



The Implementation of the Learning Starts with a Question (LSQ) Method on Students' Learning Outcomes in Fifth Grade Natural Science

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ABSTRACT

This research uses a pre-experimental research method to examine the application of the Learning Starts With a Question (LSQ) learning method to science subjects in class V UPT SDN 40 Bangkala Maccini Baji, Jeneponto Regency. The LSQ method aims to increase students' active participation in learning by encouraging them to ask questions and think critically from the start of the learning process. The research results show that the application of the LSQ method has a positive impact on students' understanding and learning outcomes in science subjects. Based on research findings, several recommendations were submitted to schools, teachers and researchers. Schools are expected to support the wider application of the LSQ method by providing training for teachers and creating a conducive learning environment. Teachers are advised to continue developing skills in implementing LSQ by adapting learning strategies according to student needs and encouraging an interactive learning atmosphere. In addition, further research is recommended to explore other variables that can influence the effectiveness of LSQ and examine its application in different subjects and educational levels.

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INTRODUCTION

The world has entered the 21st century, an era characterized by the rapid development of various fields of knowledge, including technology across multiple aspects of life, such as education. According to the Ministry of Education and Culture (Kemendikbud), the hallmarks of the 21st century include the availability of information anytime and anywhere (information), the implementation of machine use (computing), the ability to handle routine tasks (automation), and the capacity to work from anywhere to anywhere (communication) (Sajidan et al., 2018: 7-8).

The educational process has undergone significant developments, both in terms of the facilities used and the learning processes conducted by teachers. Education plays a crucial role in the development of individuals and society (Nurlina, N., & Bahri, A., 2021). The progress of a society can be seen from the advancement of its education system. This is clearly reflected in the goals of National Education as stipulated in Law No. 20 of 2003, particularly Article 3, which states that National Education functions to develop capabilities and form a dignified national character and civilization, aimed at fostering students' potential to become individuals who are faithful and devoted to God Almighty, possess noble character, are healthy, knowledgeable, capable, creative, independent, and become democratic and

responsible citizens. Education is expected to enhance and develop students' abilities. According to the author, to achieve a nation's educational success, formal education processes must be implemented through learning activities at every educational level and across all subject areas.

Science is one of the compulsory subjects that students need to learn, considering that science addresses phenomena in nature, helping students solve simple problems related to objects and events in their environment. Science is derived from the English term "natural science." Literally, "science" means knowledge, and it refers to scientific knowledge (Farida, 2016: 4).

According to the researcher, science learning is essential to be introduced from basic education levels because this stage is the most appropriate to develop students' knowledge, values, attitudes, and skills concerning nature, the surrounding environment, and themselves. It helps students solve various problems they might encounter in their environment, thus allowing them to grow into good individuals who understand and comprehend the phenomena they observe.

Initial observation findings regarding the learning process revealed that the methods used by teachers in teaching science were less innovative, with teachers mostly employing lecture methods, demonstrations, routine tasks, and practice exercises. This approach led students to focus merely on listening to the teacher's explanations, thereby reducing their curiosity. Additionally, the learning process was teacher-centered. Given this phenomenon, there is a need to improve the science learning process to enhance students' success in achieving quality science education in line with educational objectives. Several aspects need attention from teachers in conducting the learning process, one of which is the use of appropriate learning methods to ensure that the information conveyed is well-received and understood by students, making the learning process more efficient.

Teachers must strive to create a learning environment that encourages students to learn or provides them with opportunities to actively construct the concepts they are studying (Nasrah, A. M., & Muafiah, A., 2020). From this perspective, it is evident that the chosen teaching method can influence students' learning outcomes. In this research, the researcher applies the Learning Starts With a Question (LSQ) method to assess its impact on students' learning outcomes and behavior changes, focusing on fostering active participation and curiosity in the learning process.

The Learning Starts With a Question (LSQ) method is a simple approach that can be applied in everyday learning situations and provides a framework for two-way communication between teachers and students, thereby motivating students to reach the core of learning, which is questioning. Questioning is a verbal expression to solicit a response, which can range from factual knowledge to deeper reflections. Therefore, questioning is an effective stimulus-response that encourages critical thinking skills. A person's quality of life is determined by the quality of their questions—the more progressive the question, the more successful the person in navigating life. Questioning is an integral part of the learning process to enhance the quality of learning processes and outcomes (Wandri, 2021:17).

Research on the Effect of the Learning Starts With a Question Method on Science Learning Outcomes by Lisa et al. (2023) was motivated by the low science learning outcomes in elementary schools, attributed to ineffective teaching methods. The LSQ method encourages students to engage in independent learning by formulating questions based on the teacher's reading, thereby increasing their engagement and comprehension. Students' readiness to participate in class is also influenced by the method applied by the teacher. Therefore, LSQ can be a solution to improve science learning outcomes.

Research conducted by Mulya (2021) found differences in students' learning activeness between those taught using the LSQ method and those using conventional methods. Students who learned using LSQ demonstrated higher activeness compared to those taught with conventional methods. Similarly, Diniati et al. (2022), whose research aimed to improve learning outcomes, found that the LSQ method can enhance students' learning outcomes, although it requires several meeting cycles to ensure the method and learning are effective.

Novita et al. (2022) in their research concluded that the application of the LSQ learning method has a significant impact on students' learning outcomes in Social Studies for fourth-grade elementary students, despite the teacher-centered learning background that negatively affected students' learning outcomes and engagement.

Preliminary studies showed that in the topic of the human body, some students remained passive and did not fully understand the teacher's explanations. This was evident from the average score, which was still below the minimum passing grade (KKM), at 7.0. Out of 15 students, only 6 achieved scores meeting the KKM, while 9 students scored below the standard. Factors suspected to contribute to this problem include students' lack of attention during lessons, the dominance of lecture methods, an uncondusive classroom environment, and the lack of guidebooks to help students understand the material. Considering that science is a subject closely related to daily life, more effective strategies are needed to improve students' learning outcomes. One such strategy is the LSQ method, which encourages students to actively ask questions and think critically in understanding concepts. Although the LSQ method has been widely studied in previous research, this study remains necessary due to differences in subject matter, learning conditions, school environments, and curriculum developments that affect learning outcomes. Therefore, this research is expected to provide more accurate, relevant, and beneficial results in improving the quality of education, particularly in science learning.

METHOD

This research employed a pre-experimental method to examine the application of the Learning Starts With a Question (LSQ) method in science learning for fifth-grade students at UPT SDN 40 Bangkala Maccini Baji, Jeneponto Regency. The research design used was the One-Group Pretest-Posttest Design, involving a single group of students. Prior to the intervention, students took a pretest to assess their initial understanding. Following the implementation of the LSQ method, they completed a posttest to measure changes in learning outcomes. The results of both tests were compared to determine the effectiveness of the applied method.

The study involved all 15 students in the fifth grade, consisting of 10 male and 5 female students. All students were included as the research sample (saturated sample), with the LSQ method as the independent variable and the improvement of science learning outcomes as the dependent variable. The LSQ method was applied to encourage students to actively ask questions before the material was presented, thus enhancing their understanding. The research instrument consisted of multiple-choice tests administered before and after the implementation of the LSQ method. Data were collected through observation and testing, where observations were conducted to understand the students' initial conditions, while pretests and posttests were used to measure the improvement in learning outcomes (Huwaida, H., 2019).

Data analysis was conducted using quantitative descriptive statistics, comparing pretest and posttest scores to identify the increase in students' understanding. The N-Gain test was used to measure the effectiveness of the LSQ method, categorized as high (≥ 0.70), medium (0.30–0.70), low (0.00–0.30), or negative (< 0.00). The effectiveness of the method was also analyzed based on the percentage increase in learning

outcomes, classified as very effective (> 76%), moderately effective (56–75%), less effective (40–55%), and ineffective (< 40%). Through this method, the research is expected to provide a clear picture of the effectiveness of the LSQ method in improving science learning outcomes for fifth-grade students at UPT SDN 40 Bangkala Maccini Baji.

RESULTS AND DISCUSSION

Based on the descriptive statistical analysis, there was a significant difference between the students' average pretest and posttest scores. The pretest average score reflected the students' initial understanding, which tended to be varied, while the posttest average score showed a significant improvement after the learning process. Moreover, the distribution of posttest scores, which mostly fell within the high category, indicated that the LSQ method successfully improved students' learning outcomes evenly. This descriptive statistical analysis not only provided quantitative data but also strengthened the evidence that the LSQ method was effective in enhancing the quality of science learning in the fifth grade.

Table 1 Descriptive Statistical Analysis of Pretest and Posttest Scores

		Descriptive Statistics	
		Posttest	Pretest
N	Statistic	15	15
Range	Statistic	45	45
Minimum	Statistic	55	50
Maximum	Statistic	100	95
Sum	Statistic	1395	1145
Mean	Statistic	93	76.3333
	Std. Error	3.03942	4.2389
Std. Deviation	Statistic	11.77164	16.41718

The data analysis results showed a significant increase in students' learning outcomes after the application of the LSQ method. Of the 15 students involved, the pretest average score was 76.33, with a minimum of 50 and a maximum of 95, and a standard deviation of 16.42, indicating a high variation in initial understanding. After the application of the LSQ method, the posttest average score increased to 93, with a minimum of 55 and a maximum of 100, and a smaller standard deviation of 11.77. This demonstrated that, in addition to improving learning outcomes, the LSQ method also resulted in a more uniform understanding among students, proving its effectiveness in facilitating better comprehension of the subject matter.

a. Minimum Mastery Criteria (MMC) Description

Basic education plays a crucial role in developing students' knowledge and skills, particularly in science subjects that help them understand scientific concepts and think critically. At UPT SD Negeri 40 Bangkala Maccini Baji, Jeneponto Regency, the LSQ method was applied to improve students' learning outcomes. This method encourages students to think critically and actively seek answers through questioning as an initial step in learning, thus fostering their curiosity and participation. This study aimed to examine the influence of the LSQ method on fifth-grade students' learning outcomes by comparing the results before and after its implementation. Data were analyzed using a

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 quantitative approach with descriptive statistics to observe the improvement in students' understanding. The results indicated that the LSQ method was effective in significantly improving students' learning outcomes.

Table 2 School Minimum Mastery Criteria (MMC) Categories

No.	Skor	Kategori
1	$90 \leq X \leq 100$	Sangat Tinggi
2	$80 \leq X < 90$	Tinggi
3	$70 \leq X < 80$	Sedang
4	$55 \leq X < 70$	Rendah
5	$0 \leq X < 55$	Sangat Rendah

A student is considered to have achieved mastery if they meet the school's MMC, which is set at 70. Furthermore, class-wide mastery is considered achieved if at least 80% of the students obtain a minimum score of 70.

b. Students' Pretest Learning Outcomes

The analysis of students' responses in science learning before the application of the LSQ method (using conventional methods) can be seen in the table below:

Table 3 Pretest Score Frequency Distribution

No	Interval	Hasil Belajar	
		Frekuensi	%
1	50-58	3	20.00%
2	59-67	1	6.67%
3	68-76	3	20.00%
4	77-85	3	20.00%
5	86-94	3	20.00%
6	95-103	2	13.33%

Based on the pretest learning outcome data, there were six score intervals that represented the distribution of students' frequencies. In the score interval of 50-58, there were 3 students who achieved this range, accounting for 20.00% of the total. In the next interval, 59-67, only 1 student fell into this range, representing 6.67%. The score interval of 68-76 was achieved by 3 students, contributing 20.00% of the total students.

Furthermore, 3 students (20.00%) scored within the 77-85 interval, while the 86-94 interval also included the same number of students, namely 3 students or 20.00%. The final score interval, 95-103, was occupied by 2 students, representing 13.33%. This distribution indicates that the majority of students achieved scores within relatively similar ranges, except for the 59-67 interval, which had the fewest number of students.

Table 4 Pretest Mastery Category Description

No	Skor	Kategori	Frekuensi	Persentase
1	$0 \leq X < 55$	Sangat rendah	3	20.00%
2	$55 \leq X < 70$	Rendah	1	6.67%
3	$70 \leq X < 80$	Sedang	4	26.67%

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4	$80 \leq X < 90$	Tinggi	5	33.33%
5	$90 \leq X \leq 100$	Sangat tinggi	2	13.33%

Based on the provided table, the students' scores can be classified into several categories according to the Minimum Mastery Criteria (MMC) of 70%. From the table, 33.33% of students fell into the "High" category ($80 \leq X < 90$), indicating that they successfully exceeded the MMC with fairly good scores. The majority of students (26.67%) were in the "Moderate" category ($70 \leq X < 80$), meaning they were at the expected mastery threshold. Meanwhile, around 20% of students scored in the "Very Low" category ($0 \leq X < 55$), indicating significant challenges in reaching the MMC.

In comparison, the "Very High" category ($90 \leq X \leq 100$) was occupied by 13.33% of students, while only a few students, 6.67%, fell into the "Low" category ($55 \leq X < 70$). Overall, the percentage of students who did not meet the MMC (those in the "Very Low" and "Low" categories) was 26.67%, while the remaining students could be considered to have achieved or exceeded the MMC, with most falling into the "Moderate" and "High" categories. This indicates that the majority of students were on the expected track, although there is still room for improvement, particularly for those in the lower categories.

c. Posttest of Students' Learning Outcomes

The analysis of students' responses after the application of the LSQ method is shown below:

Table 5 Posttest Score Frequency Distribution

No	Interval	Hasil Belajar	
		Frekuensi	%
1	55-63	1	6.67%
2	64-72	0	0.00%
3	73-81	0	0.00%
4	82-90	3	20.00%
5	91-99	4	26.67%
6	100-108	7	46.67%

The posttest table of science learning outcomes for fifth-grade students at UPT SD Negeri 40 Bangkala, which implemented the Learning Starts with a Question method, shows the distribution of students' learning outcomes based on score intervals. In the 55-63 interval, only 1 student achieved a score within this range, accounting for 6.67% of the total students. There were no students who scored within the 64-72 and 73-81 intervals, indicating that no students obtained scores in these lower ranges. This suggests that the majority of students did not fall into the lower score categories.

Conversely, in the 82-90 interval, there were 3 students or 20% who achieved fairly good scores, while in the 91-99 interval, 4 students or 26.67% obtained higher scores. At the peak, in the 100-108 interval, 7 students or 46.67% achieved very high

scores, indicating that nearly half of the students were able to achieve excellent learning outcomes after the application of this method. Thus, it can be concluded that most students demonstrated good to excellent results, reflecting the effectiveness of the Learning Starts with a Question method in improving students' learning outcomes.

Table 6 Posttest Mastery Category Description

No	Skor	Kategori	Frekuensi	Persentase
1	$0 \leq X < 55$	Sangat rendah	1	6.67%
2	$55 \leq X < 70$	Rendah	0	0.00%
3	$70 \leq X < 80$	Sedang	0	0.00%
4	$80 \leq X < 90$	Tinggi	3	20.00%
5	$90 \leq X \leq 100$	Sangat tinggi	11	73.33%

The provided table shows the posttest science learning outcomes of fifth-grade students using the Learning Starts with a Question method, based on the minimum mastery criteria (KKM) of 70%. From the table, it can be seen that the majority of students (73.33%) fall into the "Very High" category ($90 \leq X \leq 100$), indicating that they achieved excellent results and exceeded the established KKM threshold. Meanwhile, 20% of students are in the "High" category ($80 \leq X < 90$), which also demonstrates that they achieved good results.

However, only 6.67% of students are in the "Very Low" category ($0 \leq X < 55$), indicating that only a few students did not reach the KKM. Furthermore, there were no students in the "Low" ($55 \leq X < 70$) or "Medium" ($70 \leq X < 80$) categories. This shows that the majority of students were able to understand the material well and meet or exceed the KKM standard, indicating the effectiveness of the Learning Starts with a Question method in improving students' learning outcomes. These results provide a positive picture of the method's role in optimizing students' understanding of science material.

d. N-Gain Test Results

The implementation of the Learning Starts with a Question (LSQ) method in Natural Science (IPA) learning for fifth-grade students at UPT SD Negeri 40 Bangkala Maccini Baji, Jeneponto Regency, aims to improve students' learning outcomes. One way to measure the extent to which this method impacts students' understanding is through the n-gain test, which is used to determine the level of improvement in learning outcomes between the pretest and posttest. The n-gain test provides a clearer picture of the effectiveness of the LSQ method in helping students better understand science concepts after its implementation.

In this study, the n-gain test was applied to compare the difference in scores between the pretest and posttest administered to 15 students. By quantitatively measuring the gain or improvement in learning outcomes, it is possible to determine the magnitude of change in students' understanding of the science material taught using the LSQ method. The application of this method is expected to enhance students' active participation in learning and accelerate their comprehension of more complex science concepts.

$$N-Gain = \frac{Skor\ Posttest - Skor\ Pretest}{Skor\ Ideal - Skor\ Pretest}$$

The data analysis results showed an increase in students' scores before and after the treatment. The effectiveness of the treatment was measured using the n-gain, which illustrates the extent to which students' understanding improved after the

learning process. The n-gain values are categorized into several levels, namely low, medium, high, no improvement, and decrease. In the experimental class, the majority of students (10 out of 15) achieved an n-gain score in the high category (≥ 0.70), indicating that the learning method used was highly effective in improving students' understanding. Some students even reached the maximum score of 1.00, which means they experienced complete improvement in understanding the material. However, a few students were in the medium category (0.30–0.69), and one student fell into the low category (< 0.30). Students in the medium category showed considerable improvement, while the student in the low category likely encountered difficulties in understanding the material.

To measure the overall effectiveness of the learning process, the percentage of n-gain was also calculated and categorized into levels of ineffective, less effective, moderately effective, and effective. Based on the analysis results, the minimum n-gain score was 0.1 and the maximum was 1, with an average of 0.7861, indicating a significant overall improvement in understanding. In terms of percentage, the minimum value was 10%, the maximum was 100%, with an average of 78.61%, which falls into the effective category ($> 76\%$). However, the standard deviation of 27.7168 indicates a considerable variation among students in terms of learning gains. Therefore, the learning method can be adjusted to ensure a more equitable improvement among all students.

CONCLUSION

The implementation of the Learning Starts with a Question (LSQ) method in the fifth-grade Natural Science (IPA) learning at UPT SDN 40 Bangkala Maccini Baji, Jenepono Regency, has proven to be effective in improving students' learning outcomes. This method encourages students to be more active and engaged in the learning process through a question-based approach, allowing them to understand science concepts more deeply. The data analysis results show a significant improvement in students' learning outcomes, as evidenced by the increase in the average pretest score from 76.33 to 93 on the posttest. Additionally, the n-gain value of 0.7861 indicates substantial progress in students' understanding of the material taught. Therefore, the LSQ method can serve as an effective alternative teaching strategy to enhance the quality of students' learning outcomes in Natural Science (IPA).

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