The Effect of Word Square Learning Model on Elementary School Students' IPAS Learning Outcomes

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Abstract: This study aims to determine the effect of word square learning model on IPAS learning outcomes of fifth grade elementary school students of Lemahduhur II State Elementary School. This research is a type of quantitative research with a pre-experimental research design with a one group pretest-posttest model. The population used in this study were all students at SD Negeri Lemahduhur II as many as 194 students. The sample taken consisted of 25 students. The technique of collecting research data with Purposive Sampling. Technical data analysis to test the hypothesis was carried out by calculating descriptive and inferential statistics. The data was obtained from the pretest posttest results. The results of hypothesis testing, there is a significant difference between pretest and posttest. This is obtained by the sig value. (2-tailed) for the test is 0.000 <0.05 then H0 is rejected. So with this hypothesis test shows that there is a positive and significant influence between the word square learning models on the learning outcomes of IPAS elementary school students.

Keywords: Learning model; Learning outcomes; Word square

Introduction

Education is an ongoing teaching and learning process designed to train individuals to become more knowledgeable, creative and competitive (Rajammal, 2021). Education can be provided at various levels, from preschool to higher education. In addition to improving personality skills and personal habits, schools are also capable of improving human resources. As a society that is aware of the need for learning, we always face new challenges to improve the quality of education. In this case, learning refers to all activities that are arranged to support a learning process identified by changing one's behaviour in accordance with educational objectives (Pettersson, 2021; Rao, 2020). In line with Dewi et al. (2021), learning is a stage towards the right direction, from students who do not realize until the student realizes it. The process of teaching and growth is a very basic interaction. This shows that whether the learning target is achieved depends on the teacher's methodology.

The role of the teacher is very important to the needs of students in the learning process (Munna & Kalam, 2021). Besides having to master all subjects, teachers must also be smart in understanding the characteristics of each child. Educator or teacher is a noble profession. Not only that, behind his duties that must master the delivery of material, also has a great responsibility so that students always achieve their learning goals, although sometimes often encounter obstacles and curriculum demands in the educational process.

The curriculum from time to time often changes from the 2013 curriculum to the Merdeka curriculum. In the independent curriculum, there are many differences in terms such as learning implementation plans, now in the independent subjects, such as natural science which is combined with social science which is now IPAS. So that students can study nature and social life at the same time. The curriculum emphasizes project-based learning strategies, which means students practice what they have reviewed through projects and case studies,

allowing them to gain a deeper understanding of concepts. The basic provision of problem solving in IPAS learning will prepare a logical mentality (high interest, capacity to think fundamentally, systematically, and capacity to reach appropriate determinations). which results in proficiency in understanding lessons (Septiana & Winangun, 2023).

The overall learning process of IPAS at SD Negeri Lemahduhur II also does not facilitate student participation. Learning usually focuses on achieving curriculum material objectives, with the main focus on cognitive aspects. During learning, students are more silent, lacking enthusiasm, interest and understanding of IPAS subjects. The learning model used is less varied, learning activities have not been student-centered and are still guided by the standard model, only focusing on books, namely listening, recording, remembering, so it seems boring and causes students not to understand.

Therefore, to achieve the goals in IPAS learning, it is important to utilize the learning processes that support it (Gunawan et al., 2023). These processes include teachers who are ready to help students, supportive learning facilities, imaginative learning media or models can also liven up the classroom atmosphere to be more vibrant, thus making learning in the classroom less demanding or stressful but more fun. The utilization of materials, for example, learning media is very important considering the fact that without media, instructional communication will not occur in a two-way manner among students, teachers, and additional learning resources. In line with Alpian et al. (2019) that using a variety of varied learning models will increase student motivation when participating in the learning process while reducing the level of student boredom. So that efforts need to be made to solve these problems, the right learning model must be applied in order to improve student learning outcomes.

Based on this research, the use of word square model is based on students' mastery in understanding the topic, especially learning while playing to train students' ability to think fundamentally. The word square learning model is transformed into a typeface so that it is believed that the word square learning model really fosters all the abilities of each individual student in critical thinking in understanding the concept of IPAS.

Learning outcomes are an indicator to assess the extent to which students succeed in meeting predetermined targets or learning objectives. Learning outcomes are criteria for assessing the level of student achievement after they have learned (Prihatinia & Zainil, 2020). Theoretically, various factors can affect learning outcomes such as students' intellectual abilities, teacher quality, learning environment, student motivation, learning methods, learning models and family support. In the context of education, learning outcomes are generally measured through written assessments such as exams or tests. However, the measurement of learning outcomes is measured in various ways, including student attitudes (affective), competence (psychomotor), and understanding and knowledge (cognitive). According to Nurliza (2023) learning outcomes are the understanding of concepts in students, where students can know the content shown by the teacher and can explain the material correctly and thoroughly.

Therefore, the researcher said that the indicator of student learning outcomes is when students can repeat back the explanation of the topic by the teacher, give examples, and classify it, and assess how far students have succeeded in meeting the specified learning objectives. In connection with the explanation above, it can be seen that the indicators of learning success are arranged based on Bloom's taxonomy classification, which is centered on cognitive domain learning outcomes which include knowledge or remembering, understanding, applying, analyzing, evaluating, and creating. So it can be seen from how students learn with supporting facilities, the use of additions such as media and learning models, the appearance of teaching teachers when in class. There must be an effort to overcome this problem by making learning activities and student learning objectives by using an appropriate learning model.

The findings from the field are that teachers have strategies in finding learning that is not boring by combining science and social studies learning in each semester. Students can learn independently in science and social studies lessons by doing things such as working in groups, students can advance freely, thus creating opportunities to develop. Similarly, the teachers are creative, they design interesting lessons to make learning fun for students. This can be seen when IPAS is taught using the word square approach. The implementation of IPAS learning is done clearly, and also in this independent curriculum, learning is very broad, so that during learning students are encouraged to work in groups (Sugih et al., 2023).

The learning model is a series of plans used in compiling the curriculum, compiling teaching materials, directing teachers in teaching settings and others, and assessing learning outcomes (Nisdar & Yanti, 2020). The learning model is a model that helps improve the learning process, one of the models developed from the lecture approach is word square. Word square strongly emphasizes the active participation and involvement of students in the learning process. In addition, this approach integrates the ability to combine matching answers with answer boxes. According to Kurniasih et al. (2017) Word square is a learning model that resembles a crossword puzzle used as a means to

provide learning material to students during the teaching and learning process. Thus, the creation of a square box is the main media used to convey the material being taught (Harahap, 2019).

Word square is made up of two words: word which means word and square which means square field or square box (Jessy, 2013; Musyafaroh, 2022). So it is concluded that a word square is a square box that contains a set of words. The words contained in the square box are randomly arranged, or the equivalent of a crossword puzzle where the answer in the square box is hidden by random words. The difference is that the answer is already there and is made less visible with additional text as a distraction. This learning model relies on the accuracy of students, where in this learning model students are asked to match the letters given in the answer box, which has been arranged into the right word. Because in the answer box there are different letters that are used as tricky answers for students. In this learning model there are a lot of letters that are not used, but the purpose is to distract, rather than cause difficulties for students. This model can also be considered a learning through play model, as in this model, learning happens while playing. However, the learning is more dominant than the playing. Learning through play can have a good impact on students, along with changes in attitude, behaviour and opportunities to develop (Rohmah, 2023).

As with other learning models, the word square learning model has advantages and disadvantages. The following are some of the positive impacts of the word square learning model: fostering students' understanding of the lesson; Familiarize discipline; can prepare a meticulous attitude and critical and analytical thinking; invites students to think well, can empower and build students on the material introduced; and hone foresight and accuracy when taking notes and finding answers on worksheets.

Meanwhile, the word square learning model according to Abidin et al. (2021) has weaknesses including: the material has been organized or coordinated by the teacher, in the long run this can limit students' imagination; students only get ready-made material without being expected to be required to explore various existing sources; and students cannot fully utilize the potential or capabilities of currently available materials.

The uniqueness of the word square model that can be used for all lessons. Learning through play also has a positive impact on students because it brings changes to their attitudes, behaviours, and experiences in learning activities. This word square model is able to help students understand the material because students gather information themselves and the teacher's role is only limited as a facilitator. In addition, in word square

learning, there are word square worksheets equipped with questions and students answer these questions located in random letter boxes. The purpose of this worksheet is to measure how well students understand the subjects presented, so they have to find words or sentences that match the random letters. As a result, students must be careful and thorough when looking for answers. Students will not be bored learning with word square sheets. Instead, it will create a fun situation because students can learn while playing and practice discipline. If the learning process is fun and encourages them to think critically, then students' interest and learning outcomes can improve.

In addition, the word square learning method has characteristics including: can empower and build students' understanding in interpreting the material presented; Practice accuracy and accuracy in recording and finding answers on worksheets; Motivate students to reflect on which answer is the best; as one of the learning resources/educational media in the form of word boxes with different letter combinations; and invite students to pay attention to an image combined with a word square worksheet (Suryani, 2019).

According Prihardini (2018) explains that the procedures or steps of word square learning include: choose material based on concepts (ideas) or sub-ideas; write down keywords according to the desired results; rewrite the keywords and start with the longest word; create word square boxes; and fill in the keywords in the word square boxes.

As for technically, according to Suryani (2019) the word square learning model can be implemented as follows: the teacher provides content based on the learning objectives of the content; the teacher provides activity sheets according to the guidelines; after asking students to answer the questions, continue shading the letters in the box based on the answer in an upward, sideways or oblique direction; and rate each answer in the box.

Method

This research is quantitative research with an experimental approach. Sugiyono (2022) states that this quantitative approach is based on positivism, hence known as the positivistic method. Because it meets the criteria of the scientific method, namely objective, measurable, rational, methodical, and real or empirical. This method can be used to generate new ideas and is therefore considered scientific. In addition, this method is also known as the discovery method.

This research design is Pre-Exsperimental Design with One group pretest and posttest model. The test was used to test the experimental class (pretest) before the research was conducted. The purpose was to determine

the understanding and average ability of students. Furthermore, the word square learning model was applied to the experimental class. The word square learning model is the independent variable in this study, and IPAS learning outcomes are the dependent variable. This study requires one class, namely class V B, where the class will be treated using the word square learning model. In the final stage, the experimental class was given a posttest with the aim of ensuring that the pretest posttest had a difference.
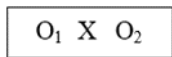
$$O_1 \quad X \quad O_2$$

Figure 1. One group pretest posttest design

Description:
O1 = Pretest Score
X = Treatment (Use of Word Square Learning Model)
O2 = Posttest Value.

Population is the total number of objects from a group of people or objects that have certain characteristics, numbers and characteristics, which are analyzed by researchers to make conclusions. The population in this study were all 194 students at SDN Lemahduhur II, in the 2023-2024 academic year in Tempuran District. Class V B, consisting of 25 students, was used as the sample. Most of the sample was taken from the population. The sampling technique used is known as purposive sampling, which indicates that the researcher deliberately chooses a technique that is not random, but rather a technique that is selected according to the research objectives and predetermined criteria.

Result and Discussion

Descriptive data on the results of students' pretest posttest scores with a total of 25 students were calculated with the help of SPSS v.25. The following descriptive statistical results of students' pretest and posttest are shown in the Table 1.

Table 1. Descriptive Statistical Results of Students' Pretest and Posttest

Parameters	N	Minimum	Maximum	Mean	Std. Deviation
Pretest Experiment	25	45.00	85.00	62.6000	10.0124
Posttest Experiment	25	60.00	100.00	77.0000	10.8012
Valid N (listwise)	25				

Descriptive statistical results for pretest results, student IPAS learning outcomes that the maximum value is 85.00 and the minimum pretest value is 45.00, with a mean of 62.6000 and a std. deviation of 10.01249. The descriptive statistical results of the posttest results of student IPAS learning outcomes that the maximum value is 100.00 and the smallest posttest value is 60.00 with a mean of 77.0000 and a std. deviation of 10.80123. Based on this data, it shows that there is an increase in the pretest results after the treatment is carried out with the use of the word square learning model on the IPAS learning outcomes of elementary school students with the material of my area of pride.

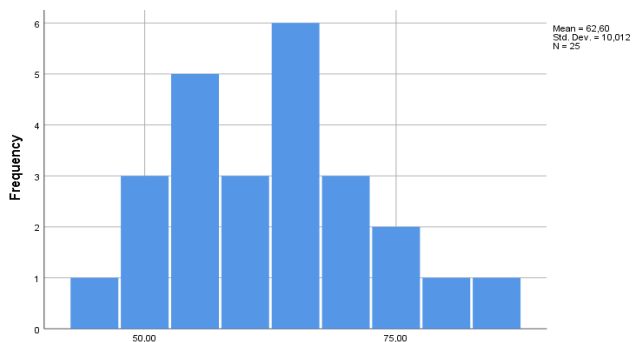Based on the table, the pretest and posttest values can be made as follows:

Students with a score of 45 were identified as one person, students with a score of 50 were three people, students with a score of 55 were five people, students with a score of 60 were three people, students with a score of 65 were six people, students with a score of 70 were three people, students with a score of 75 were two people, students with a score of 80 were one person, and students.
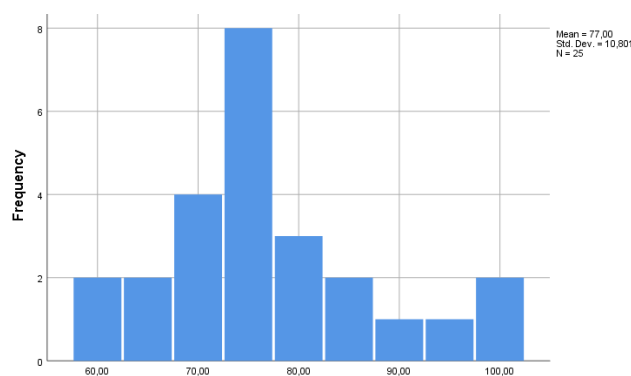

Figure 3. Posttest result of experiment class

Based on the posttest graph, it can be seen that: Students who scored 60 were two, who scored 65 were two, who scored 70 were four, who scored 75 were eight, who scored 80 were three, who scored 85 were two, who

Figure 2. Pretest result of experiment class

scored 90 were one, who scored 95 were one, and who scored 100 were two.

It can be concluded from the table from the calculation of the pretest results and the posttest results of the IPAS Learning Outcomes that the mean posttest value (77.0000) is superior to the pretest value (62.6000), meaning that there is an increase in IPAS learning outcomes after treatment using the word square learning model.

For data analysis requirements, quantitative data from pretest test results conducted before the application of the word square learning model while the posttest is conducted after the application of the model. By using a multiple choice question instrument of 20 questions about cultural heritage material, inter-regional economic activity, and regional superior products. Pretest and posttest data are used to measure the effect of the word square learning model on the learning outcomes of IPAS elementary school students.

The normality test carried out is the Shapiro Wilk test with a level of 0.05.

Table 2. The Results of the Normality Test

Test	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Pretest Experiment	0.136	25	0.200*	0.965	25	0.533
Posttest Experiment	0.213	25	0.005	0.926	25	0.070

*. This is a lower bound of the true significance.
a. Lilliefors Significance Correction

Based on the table above, it shows the Sig value> 0.05, then H0 is accepted (normally distributed), on the other hand, if the Sig value is <0.05 or the significance is smaller than 5%, then H1 (not normally distributed). The pretest results have a significance of 0.533. By looking at the fact that the significance of 0.533 > 0.05, this indicates that the data is normally distributed. Likewise, the posttest results have a significance value of 0.070 on the grounds that the significance value of 0.070 > 0.05, this indicates that the data is normally distributed.

Table 3. Test Homogeneity of Variances

Variable	Levene Statistic	df1	df2	Sig
Based on Mean	0.001	1	48	0.971
Based on Median	0.040	1	48	0.843
Based on Median and with adjusted df	0.040	1	45.97	0.843
Based on trimmed mean	0.000	1	48	0.982

Based on the table above regarding the results of the data homogeneity test, it can be seen that the results of the calculation of the homogeneity test of the pretest and posttest data show that the significance level based on the mean is 0.971, this shows that the significance level is 0.971> 0.05. So that it proves that the data has the same variance or homogeneous.

Furthermore, to find out how the effect of the word square learning model on IPAS learning outcomes, hypothesis testing was carried out. Hypothesis testing in this study used the t-test, namely the Paired sample test through the help of SPSS Version 25. Is there a difference before treatment and after treatment.

Table 4. Paired Samples Test

Test	Mean	Std. Deviation	Std. Error Mean	Paired Differences 95% Confidence Interval of the Difference		t	df	Sig. (2-tailed)
				Lower	Upper			
Pretest Experiment - Posttest Experiment	-14.40000	5.46199	1.09240	-16.65460	-12.14540	-13.182	24	0.000

Based on the paired samples test table, the sig value. (2-tailed) for the test is 0.000 <0.05 then H0 is rejected. This implies that the results of the hypothesis test show that there is a positive and significant influence between the word square learning model on the learning outcomes of IPAS elementary school students. The implementation of the word square learning model seems to have an effect on the learning process, especially IPAS learning outcomes. This is shown from the results of descriptive statistics which show an increase in IPAS learning outcomes in the use of word square learning models that can be compared from the results of the pretest and postest in the test.

The results of the pretest Normality Test show a significance value of 0.533> 0.05 and a posttest significance value of 0.070> 0.05, this indicates that the information distributed is generally normally distributed. The results of the pretest, posttest homogeneity test show that the significance level seen from the based on mean is 0.971, this shows that the significance value is 0.971> 0.05. This proves that the data has a variant or homogeneous. After that, it is shown by calculating the results of the hypothesis test analysis using the t-test on the paired sample test formula for the SPSS Version 25 program. (2-tailed) is 0.000 <0.05, so H0 is not accepted. And this is the result of the instrument hypothesis test as a whole affects the learning outcomes of IPAS and has a significant effect on the results of the pretest and posttest.

It is also reinforced by the results of research that has been done before, including Zagoto (2022) stating that the results of his research show that the use of the word square learning model has an effect on learning outcomes. Meanwhile, in research (Khairunnisa & Supriansyah, 2022). Learning outcomes using the words Square model show better learning completeness than before using the word square model (Nugroho & Rahayu, 2013). It can be seen that the positive impact according to Herwandannu (2018) the advantage of the word square model is that this model can be used for all learning materials. In addition, the positive impacts of using word square include: fostering students' understanding of the lesson; getting used to discipline; can prepare a meticulous attitude and critical and analytical thinking; invites students to think well, can empower and build students on the material introduced; and hone foresight and accuracy when recording and finding answers on worksheets.

Based on the observations of researchers in the field on the word square learning model, researchers found changes and improvements in students. Students look enthusiastic during learning, students learn more and better understand what they are doing. This learning model fosters student activeness, and trains students to think critically, the teacher is only a facilitator.

Conclusion

IPAS learning outcomes are known that the maximum value is 85.00 and the minimum pretest value is 45.00, with a mean of 62.6000. As for the descriptive statistical results of the posttest results of students' IPAS learning outcomes, the maximum value is 100.00 and the smallest posttest value is 60.00 with a mean of 77.0000. Based on this data, it shows that there is an increase in the pretest results after the treatment is carried out with the word square learning model on the IPAS learning outcomes of elementary school students with cultural heritage material, inter-regional economic activities and regional superior products. Meanwhile, based on the table above, the sig. (2-tailed) value for the test is 0.000> 0.05 so that H0 is rejected. Which means the overall hypothesis test results affect the learning outcomes of IPAS, and have a significant effect on the use of the word square learning model. As shown above, H0 is rejected because the 2-tailed sig value is 0.000 > 0.05. This indicates that when the word square learning model is used, the overall effect of the hypothesis testing has an effect on the IPAS learning objectives.

Conflict of interest
The authors declare no conflict of interest.

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