



Analysis of the Causes of Science Learning Difficulties for Elementary School Students

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Abstrak

Pendidikan merupakan hal utama yang dilakukan oleh setiap bangsa untuk mencapai kemajuan. Semakin berkualitas suatu bangsa itu maka semakin memberikan efek positif bagi kemajuan bangsa dan negaranya. Tujuan penelitian ini untuk menganalisa penyebab kesulitan melatih diri IPA partisipan didik di Sekolah Dasar. Metode penelitian ini menggunakan literature review dengan mengenakan database Pubmed dan search engine google scholar. Hasil didapat 10 artikel yang sudah serupa dengan kriteria inklusi dan eksklusi. Hasil riset ditemui 6 tema ialah fisiologi, psikologis, sosial, sarana serta infrastruktur, prosedur pembelajaran, serta guru. Implikasinya pada pembelajaran IPA di sekolah dasar seharusnya membuka kesempatan guna meningkatkan keingintahuan ilmiah siswa. Tetapi faktanya tidak seluruh siswa memahami kompetensi sesuai dengan yang diharapkan. Minimnya kemampuan rancangan IPA ini diakibatkan oleh kesulitan anak didik dalam merespon pembelajaran yang diserahkan oleh gurunya.

Kata Kunci: Kesulitan Belajar, Ilmu Pengetahuan Alam, IPA, Peserta Didik, Siswa, Sekolah Dasar

Abstract

Education is the main thing that every nation does to achieve progress. The more qualified a nation is, the more it will have a positive effect on the progress of the nation and state. This research aims to analyze the causes of difficulties in teaching students science in elementary schools. This research is literature review research using the Pubmed database and the Google Scholar search engine. The results obtained were 10 articles that were similar to the inclusion and exclusion criteria. The research results found 6 themes, namely physiological, psychological, social, facilities and infrastructure, learning procedures, and teachers. The implication for science learning in elementary schools should be to open up opportunities to increase students' scientific curiosity. But the fact is that not all students understand the competencies as expected. The lack of ability to design science is caused by students' difficulties in responding to the learning given by their teachers.

Keywords: Learning Difficulties, Natural Sciences, IPA, Learners, Students, Elementary School

Introduction

Education is the main thing that every nation does to achieve progress. The advancement of a nation and state will be positively impacted by how qualified a country is (Syafitri & Wahyuni, 2023). Additionally, education is a process that seeks to shape a person's attitudes and behaviors, help create their character, and increase their intelligence (Akhmad, 2020).

Every child is created so special. They are born with their own special qualities and different intelligences. There are those who are able to respond quickly when given an order, but there are also those who need time to digest an order (Zulkarnain & Nurjanah, 2023). This ability is what makes each child's unique character. Some of the characteristics of a child will be carried over into the child's academic activities in the school environment. So at school there are children who are able to absorb learning quickly, there are those who need time, and there are even those who are not able to absorb learning at school at all. So students are unable to absorb learning at school and are unable to match their classmates' learning abilities. Some students who have this character are sometimes considered to lack understanding of learning and are even labeled "stupid" by their environment (Zuliani et al., 2023).

Learning aims to change students who have not been educated into educated students, so that students who do not yet have knowledge about something become students who have knowledge. In the world of education, elementary schools contain natural science (science) subjects. According to (Wahyuni, 2018), science is one of the subjects taught at every school level, be it primary, secondary or higher education. Science is a branch of knowledge that originates from natural phenomena.

The problem of difficulty learning science is found in elementary schools. The research's conclusions include details on the following factors that may contribute to science learning challenges in primary school students: 1) Internal variables, such as curiosity, drive, confidence, study habits,

and goals. 2) External factors, such as the use of a lot of foreign words, dense material that students seem to have to memorize, a lack of learning resources, students' apparent difficulty understanding the material without the use of resources, teachers' tendency to dominate learning, their lackluster mastery of the subject, and their overly repetitive teaching style (Prayunisa & Marzuki, 2023).

Learning difficulties are problems that often occur in a learning process which are characterized by the presence of certain obstacles in achieving a goal and learning outcome. These obstacles may not be realized by the students who experience them, and they can be sociological, psychological or physiological in the entire learning process (Qi et al., 2023).

Science learning in elementary school should provide opportunities to foster students' scientific curiosity. This will help them develop the ability to ask and answer natural phenomena. The focus of science education in elementary school should be aimed at fostering students' understanding, interest and appreciation for the world in which they live. Achieving the best learning outcomes by students is the hope of all parties. The level of mastery in studying science can be seen from learning achievement which is generally expressed in the form of mastery scores for science concepts.

According to (Jufrida et al., 2019), found that students did not seem enthusiastic about the learning process, especially science, students play more with their friends than they pay attention to teachers in the learning process because they can observe when the learning process does not comprehend the information that has been conveyed by educators. Based on the foregoing context, the goal of this study is to examine the factors that lead to scientific learning challenges for elementary school pupils.

Method

Literature search employing publications published between 2013 and

2023 with English and Indonesian language restrictions, free full text, and data from the previous ten years. There must be keywords in the title and abstract. The selection of papers based on the researcher's criteria and research questions comes next. As soon as no articles with similar titles are discovered, they are sorted. Afterward, they were sorted based on the previously decided inclusion and exclusion criteria. The articles that will be examined are the outcome.

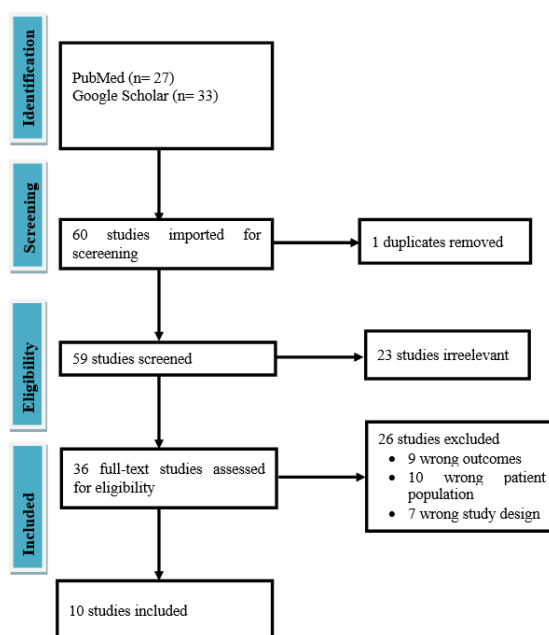
Articles defining inclusion requirements:

- 1) Both English and Indonesian articles are published.
- 2) Articles released between 2013 and 2023.
- 3) The essay emphasizes the need of identifying the root reasons of primary school pupils' issues with scientific learning.

Criteria for Article Exclusion:

Articles, reports, and comments with an opinion.

Then the extracted articles are obtained. Articles are extracted based on the author, country, year, the number of samples utilized, the search results, and the database items.



Results and Discussion

Results

Up to 60 search data results were found using the identification results from the Google Scholar and PubMed search methods. Selections in Finder have the same search title and results as the original query. The study of the analysis of the reasons of science learning difficulties for students in elementary schools is included in the complete text of the 2013–2023 article after the screening phase by comparing the study data with the inclusion criteria established by the researcher. The study findings are gathered and chosen to contain records that satisfy the research requirements. The finest evidence on the role was identified in 10 studies that fulfilled the research criteria, and they continue to offer significant reflections.

Figure 1. PRISMA Flow Diagram

Tabel 1. Extraction Article

No	Author/Year	Sample	Results
1	(Zi et al., 2022)	The research informants were 4 students from 9 student subjects class V	The results of the research show that there are two forms of learning difficulties for students, firstly Learning Disabilities (learning disabilities) where There are two pupils who have learning difficulties, and two students who have slow learning (slow learning). Internal elements such as learning motivation, study habits, and attitudes toward learning, as well as external ones such as the family, community, and school environment, all contribute to learning challenges. Some efforts to overcome learning challenges include 1) group tutoring 2) individual tutoring 3) remedial teaching 4) offering one-on-one tutoring 5) handing over cases.
2	(Handoko, 2019)	28 students	Indicators of learning difficulties include physiological, psychological, social, facilities and infrastructure, learning methods and the role of teachers in the classroom learning process.
3	(Zuliani et al., 2023)	12 male students and 8 female students	The outcomes of this study shed light on the causes of science learning challenges among primary school children. Natural science is one of the subjects that must be mastered in primary school.
4	(Mia et al., 2020)	VB homeroom teacher, 6 VB pupils, and 6 parents	Based on the research findings, a conclusion can be drawn, namely the type of difficulty that students face when studying science in the VB class at Maumere Catholic Elementary School 02, namely that there is too much science material, making it difficult to understand the material being explained and to understand terms. -difficulty grasping scientific concepts and foreign terms.
5	(Wahyuni, 2018)	Totaling 30 people	The percentage results of the questionnaire on learning difficulty factors for SMP Negeri 4 Terbanggi Besar class VII students in science courses, curiosity 23.33% (low), motivation 30% (low), concentration 43.44% (fair), study habits 40% (low), intelligence 30% (low). The results of student interviews produced learning challenges, including interest, motivation, concentration, study habits, and intelligence.
6	(Jannah et al., 2022)	Class VIII students with a total of 394 students	The results of data analysis in this research are levels of causal factors the highest student learning difficulty is interest in learning at 80%, then the school environment factor at 74%, then the teacher's way of teaching at 70%, study habit factor at 49%, and interest in learning at 38%.
7	(Sobari et al., 2022)	Class IV students totaling 27 students	The results of there are 2 factors that cause students to experience learning difficulties, namely internal and external factors. Internal factors that influence this are students' attitudes towards learning, motivation, and students' physical health. Meanwhile, external factors that influence it are variations in teachers' teaching, infrastructure and student learning environment. The factors that most dominate students' learning difficulties are internal factors, namely aspects of students' attitudes towards learning and students' lack of motivation to study science.
8	(Syafitri & Wahyuni, 2023)	Class V students at SDN 05 Pasar Tiku Tanjung Mutiara	According to the findings of the study, the causes producing difficulty in studying science in pupils are divided into two categories: internal factors and external ones. Internal factors include students' intellectual intelligence or intelligence based on interview analysis data, students' lack of interest, enthusiasm, and boredom in learning science, students' physical and physical conditions, as well as a lack of self-confidence. According to parents' analysis of interview data, parents do not provide adequate facilities for studying science, school factors, and playmates.

No	Author/Year	Sample	Results
9	(Puspitasari, 2021)	18 of the 26 students in class IV of the primary school, notably those with KKM scores that don't satisfy the number requirements, have learning issues.	Based on the research results and discussion presented on the difficulties in learning science subjects of students in Grade IV of Muhammadiyah Pancur Batu Private Primary School, it is clear that many students lose interest in learning science due to difficulty understanding concepts. , language difficulties and lack of support facilities.
10	(Awang, 2015)	Schools that are accredited A, accredited B, and accredited C.	The research's findings shed light on the causes of elementary school students' struggles with science learning in two ways: 1) internal factors, such as aspects of interest, motivation, self-confidence, study habits, and aspirations; and 2) external factors, such as numerous foreign words, dense material that requires memorization, a dearth of learning resources, and students' apparent inability to comprehend the subject matter without the use of media.

The results of this research were obtained from various articles that had been extracted which were carried out using interview techniques with sources as a form of data search, direct observation of the results of interviews, and direct documentation in the field, so that this research was more objective and accurate, researchers used the triangulation method technique. Data collection uses questionnaires or questionnaires.

The data that has been generated from the informants are: educators, students, guardians of students, school principals. In this research process, general data will be described first. General data that will be described includes a general description of research which is a place for researchers to conduct research regarding the research location, followed by research findings and analysis of research data or discussion.

Discussion

Several indicators of learning difficulties are outlined based on the indicators as follows:

Table 2. Data from the analysis of Natural Science Learning Difficulties

No	Indicator
1	Physiology
2	Psychological
3	Social

4	Facilities and infrastructure
5	Learning methods
6	Teacher

Physiological or physical learning difficulties are related to a person's physical development (Sotero et al., 2020). There are several factors that cause physiological learning disorders according to (Pertiwi, 2019), namely that some physical disorders will definitely affect the learning process in class. Some learning disorders due to physiological factors, namely: weak hearing, poor eyesight and even illness in students will affect the student's learning process (Shin et al., 2015).

However, psychological aspects of students have a significant influence on the learning process. One of the psychological impacts on learning includes: bullying at school, stress and even being under pressure will make students indifferent to participating in class learning. However, if students have good psychology, it will also influence their learning process in class (Reginald, 2023).

The learning difficulty factor is based on social indicators where students show difficulties in their social behavior in class. Some students are unable to collaborate in groups, communicate in learning and are even unable to socialize with their surroundings (Pertiwi, 2019). The existence of this social disturbance will affect students emotionally, such as not being able to calm down, always worrying, being easily offended and sometimes even acting aggressively so that it

becomes a disruption in the learning process (Oteng et al., 2023).

The Facilities aspect refers to the facilities and infrastructure provided by the school. The better the facilities obtained at school, the more comfortable it will be for students to learn. Likewise, if the facilities and infrastructure at school are not good, it will certainly hinder things student learning process at school. Students with learning difficulties also sometimes show inappropriate attitudes such as being indifferent, defiant, lying, truant, often late, being a nuisance, not doing assignments, not wanting to record learning, being alone, disorganized, and unwilling to work together in study groups (Ostrowski et al., 2022).

Another factor that is the main object in the learning process is the instructional strategy employed by the teacher to impart lessons. If teachers are unable to choose to use teaching methods that are appropriate to the subject matter and depth of the material, of course this is an important basis for achieving ineffective learning in the classroom. Some teachers sometimes treat students equally, even though students have different abilities, sometimes the class atmosphere tends to be stiff and serious so that students don't have the courage to express their opinions. Vasiari language used by teachers in conveying a concept is lacking, so students have difficulty capturing the teacher's delivery (Jufrida et al., 2019).

It is important to pay attention to the caliber of science instruction and learning. The topic that is brought up the most frequently is how to create a learning environment, conditions, methods, and solutions that, at the end of the day, help students develop their understanding skills and become successful learners (Gyamera & Asare, 2023).

Children who have learning difficulties cannot be given the same treatment as other children in general. Appropriate handlers are needed to be able to solve their problems well (Anai, 2022).

There are various ways to cure children's learning difficulties, according to (Oteng et al., 2023), some of the ways include: territorial method with the assistance of competent specialists. The Visual Method

provides learning from concrete methods to abstract methods without giving numbers but accompanied by pictures to make it easier to understand. Provide time to continue practicing and repeating learning at home.

Based on the review above, the causes of learning difficulties are divided into 2 factors, namely internal factors and external factors, as follows:

1. Internal factors cause students' learning difficulties

The internal factors that cause students to experience learning difficulties can be viewed from various aspects. These aspects include students' attitudes, motivation and physical health. In the previous section it was explained various findings on each aspect of the causes of students' learning difficulties. In the aspect of students' attitudes towards learning, it can be seen that some students do not understand science lessons, because students are not concentrating and not paying attention to the teacher who is teaching. So you get unsatisfactory learning results. This is in line with the research results of Amalia & Unaenah (2018) Analysis of Mathematics Learning Difficulties in Grade III Elementary School students with research results showing that there are students who have difficulty learning mathematics and the factors that cause students to have difficulty learning include interest and attitudes towards learning. This is also in accordance with Muhibbin's theory (2013, p. 184-185) which states that the causes of difficulties in learning science in elementary schools are: low intellectual capacity of students, students' attitudes or emotional instability and disturbances in students' sense organs or hearing.

Not different from attitudes, students' motivation in taking science lessons in elementary school is very worrying. From the findings, it was revealed that students who had difficulty learning science admitted that they were just doing it take science lessons and if you take science lessons well you will get grades so you can be considered for promotion. This is in accordance with Manalu, Meter, & Negara (2015) Analysis of Social Studies Learning Difficulties for Class IV Students in the implementation of the 2013 curriculum at the Piloting Elementary School

in Gianyar Regency in the 2014/2015 school year.

The results of this research show that the factors the causes of difficulties include internal factors, namely interest, motivation and talent. This is also in accordance with the theory of Awang (2015) which states that the causes of difficulties in learning science in elementary schools are: students' learning readiness in learning science which is referred to in the internal factors that cause students to have difficulty learning science are aspects of interest, motivation, self-confidence, study habits. and ideals. Judging from study habits at home, students who experience learning difficulties also lack maintenance of physical health. There was a student who revealed that he rarely looked after himself his body health, especially in the morning, he deliberately didn't want to have breakfast before going to school for the reason that he was afraid of being late and his parents had not provided breakfast in the morning. This is in accordance with the opinion of Utari D. R., (2019) that body health is a very important factor in participating in learning activities at school. Students who experience health problems such as flu, this disease can cause students not to concentrate on studying. Based on this review, it appears that all aspects that are the focus of research are related to internal factors that cause students to have difficulty learning, which is experienced by the majority of students.

Lack of student attitudes in learning, motivation, and the health of students' bodies makes it difficult for students to get maximum grades in science learning. So it can be said that the factors causing students' learning difficulties in science subjects are influenced by aspects of attitude, motivation and physical health. The aspects that most dominate students' learning difficulties are aspects of students' attitudes towards learning and students' lack of motivation to study science.

2. External factors cause student learning difficulties

The aspects examined in the external factors that cause students to have difficulty learning science in elementary school are variations in teachers' teaching, availability of infrastructure and family environment.

Findings at the time of interview and observations revealed that the aspects we wanted to know were related to students' difficulties learning science in elementary school had a big influence on students' learning outcomes which were less than optimal.

In the aspect of variation the teacher's teaching has been carried out optimally so that students can receive the science lesson material that the teacher wants to convey, this class IV teacher usually uses lecture, question and answer and demonstration methods when conveying the science learning process, not infrequently also practicum activities are carried out so that students understand the material better. study science. However, some students do not understand the lesson material presented by the teacher and students still find it difficult to grasp the concepts of science lessons. This is in line with the research results of Anzar & Mardhatillah (2017) Analysis of Student Learning Difficulties in Learning Indonesian in Class IV of SD Negeri 20 Meulaboh, West Aceh Regency, 2015/2016 Academic Year. The results of this research show that 16 students experienced difficulties in understanding Indonesian language material, this was triggered by several things, including.

Based on the results of research conducted by the author regarding Analysis of Students' Learning Difficulties in Eyes

From science lessons, several conclusions can be drawn as follows:

1. There are two forms of learning difficulties experienced by students the first form is Learning Disabilities (learning disabilities) students who experience learning difficulties.
2. Factors causing students' learning difficulties in science subjects. There are two factors that can cause learning difficulties, namely: internal factors (factors from within oneself) and external factors (factors from outside oneself). However, most learning difficulties are caused by external factors. However, it is important to remember that the main factors that influence learning difficulties originate from within oneself (internal).

3. Efforts to overcome students' learning difficulties in the eyes science lessons. In overcoming learning difficulties, there are many alternatives that educators can take as an effective and efficient effort to help overcome learning difficulties. The forms of assistance that can be provided are in the form of programs: 1) group tutoring 2) individual tutoring 3) remedial teaching 4) providing personal tutoring 5) handing over cases.

Conclusion

It is clear from the analysis's findings that a variety of internal and external factors contribute to students' learning challenges. Several appropriate ways can reduce students' learning difficulties in class. The teacher's role in teaching is necessary both in determining learning methods, in directing students and even by taking a persuasive approach to students in order to obtain solutions to problems in students' learning difficulties in class.

There are 2 factors that cause students to experience learning difficulties, namely internal and external factors. Internal factors that influence this are students' attitudes towards learning, motivation, and students' physical health. Meanwhile, external factors that influence it are variations in teachers' teaching, infrastructure and student learning environment. The factors that most dominate students' learning difficulties are internal factors, namely aspects of students' attitudes towards learning and students' lack of motivation to study science.

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