



## **Fun Science Methods to Improve Students' Activeness in Science Learning**

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### **Abstrak**

Tantangan baru yang dihadapi dalam melaksanakan pembelajaran IPA di SD khususnya di SDN 01 Kubang Siamang Bunyi adalah meningkatkan keaktifan dan keterlibatan siswa. Tujuan penelitian ini adalah untuk meningkatkan keaktifan dan keterlibatan siswa melalui metode Fun Science dalam pembelajaran IPA. Fun Science merupakan metode dengan menggunakan percobaan sederhana yang dikemas secara menarik dan menimbulkan efek menyenangkan bagi siswa dalam pembelajaran IPA. Jenis penelitian ini adalah deskriptif, dengan melibatkan responden siswa di SDN 01 Kubang Siamang Bunyi Kabupaten 50 Kota Provinsi Sumatera Barat. Instrumen pengumpulan data berupa lembar observasi dan wawancara. Data dianalisis dengan secara deskriptif. Hasil analisis data menunjukkan bahwa penerapan metode Fun Science meningkatkan keaktifan siswa dalam pembelajaran IPA di SDN 01 Kubang Siamang Bunyi Kenagarian Kubang Kabupaten 50 Kota. Fun Science dapat menjadi salah satu alternatif metode yang dapat diterapkan dalam pembelajaran IPA untuk memperbaiki dan meningkatkan kualitas pembelajaran. Fun Science merupakan metode pembelajaran yang telah disesuaikan dengan karakteristik siswa di SD.

**Kata Kunci:** Fun Science, Keaktifan Siswa, Pembelajaran IPA, Pembelajaran Menyenangkan

### **Abstract**

*The new challenge faced in carrying out IPA learning in elementary school, especially in SDN 01 Kubang Siamang Bunyi is to increase student activeness and involvement. This research aims to improve student liveliness and engagement through Fun Science methods in IPA learning. Fun Science is a method by using simple experiments that are interestingly packaged and cause fun effects for students in IPA learning. This type of research is descriptive, involving student respondents in SDN 01 Kubang Siamang Bunyi Regency 50 cities of West Sumatra Province. Data collection instruments in the form of observation sheets and interviews. Data is analyzed descriptively. The results of the data analysis showed that the application of Fun Science methods improved the activeness of students in IPA learning in SDN 01 Kubang Siamang Bunyi Kenagarian Kubang Regency 50 City. Fun Science can be one of the alternative methods that can be applied in IPA learning to improve and improve the quality of learning. Fun Science is a method of learning that has been adapted to the characteristics of students in elementary school.*

**Keywords:** Fun Science, Student Liveliness, IPA Learning, Fun Learning

## INTRODUCTION

In PP No. 19 of 2009, the purpose of national education is to ensure the quality of national education in order to educate the life of the nation and form the character and civilization of a dignified nation (Efendi & Barkara, 2021). Primary education is the beginning of the next level of education and is an integral part of the entire national education system. The purpose of basic education is divided into three groups, namely instilling the ability to read - write - calculate (calistung). The ability to read and write count (calistung) is the main priority for everyone to be able to live reasonably in an ever-evolving society. Give or impart basic knowledge and skills that benefit the student according to his development. The main pressure in this goal is basic knowledge and skills. Prepare children for education at SLTP. Activities related to this goal are basic knowledge and skills (Agustina, 2018). This means that the purpose of education in elementary school includes the basis of formation, the basis of the personality of students as Indonesians as a whole according to the level of development of themselves as provisions to develop their lives as individuals, community members, and citizens (Nurlaeli, 2021).

Elementary School (SD) is an elementary education institution whose students are between the ages of 7-12 years and have always curious characteristics (Desstya, 2010). According to Piaget's theory, elementary students are at a stage of concrete operational development. Children think on the basis of real/concrete experiences, not yet able to think like imagining how photosynthesis or osmosis occurs. However, the ability to perform additions, subtractions, dredifications as well as classifications have evolved with simple multiplication and division. The ability to think a little abstractly always has to be preceded by concrete experience. Elementary school children still need concrete objects to help the development of intellectual abilities. The characteristics of elementary school students in general: 1) have a strong curiosity and are interested in the surrounding world that surrounds themselves, 2) enjoy playing and cheerfully, 3) like to set themselves up to handle things, 4) vibrate feelings and are driven to excel as they do not like to experience dissatisfaction and reject failures, 5) learn effectively when satisfied with the situation, 6) learn by working, observing, initiative, and teaching other children (Wuryastuti, 2008).

Sisdiknas Law No. 20 of 2003 states that learning is the process of interaction of learners with education and learning resources in a learning environment (Yulianti, 2017). Learning has two characteristics, namely, first, the learning process involves the student's mental process to the maximum, not only listening, recording, and seeing but thinking activities occur. Second, in learning build a dialogical atmosphere and the question and answer process continuously. In learning, there are interconnected determinants that systemically concern the teacher's ability to master the material, skills in using various approaches, and the process of providing opportunities for students to learn individually and in groups (Sulthon, 2016).

In learning, there will be effective and mutually needy interaction between teachers and students. Learning that is fun and interesting then students will follow the learning with a sense of pleasure and happiness without being depressed or forced so that the soul will flow attention and concentration for a long time (Hamdu & Agustina, 2011). Effective learning can be seen from two dimensions, namely teachers and students. First, from the teacher dimension, in the teaching and learning process teachers are active in monitoring student learning activities, giving feedback, asking challenging questions, questioning student ideas, teachers must be creative in developing diverse activities, making tools, or learning media. Learning is effective if the teacher can achieve the learning goals. In order for learning to please teachers must be able to package the material so that it is easier for students to understand, using learning methods that can attract students' attention in participating in teaching and learning activities, using learning media that are in accordance with the material to attract students' attention in participating in teaching and learning activities. Second, from the student dimension: students must be active in asking questions, putting forward ideas, questioning the ideas of others and their ideas, students are creative in writing or summarizing, designing or

making something and discovering something new for the student, the effectiveness of the student can be seen from the mastery of the skills needed by the student. Fun learning can make students dare to try or do, dare to ask questions, dare to put forward ideas, dare to question the ideas of others (Sequeira, 2017).

In essence, IPA is seen as a process and as a product (Fadzil & Saat, 2017). As a process, IPA means all scientific activities to perfect knowledge about nature and to find new knowledge. As a product, IPA is interpreted as the result of a process, in the form of knowledge taught in school or outside school or reading materials for the dissemination of knowledge. As an application, IPA theories will give birth to technology that can provide convenience for life. If using a more thorough point of view, IPA is seen as a way of thinking to gain an understanding of nature and its properties, a way to investigate (a way of investigating) how natural phenomena can be explained, as a body of knowledge resulting from people's inquiry. Using an understanding of these fundamental aspects, a science teacher (IPA) can be helped when they convey to students a more complete and thorough picture of the universe of science (Rebecca, Etiubon, & Udoh, 2017).

At the level of education in elementary school, IPA subjects use an integrated system with other subjects called thematic learning. The concept of IPA began to enter thematic learning in grade IV to class VI. The allocation of IPA learning time in each of these classes is as much as 3 hours of lessons/week (Wijaya, 2018). Learning outcomes that want to be developed in IPA learning there are three kinds, from his knowledge, attitudes commonly known scientific attitudes, and skills known as process skills in IPA learning (Sila, Manlea, & Kolo, 2018). It is expected that these three elements can appear in learners so that learners can experience the learning process as a whole understanding natural phenomena through problem-solving activities, scientific methods, and mimicking the way and attitudes scientists work in finding new facts. The role of students working like scientists means that in the learning process IPA uses the basic process skills approach of IPA. IPA process skills are classified into two parts: basic skills and integrated skills. In elementary school students, it is expected that at least the basic process skills of IPA students must be developed in the IPA learning process. This is due to the cognitive abilities of elementary school students that cannot be compared to the cognitive structure of scientists, so students need to be given the opportunity to practice IPA process skills that are adapted to the cognitive development stage of elementary students (Fitria, 2017).

Activeness in the teaching and learning process is highly expected which can eventually lead to a positive impact between teachers, students, and learning outcomes. In addition, it can also form knowledge and skills that lead to the improvement of learning outcomes expected by all parties. Learning outcomes are a form of behavioral change that tends to persist from the cognitive, affective, and psychomotor realms of the learning process carried out at a certain time (Shulkhah, 2020). The success of teaching and learning activities greatly affects learning outcomes where the activity is the involvement in physical, mental, and emotional forms in learning processing activities that are directed to acquire knowledge, attitude skills, and values to support student success (Mudjiono, 2013). In the achievement of learning outcomes that are a direct impact of the activity that is carried out by the act of learning. Learning is a process that a person undertakes to acquire a new change as a whole, as a result of his own experience in interaction with the environment (Slameto, 2013). Learning is a human essential need that every individual can do anytime, anywhere, and regardless of age. In the world of education, learning outcomes are targets that must be achieved but do not rule out the possibility in the process of activity is a contributing factor in the achievement factor of improving learning outcomes.

Low IPA learning activity is caused by various factors (Fauziah, Rosnaningsih, & Azhar, 2017). Lack of student activity as a result of teacher control include the lack of teacher control over students, teaching monotony without regard to students, not using media or props, especially KIT IPA as a support in the teaching and learning process, not providing books that become the handle of students, in the delivery of materials only with lecture methods in every teaching and learning activity, so that the tendency of teachers to forget their own students. While the problems that exist in students such as not paying attention to the teacher

in explaining the lesson, fussing themselves and friends next to him, playing both alone and with friends when the teacher explained the lesson, not active either when asked cannot answer even do not want to talk at all (Layyinah, 2017).

Natural science subjects are subjects that must be followed by students and are also subjects included in UAS that determine the level of success of learners in demanding science during elementary school, it is required that the results of natural science lessons are satisfactory and achieve KKM. So it is very demanded educators be able to reflect on the results of natural science lessons that are lacking in order to achieve satisfactory lesson results. Facts on the ground show the activeness of learning low students IPA in SDN 01 Kubang. This is characterized by a still low percentage of students who reach KKM.

In the researchers' initial observation of SDN 01 Kubang, researchers saw that in IPA learning only focused minds-on without a balance between minds-on and hands-on, laboratory use that is still lacking due to various obstacles often felt by teachers such as inadequate equipment, fewer facilities, and infrastructure, constraints in managing students when practicum is simple, takes a very long time for learning using the laboratory. Thus resulting in low levels of process skills, scientific attitudes, and performances. Whereas process skills are very important, with process skills students can learn IPA in accordance with what scientists do, namely through observation, classification, inference, formulating, hypothesizing, and conducting experiments. Science process skills can also be learned in simple form according to the stage of development of elementary age.

The laboratory is a means that is inseparable from IPA learning in elementary school. Etymologically the word laboratory comes from the Latin word meaning place of work, but specifically for scientific research purposes (Muna, 2016). The utilization of laboratories for practicum activities is part of the teaching and learning process (Mamluk-Naaman & Barnea, 2012). Through practicum activities, students can prove existing concepts or theories and can experience the process of the experiment itself, then draw conclusions (Eliyarti, Rahayu, & Zakirman, 2020). It is hoped that through the laboratory the student's activities can be better motivated. How ideal is the IPA learning activity when done in the laboratory considering that science is a product and process? In science learning, the laboratory strongly supports the learning process with various practicums although not all activities are carried out in the laboratory its existence is needed in the teaching and learning process (Trihayu, 2015). Practicum aims to equip students to better understand theory and practice (Olajide & Adebisi, 2017). There are four reasons for the importance of IPA practicum activities in elementary school. The four reasons are 1). Practicum evokes IPA learning motivation, 2). Practicum develops basic skills of conducting experiments, 3). Practicum becomes a vehicle to learn scientific approaches, and 4). Practicum supports the subject matter (Nisa, 2017).

A solution to this problem is to use Fun Science methods in IPA learning in elementary school. Fun Science is a method by using simple experiments in explaining biological science phenomena packaged in an interesting, fresh, and interactive appearance of science. Hopefully, in addition to being entertained, participants can be honed curiosity and encouraged by their passion to further enjoy science (Pursitasari, Suhardi, & Putikah, 2019). The advantages of Fun Science methods are facilitating and developing an inquisitive, diligent, open, critical, self-aware, responsible, cooperating, and independent attitude in their lives, helping children to have the ability to use simple technologies that can be used to solve problems in everyday life, as angers the emergence of aspects related to the skills of the process of science, so that knowledge and ideas about the environment in children become developing, helping children to be able to apply various concepts of science to explain the symptoms of nature and solve problems in everyday life (Irwansyah et al., 2019).

## RESEARCH METHOD

This research aims to increase student activeness and engagement through Fun Science methods in IPA learning at SDN 01 Kubang Siamang Bunyi. This type of research is descriptive, involving respondents of 40 students in SDN 01 Kubang Siamang Bunyi Regency 50 cities of West Sumatra Province. Data collection instruments in the form of observation sheets and interviews. In this study, the data were analyzed descriptively. Implementation of the Fun Science method in IPA learning is carried out on weather topics.

## RESEARCH RESULTS AND DISCUSSION

Learning is to teach students using the principles of education and learning theory that are the main determinants of educational success. In learning, there is intensive communication between teachers and students in learning so that there are psychological and physical activities carried out by students in learning and teachers in facilitating their students to learn well (Mujakir, 2015). Learning means a psychic and physical activity in teaching-learning interactions using various learning tools and resources in order to achieve behavioral changes that are permanent both cognitive, affective and psychomotor that is permanent. In other words, learning must be able to achieve changes in student behavior for the better so as to improve the abilities they have permanently.

Learning is a process characterized by changes in a person. Changes as a result of the learning process can be shown in various forms such as changing his knowledge, understanding of his attitude and behavior, his skills and abilities, his rekasi power, his acceptance power, and other aspects that exist in the individual (Ikhsan, 2020). So a person is said to have learned is if the person undergoes changes in some specified aspect, besides that we can know that learning is an active process that reacts around the individual student. Learning is the essence of learning activities. Learning activities are a process to get learning results. As mentioned earlier that the results of the learning process are not only in the realm of knowledge but also in other areas such as affective and psychomotor learning outcomes.

The thing that must be considered in the implementation of effective and fun learning is 1) understanding the nature of the child. Basically, the child has traits: curiosity and imagination; 2) get to know the child individually. The students come from varied family environments and have different abilities; 3) utilize the child's behavior in organizing learning. As social creatures, children since childhood naturally play in pairs or groups in play. This behavior can be utilized in the organization of learning; 4) develop critical thinking, creative, and problem-solving skills; 5) develop the classroom as an attractive learning environment. Attractive classrooms are highly recommended in PAKEM; 6) utilizing the environment as a source of learning; 7) provide good feedback to improve learning activities. The quality of learning outcomes will increase when there is interaction in learning. Giving feedback from teachers to students is one form of interaction between teachers and students; 8) distinguish between physical and mentally active (Wijaya, 2018).

In fun learning, students actually cannot be separated from the dialogical interaction between teachers and students during learning, the teacher-student relationship in learning becomes resentful of the formation of learning conditions that can be created (Chu, Angello, Saenz, & Quek, 2017). Learning that emphasizes more on the learning process accommodates teachers always provide opportunities for each student to learn in accordance with the rhythm of his own ability, the teacher provides facilities that make it easier for students to learn by utilizing various learning resources, it will form active, creative, effective, and fun learning. In active learning, there will be a good brain work process so that it requires creative work to be willing to try for yourself, ask questions, analyze, and so on arising from psychic work, being effectively dotted against the use of the principles of regularity and accuracy in learning (Mariana & Praginda, 2009).

It can be understood in the context of learning that must pay attention to the psychological readiness of students by paying attention to the individual abilities of students, encouraging and improving their abilities,

stimulating students to be challenged to learn, and by utilizing supporting learning resources and media (Pitriana, Agustina, Zakwandi, Ijharudin, & Kurniawan, 2018). In order for learning to be fun and not easily bored or even depressed, then students must pay attention to their psychiatric activities in learning. Psychiatric activities here are related to how children learn in accordance with their individual abilities. Do not take the view that learning the same for all students and the same model of emphasis on the material for all students is considered more effective but instead by assuming the child's ability is the same in learning it will shackle the student mentally and tend to force so that the child does not learn according to the rhythm of his ability and feels unhappy (Achru, 2019).

One of the manifestations is through quality education at every level of education. Natural Sciences (IPA) is one of the subjects that provide positive contributions for the achievement of an intelligent society as mandated in the 1945 Constitution (Sulistyoningsih & Karim, 2017). IPA learning is one of the learning that is integrated with other learning. IPA learning in basic schools is with regard to environmental science concepts. Science Learning (IPA) is concerned with how to find out about nature systematically. IPA learning cannot be by memorizing or passively listening to teachers explain concepts but students themselves who have to do learning through experiments, observations, or experiments. Experimental activities not only encourage cognitive intelligence, but also social and psychomotor intelligence (Saepuloh, Adrian, & Sanjaya, 2016).

Teachers must be able to facilitate students to understand the environment. IPA learning is expected to be one of the steps so that students are able to understand the environment well. The values in IPA learning are expected to be applied in students' lives. IPA learning is expected to be a vehicle for students to learn themselves and the environment, as well as further development in application in everyday life. Student success in IPA learning in school can also be influenced by how the student's own learning motivation (Nugroho, 2020).

Skills – basic skills IPA consists of 1). Observing is defined as the process of using the senses to observe objects and events, as well as their characteristics (in the form of notes); 2) Classifying, is the process of grouping objects and events based on equations and differences (in the form of lists of tables and graphs); 3) Measuring is comparing unknown quantities with standards (units of length, time, temperature); 4). Inferring is the activity of making conclusions based on observational data; 5). Predicting is something that has not been proven (not guessed) with the belief that what will happen is based on knowledge and understanding, observation, and conclusions that have been obtained. 6). Communicating can be poured orally or in writing in the form of reports, graphs, tables, and images (Mariana & Praginda, 2009).

Fun Science is a method used to make IPA learning interesting and fun. This is done by creating an effective learning environment through the practicum of IPA. Fun learning is the result of good cooperation between teachers and students during the teaching and learning process, because if the two do not participate actively then this fun learning will not run optimally (Chanifa, Sa'dijah, & Lismanda, 2019).



**Figure 1. Application of Fun Science Method in IPA Learning at SDN 01 Kubang**

Learning outcomes that must also be developed in IPA learning are the scientific attitudes of students. As mentioned earlier, the scientific attitude developed includes an attitude that always prioritizes evidence, flexible, critical, diligent, open, creative, meticulous, and sensitive to the environment. This attitude is not only developed during the IPA learning process but more importantly, this attitude is developed not only to the stage of knowing but up to the stage of applying (Wuryastuti, 2008). In practicing the basic process skills of IPA and scientific attitude, learning that not only students act as recipients but students must experience their own experience in understanding the science, so that it can eventually be applied in students' daily lives, in addition, IPA learning is also directed to develop students' thinking skills through existing problems.

Fun Science methods can encourage students to keep looking for new breakthroughs, creatively pour their ideas, and demonstrate them (demonstrated directly) by still being guided by teachers. This activity is fun for students especially when their ideas and ideas are well received so that students are increasingly motivated to develop their knowledge and creativity. When students learn with Fun Science methods, the IPA process skills they have are also getting better. Students in elementary school prefer learning that is not monotonous, learning activities while playing using various means to realize fun learning activities. Students become active in cooperating and conveying their ideas, able to use simple technology, able to apply various concepts of science to explain the symptoms of nature and solve problems in everyday life (Irwansyah et al., 2019).

## CONCLUSION

Variations can be done in IPA learning, especially in elementary school, one of which uses the Fun Science method. Fun Science is a method by using simple experiments that are interestingly packaged and cause fun effects for students in IPA learning. Fun Science can be one of the alternative methods that can be applied in IPA learning to improve and improve the quality of learning. Fun Science is a method of learning that has been adapted to the characteristics of students in elementary school. Implementation of Fun Science method in IPA learning at SDN 01 Kubang Siamang Bunyi can improve student activeness and engagement. Learning that is carried out becomes more meaningful, fun in accordance with the characteristics of IPA learning in elementary school. In the future, the Fun Science method is not only an alternative to the variety of learning design but also becomes a mandatory method that needs to be implemented in IPA learning in elementary school, especially in materials that are considered difficult.



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