think critically and solve problems presented by the teacher. Knowledge is constructed through group discussions, and students are expected to actively express their opinions. The repetition phase involves students revisiting and reinforcing the learned material, assessing their comprehension through quizzes or questions (Shoimin, 2014).

According to Shoimin (2014), the AIR teaching model is an acronym for auditory, intellectual, and repetition (AIR). Auditory learning involves listening and speaking, intellectual learning requires thinking skills, and repetition involves revisiting content to enhance understanding. Sitepu et al. (2020) emphasize that the AIR teaching model encourages students to become more active, critical, and focused on engagement in their learning. This model encompasses three aspects: auditory (developing problem-solving skills), intellectual (deepening comprehension through repetition), and repetition (reinforcement through assignments or quizzes).

The data collected by the researcher includes multiple-choice test instruments and documentation. The researcher assessed student learning outcomes using both pretest and posttest assessments in Grade IV.A and IV.B at SDN 76 Palembang. Additionally, documentation in the form of photographs was taken during the research process in both the experimental and control classes. The results in the frequency distribution tables of pretest and posttest scores for the experimental and control classes are as follows:

Table 2
Frequency Distribution of Pretest Scores in the Experimental Group

Interval Class	f	x	f.x	x^2	$f.x^2$
53-57	5	55	275	3025	15125
58-62	5	60	300	3600	18000
63-67	10	65	650	4225	42250
68-72	0	70	0	4900	0
73-77	8	75	600	5625	45000
78-82	2	80	160	6400	12800
Total	30	405	1985	27775	133175

(Source: Researcher, 2021)

Based on the frequency table of the learning outcomes of Grade IV.A students in the pretest, the frequency of scores within each class interval and the most frequent mid-range value falls within the range of 63-67, with a total of 10 students. The corresponding diagram illustrating this distribution can be depicted as follows:

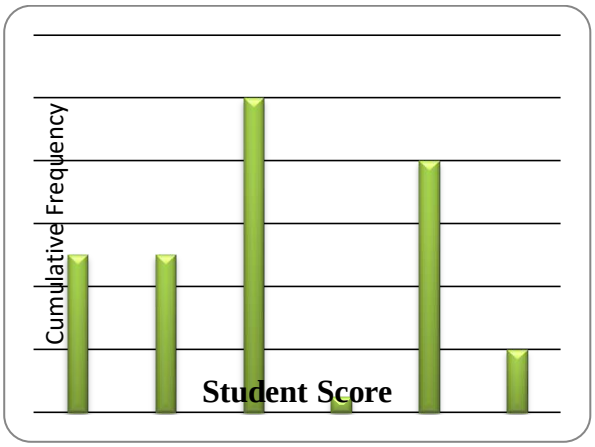

Figure 1.
Frequency Distribution of Pretest Scores in the Experimental Group

Hence, the obtained average is:

$$\underline{x} = \frac{\sum fX}{n}$$
$$= \frac{1985}{30}$$
$$= 66{,}16$$

Table 3
Frequency Distribution of Posttest Scores in the Experimental Group

Interval Class	f	x	f.x	x^2	f. x^2
73-78	3	75,5	226,5	5700,25	17100,75
79-84	9	81,5	733,5	6642,25	59780,25
85-90	8	87,5	700	7656,25	61250
91-96	6	93,5	561	8742,25	52453,5
97-102	4	99,5	398	9900,25	39601
Total	30	437,5	2619	38641,25	230185,5

(Source: Researcher, 2021)

Based on the frequency table of Grade IV.A students' learning outcomes in the posttest, the frequency of scores within each class interval reveals that the most frequent mid-range value falls within the range of 79-84, with a total of 9 students. The corresponding diagram representing this distribution can be illustrated as follows:

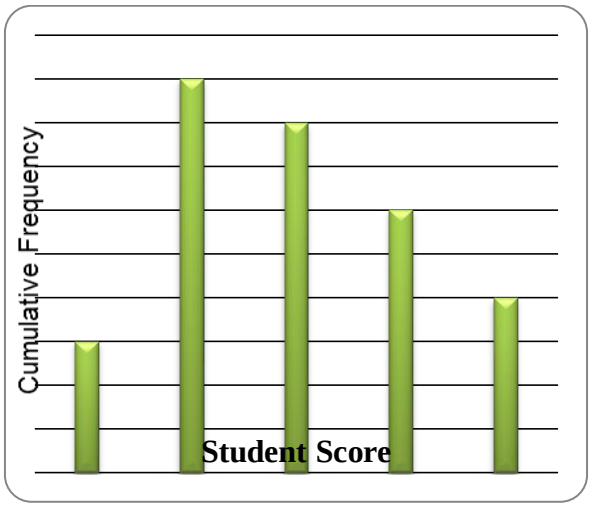

Figure 2.
Frequency Distribution of Posttest Scores in the Experimental Group

Hence, the obtained average is:

$$\underline{x} = \frac{\sum fX}{n}$$
$$= \frac{2619}{30}$$
$$= 87{,}3$$

Table 4
Frequency Distribution of Pretest Scores in the Control Group

Interval Class	f	x	f.x	x^2	f. x^2
53-57	3	55	165	3025	9075
58-62	8	60	480	3600	28800
63-67	11	65	715	4225	46475
68-72	0	70	0	4900	0
73-77	5	75	375	5625	28125
78-82	2	80	160	6400	12800
Total	29	405	1895	27775	125275

(Source: Researcher, 2021)

Based on the frequency table of Grade IV.B students' learning outcomes in the pretest, the frequency of scores within each class interval reveals that the most frequent mid-range value falls within the range of 63-67, with a total of 11 students. The corresponding diagram illustrating this distribution can be depicted as follows:

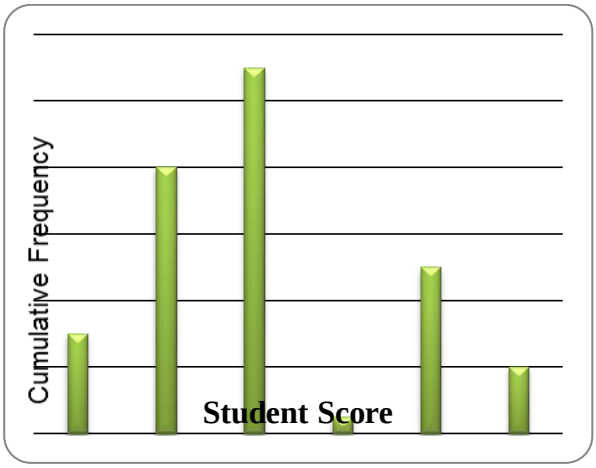

Figure 3.
Frequency Distribution of Pretest Scores in the Control Group

Hence, the obtained average is:

$$\underline{x} = \frac{\sum fX}{n}$$
$$= \frac{1895}{29}$$
$$= 65{,}34$$

Table 5
Frequency Distribution of Posttest Scores in the Control Group

Interval Class	f	x	f.x	x^2	f. x^2
46-51	2	48,5	97	2352,25	4704,5
52-57	0	54,5	0	2970,25	0
58-63	3	60,5	181,5	3660,25	10980,75
64-69	9	66,5	599,4	4435,56	39920,04
70-75	8	72,5	580	5256,25	42050
76-81	7	78,5	549,5	6162,25	43135,75
Total	29	381	2007,4	24836,81	140791,04

(Source: Researcher, 2021)

Based on the frequency table of Grade IV.B students' learning outcomes in the posttest, the frequency of scores within each class interval reveals that the most frequent mid-range value falls within the range of 64-69, with a total of 9 students. The corresponding diagram representing this distribution can be illustrated as follows:

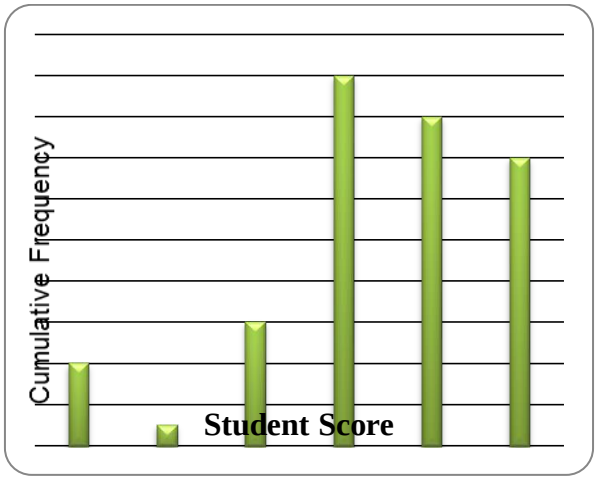

Figure 4.
Frequency Distribution of Posttest Scores in the Control Group

Hence, the obtained average is:

$$\underline{x} = \frac{\sum fX}{n}$$
$$= \frac{2007{,}4}{29}$$
$$= 69{,}22$$

Based on the research findings, the learning outcomes of students in the experimental group, where the average score in the pretest was 66.16, categorized as "satisfactory," and the average score in the posttest was 87.3, categorized as "excellent." In contrast, the control group had an average score of 65.34 in the pretest, categorized as "satisfactory," and an average score of 69.22 in the posttest, categorized as "poor." After the implementation of the Auditory, Intellectually, Repetition (AIR) teaching model in the subject of IPS for the experimental group, the students' learning outcomes improved, while the control group, which did not use the AIR model, still had low learning outcomes.

This finding is consistent with research conducted by Luthfiana and Wahyuni (2019) titled "The Application of the Auditory, Intellectually, Repetition (AIR) Teaching Model on Mathematics Learning Outcomes."

The study yielded an average pretest score of 22.15 and an average posttest score of 73.94, with a calculated t-value > t-table (2.821 > 1.699), indicating that students' mathematics learning outcomes significantly improved following the implementation of the Auditory, Intellectually, Repetition (AIR) teaching model. Similarly, another study conducted by Anwar and Sutisna (2019) titled "The Impact of the Auditory, Intellectually, Repetition (AIR) Cooperative Learning Model on Elementary School Student Learning Outcomes" found that the experimental group had higher posttest scores (average of 78.89) compared to the control group (average of 69.56) with a calculated t-value of 2.704 > t-table of 1.677, demonstrating that the experimental group's learning outcomes were better.

Prior research by Manullang et al. (2020) on "The Impact of the Auditory, Intellectually, Repetition Model on Learning Outcomes in Grade IV" also supported the effectiveness of the AIR model, with a calculated t-value > t-table (4.845 ≥ 1.710), confirming the acceptance of the alternative hypothesis. Additionally, research by Aryanthi et al. (2019) on "The Impact of AIR-Assisted Picture Media Learning Model on IPS Learning Outcomes" found that the experimental group's average posttest score was 24.3, whereas the control group had an average posttest score of 21.8. With a calculated t-value of 0.037 < t-table of 0.05, the null hypothesis was rejected, and the alternative hypothesis was accepted.

Based on the theoretical review and the research findings linked to relevant studies, it is increasingly evident that using the Auditory, Intellectually, Repetition (AIR) teaching model can enhance students' learning outcomes in the subject of IPS for Grade IV students at SDN 76 Palembang.

After collecting data from the pretest and posttest in both the experimental and control groups, the researcher proceeded to analyze the data using tests for normality, homogeneity, and hypothesis testing. The normality test was employed to determine whether the data followed a normal distribution, while the homogeneity test was conducted to assess whether the data sets were homogeneous.

The results of the normality tests for the pretest and posttest data in the experimental group were 0.29 and 0.62, respectively, while the normality tests for the pretest and posttest data in the control group were 0.27 and 0.17, respectively. Based on the results, data is considered normal if it falls within the range of (-1) to (1), indicating that both the pretest and posttest data are normally distributed. Following the normality tests, the researcher conducted homogeneity tests to determine if the data sets were homogeneous.

$$F = \frac{Varian\ terbesar}{Varian\ terkecil}$$
$$= \frac{6324}{51{,}66}$$
$$= 1{,}22$$

Based on the results, with an obtained F-value (F-test) of 1.22 and a critical F-value (F-table) of 1.91, it can be concluded that the obtained F-value (1.22) is less than the critical F-value (1.91), indicating that the samples are considered homogeneous. Subsequently, the researcher conducted hypothesis testing with a calculated t-value of 1.79 and a critical t-value (t-table) of 1.67. Based on the testing criteria, it is evident that the calculated t-value (1.79) is greater than the critical t-value (1.67), leading to the rejection of the null hypothesis (Ho) and the acceptance of the alternative hypothesis (Ha). In other words, the hypothesis states that the use of the Auditory, Intellectually, Repetition (AIR) teaching model leads to improved student learning outcomes in the subject of IPS for Grade IV students at SDN 76 Palembang.

CONCLUSION

Based on the analysis of the research data and the discussion regarding the Auditory, Intellectually, Repetition (AIR) teaching model in the subject of Social Studies (IPS) on the learning outcomes of Grade IV students at SDN 76 Palembang, it can be concluded that the Auditory, Intellectually, Repetition (AIR) teaching model can be effectively applied to Grade IV students at SDN 76 Palembang. This assertion is supported by the experimental group consisting of 30 students, where the average score in the pretest was 66.16, categorized as "satisfactory," and the average score in the posttest was 87.3, categorized as "excellent." These results indicate a significant improvement in student learning outcomes.

Furthermore, through a comprehensive analysis using a t-test, the obtained t-value was 1.79, while the critical t-value (t-table) was 1.67. Based on the testing criteria, it is evident that the calculated t-value (1.79) is greater than the critical t-value (1.67), leading to the acceptance of the alternative hypothesis (Ha) and the rejection of the null hypothesis (Ho). Therefore, it can be concluded that the implementation of the Auditory, Intellectually, Repetition (AIR) teaching model leads to improved student learning outcomes in the subject of IPS at SDN 76 Palembang.

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