INTERNATIONAL JOURNAL OF MULTIDISCIPLINARY RESEARCH AND ANALYSIS

ISSN(print): 2643-9840, ISSN(online): 2643-9875

Volume 06 Issue 09 September 2023

DOI: 10.47191/ijmra/v6-i9-61, Impact Factor: 7.022

Page No. 4425-4435

The Importance of Active, Innovative, Creative, Effective, and Fun Learning Applications On Natural Science Subject At Islamic Elementary School

Alfi Hidayati[1], Abu Dharin[2]

[1,2] UIN Prof. KH. Saifuddin Zuhri Purwokerto, Indonesia

ABSTRACT: The active, innovative, creative, effective, and fun learning applications (PAIKEM) learning model comes from the concept that learning should be child-centered and should be fun therefore students are motivated to continue learning on their own without orders and also students do not feel burdened or afraid. For this reason, the pleasurable learning part becomes one of the important aspects of learning. Especially in science learning activities where teachers still use conventional methods, whereas the material in science learning is very interesting to learn when using fun learning. PAIKEM is one of the fun learning methods, besides motivating students to explore, create, and experiment is the goal of PAIKEM learning. This is to support students develop higher-order thinking skills, critical thinking, and creative thinking.

KEYWORD: PAIKEM learning, Natural Science Subject.

INTRODUCTION

Learning is a process of interaction between students and the environment, consequential in a change in behavior for the better. And the teacher's occupation is to coordinate the environment to support the behavior change of students. Learning can also be interpreted as a conscious effort by educators to help students so they can learn according to their needs and interests. Here teachers perform as facilitators who provide facilities and create situations that support the improvement of students' learning abilities. Learning is one of the determining elements of whether graduates are good or not produced by an education system. It is like the heart of the learning process. Virtuous learning inclines to produce graduates with good learning outcomes too. Vice versa.

Education experts argue that the learning process in schools has tended to be teacher-centered. The teacher's job is to distribute the materials and the learners are given the responsibility to memorize all the knowledge. Target-oriented learning has been recognized as successful in short-term memory competitions, but it fails to equip learners to solve problems in long-term life.

Learning will be more meaningful for students to experience what they learn and not know; therefore, educators have struggled in every way to try to make what students learn at school that can be used in their daily lives.

Natural Science (IPA), is a science that studies nature and everything in it, as well as the phenomena that occur in it. There are many phenomena in everyday life connected to science. The general goal of studying science is for the well-being of human life over various efforts to apply everything that exists in nature. Science is a creative process and seeks various causes and effects of phenomena that happen in nature. Achievement in the teaching and learning process requires active, innovative, creative, effective, and fun learning strategies and patterns to arouse student learning creativity. Therefore, science learning in SD/MI must emphasize providing direct learning experiences through the application of process skills.

Piaget argues that "The level of psychological development of elementary school students is still at the concrete operational stage. Children easily understand complex and abstract concepts if attended by concrete examples in practicing their conceptual discovery efforts through real objects "(Winataputra, 1993). This means that at this stage the child/student will experience the beginning of rational thinking. It means that the learner has logical operations that can be applied to concrete problems. In this case, science learning in SD/MI is very appropriate to be implemented using active, innovative, creative, effective, and fun learning or abbreviated as PAKEM.

METHOD

In this writing, the author uses a descriptive method, which is a method based on existing facts or phenomena that empirically live on its users. The data used in the preparation of this paper comes from various literature relating to the issues discussed. Some of the main references used are articles on PAKEM or PAIKEM learning, Science Subject Concepts, printed and online journals, and several scientific articles sourced from the internet. The type of data obtained is varied, qualitative and quantitative. The writing method is literature study. Information obtained from various literature and compiled based on the results of studies of the information obtained. Writing is attempted to be related to one another and following the topics discussed.

LITERATURE REVIEW

1. Definition of Active, Innovative, Creative, Effective, and Fun Learning (PAIKEM).

Learning that is currently being developed and widely introduced to all corners of the country is Active, Innovative, Creative, Effective, and Fun learning or abbreviated as PAKEM. It is called that because learning is designed to activate children or students and develop creativity so that it is effective but still fun. What is PAKEM or PAIKEM? PAKEM stands for Active Learning, Creative, Effective, and Fun. Or PAIKEM from Active, Innovative, Creative, Effective, and fun learning. (PAKEM).

Active means that in the learning process, the teacher must create an atmosphere in such a way, so that students actively ask questions, ask questions and express ideas. Learning is indeed an active process of the learner in building his knowledge, not a passive process that only receives teacher lectures about knowledge. If learning does not provide opportunities for students to play an active role, then learning is contrary to the nature of learning. The active role of students is very important in the formation of creative generations who can produce something for themselves and others.

Innovative. Innovative learning is a learning process that always presents something new to eliminate boredom and boredom. Innovative learning always presents something new in every element of education, starting from the aspect of teacher models, materials, devices, and several other important elements. Innovative learning always updates those elements.

Innovative learning differs greatly from conventional learning which has become a habit in learning. The teacher builds an atmosphere of 'Learning is Fun' for all students which is the key that is applied in innovative learning. If students have instilled this in their minds, there will be no more passive students in class, feeling pressured by deadlines for assignments, the possibility of failure, limited choices, and of course boredom. Developing innovative learning can be done in ways that accommodate each student's characteristics and measure the absorption ability of each student. Understanding students' learning styles becomes important for the innovation process. Some students are capable of absorbing knowledge and skills by using visual (vision) and auditory (hearing) abilities and not a few students have the ability to absorb knowledge and skills kinesthetically (muscle and body stimulation/movements).

Creativity is also meant for the teacher to create a variety of learning activities to meet the various levels of ability of students. Fun is a pleasant teaching and learning atmosphere so that students focus their full attention on learning so that their attention ("time on task") is high. According to the research results, a high level of attention increases learning outcomes. Being active and pleasant is not enough if learning is not effective, that is, it does not produce what students master after the learning process takes place, because learning has several learning objectives that must be achieved. If learning is only active and fun but still ineffective, then learning is no different from playing ordinary games.

Effective. Effectiveness is an important point in the learning process. Whether the learning is effective or not can be seen from the extent to which the minimum targets of the basic competencies that have been set are achieved. Learning is called effective when learning has achieved the desired goals in education, such as mastering science and technology as teaching materials, and forming skills or learning abilities that are more effective and efficient. And learning will be said to be more effective if it can provide new experiences for students or also for teachers.

For the learning process to be effective, there are several things that teachers should have:

- Mastering the material well
- Mastering the model well
- Understand student learning styles
- Understand learning objectives
- Motivate students
- Not monotonous in using methods
- Teaches how to teach something
- Performs the assessment correctly

Fun. Fun learning is a situation where students feel comfortable, and calm and no pressure in learning. Fun learning will always arouse students' curiosity about something. Students will focus on the learning material. School will be a place that is always missed and the teacher will always be a figure to look forward to.

Fun learning requires the support of classroom management and the use of learning media. A class that is artistic and equipped with sufficient facilities affects a pleasant learning climate that can also be created because the teacher can adjust the learning process to the characteristics of students and can build a humorous atmosphere in the classroom.

Generally, PAKEM can be described as follows:

1	Students are involved in a variety of activities that develop their understanding and abilities with an emphasis on learning by doing.
2	The teacher practices various tools and ways to generate enthusiasm including using the environment as a learning resource to make dancing learning fun for students.
3	The teacher organizes the class by displaying books and teaching materials that are more fascinating and provides a "Reading Corner"
4	The teacher applies more supportive and interactive learning, including group learning.
5	The teacher encourages students to find their way of solving a problem, to express their ideas, and involve students in creating their school environment.

2. Concepts and Nature of Science

The concept of science is an idea that unites scientific facts. According to Susanto explained that "The concept is a link between the facts that have a relationship" The learning objectives of science include: understanding the natural world, having the skills to gain knowledge in the form of process skills / scientific methods, having a scientific attitude in recognizing the natural world and solving the problems it faces. (Sulistyorini, 2007: 15). Thus, science is very important if studied or taught in SD / MI because science can develop the potential possessed by students and can develop students' thinking skills through experiments conducted in the science learning process, besides that students can also be required to solve problems.

The nature of science is a science to find out, understand the universe systematically, and develop an understanding of science about natural phenomena that are poured in the form of facts, concepts, principles, and laws that have been tested.

Science is a collection of knowledge arranged systematically and its use is generally limited to natural symptoms. Its development is not only characterized by a collection of facts but by the scientific method and scientific attitude.

According to Sujana (2013) the nature of science or science when viewed from the point of technology, epistemology, and axiology there are three, namely science or science as a product, science or science as a process, and science or science as an attitude.

a. Science as a Product.

Science as a product is a collection of the results of activities of scientists for centuries that produce facts, data, concepts, principles, and theories. So the results in the form of facts are from empiric activities (based on facts), while data, concepts, principles, and theories in science are the result of analytic activities.

b. IPA as Process.

Science as a process is a strategy or method carried out by scientists in finding these things as an implication of findings about natural events or events. So, in the process, we can think about solving a problem that exists in the environment. Through this process, we can get scientific findings, and their appearance is in the form of scientific activities called scientific investigations.

3. Science as a Scientific Attitude.

IPA as a scientific attitude means that in the process IPA contains ways of working, attitudes, and ways of thinking. And in solving problems or problems, a scientist tries to take an attitude called a scientific attitude. These attitudes include.

a. Objective to the facts or reality

b. Don't be hasty in drawing conclusions or decisions

c. Open-hearted

d. Can distinguish between fact and opinion

e. Being impartial with a particular opinion without reasons based on facts.

f. Do not base conclusions or facts

g. Don't believe in superstition

h. Perseverance and patience in solving problems

I. Willing to communicate and publish the results of his findings to be investigated, criticized, and perfected.

j. Can cooperate with others.

k. Continuously curious about the what, why, and how of a problem or symptom that he encounters.

4. The Meaning of Active Learning for Students

In active learning, there are activities of speaking and listening, writing, reading, and reflection which lead students towards meaning. Students will try to identify the content of the lesson, ideas, and various things related to the topic being studied. The activeness of students in learning is a form of enthusiasm and enthusiasm for learning. In addition, students who are active in class can be used as an indicator that they are ready to participate in learning. Children as learners play a role in developing the knowledge and understanding they already have through activities and interactions with their environment. That way children can reach a deeper level of understanding, and are better able to analyze, evaluate, and synthesize ideas.

5. Application of fun science learning

A fun and memorable learning atmosphere will attract students to be actively involved so that learning objectives can be achieved optimally.

To create fun learning, several things must be done by the teacher including:

1. Greet students in a friendly and enthusiastic manner.
2. Create a relaxed atmosphere
3. Motivate students

4. Using ice breaker

5. Using a variety of methods.

There are also effective ways to create a fun classroom atmosphere, especially in learning science, including:

1. Create a different room atmosphere. Monocle teaching method.
2. Increase interaction by provoking children's ideas. fishing for children's ideas.
3. Take advantage of technology.
4. Give equal attention to all children.

Then what kind of learning is interesting? At the beginning of the discussion, it was explained that learning science with the PAIKEM or PAKEM system or method is one of active, innovative, creative, effective, and fun learning. In science learning here can use learning methods. Various learning methods can be used as learning variations and of course, make the learning process more enjoyable. For example, with PAIKEM / PAKEM the following methods can be used:

- Demonstration method
- Discussion method
- Debate method
- The Jigsaw Method
- Case Study Method
- Field Trip Method
- Recitation method
- Practicum method and many more.

Below is an example of learning activities that use PAIKEM/PAKEM in science learning.

Teachers design and manage learning that encourages students to play an active role in learning	Teachers carry out learning with various activities, for example: • Test • Group discussion • Solve the problem • Searching for information • Writing reports • Visits outside the classroom
Teachers use a variety of learning aids and resources.	Following the subject the teacher uses, for example: • Available tools/make your own • Picture • Case study • Source person • environment

The teacher adjusts the materials and learning activities to the student's abilities.	• Students are grouped according to abilities (for certain tasks/activities) • Learning materials adapted to the ability of the group • Enrichment or correction assignments are given
The teacher relates learning to the everyday experiences of students	• Students tell or use their own experiences. • Students apply what they learn in their daily activities.
Assess student learning and progress on an ongoing basis.	• The teacher monitors student work • Teacher provides feedback.

After the teacher has done the above, some things need to be considered in implementing PAKEM or PAIKEM. The following are things that need to be paid attention to in implementing PAKEM.

a. Understanding the nature of the child/student

Children have the nature of curiosity and imagination. Village children, city children, rich people's children, poor people's children, Indonesian children, or non-Indonesian children - as long as they are normally born with both characteristics. Both of these characteristics are the basic capital for the development of critical and creative attitudes/thinking. Learning activities are one of the fields that we must cultivate so that they are fertile for the development of these two attributes of God's grace. The learning atmosphere is shown by the teacher praising children for their work, the teacher asking challenging questions, and the teacher encouraging children to do experiments, for example, is fertile learning as intended.

b. Get to know the child individually

Students come from a variety of family environments and have different abilities. In PAKEM individual differences need to be considered and must be reflected in learning activities. all children in the class do not always do the same activities but differ according to their learning speed. Children who have more abilities can be used to help their weak friends (peer tutors). By regarding the child's abilities, we can help him when he gets into trouble so that the child learns optimally.

c. Utilizing children's behavior in organizing learning.

As social beings, children from childhood naturally play in pairs or groups in playing. This behavior can be used in organizing learning. In carrying out tasks or discussing something, children can work in pairs or groups. Based on experience, children will complete tasks well, if they sit in groups, sitting like this makes it easier for them to interact and exchange ideas. However, children also need to complete tasks individually so that their talents develop.

d. Develop critical thinking skills, creative and problem-solving skills.

Life is solving problems. it requires the ability to think critically and creatively. Critical to analyze problems and be creative to generate alternative solutions to problems. Both types of thinking, critical and creative, come from curiosity and imagination, both of which are present in children from birth. Because the teacher's task is to develop, among others, by frequently giving assignments or asking open-ended questions. Questions that start with the words "what happens if" are better than those that start with the words "what, how much, when" which are generally closed (only one correct answer).

e. Developing the classroom as an engaging learning environment.

An attractive classroom is highly recommended in PAKEM. The results of student work should be displayed to fill such a classroom. In addition, the results of the work displayed fill the classroom like that. In addition, the results of the work on display are expected to motivate students to work better and cause inspiration for other students. What is displayed can be the results of individual, pair, or group work. Displays can include pictures, maps, diagrams, models, real objects, poems, essays, and so on. A classroom filled with displays of student work, and well organized, can help the teacher in the KBM because it can be used as a reference when discussing a problem.

f. Utilizing the environment as a learning resource.

The environment (physical, social, or cultural) is a very rich source of children's learning materials. The environment can act as a learning medium, but also as an object of study (learning resource). The use of the environment as a learning resource often makes children feel happy in learning. Learning by using the environment does not always have to leave the classroom. Materials from the environment can be brought into the classroom to save costs and time.

g. Provides good feedback to improve learning activities.

The quality of learning outcomes will improve if there is interaction in learning. Giving feedback from teachers to students is one form of interaction between teachers and students. Feedback should reveal students' strengths rather than weaknesses. In addition, the way of giving feedback must be polite. This is intended to make students more confident in facing further learning

tasks. Teachers should consistently check students' work and provide comments and notes. Teacher notes related to student work are more meaningful for student self-development than just numbers.

DISCUSSION

A. Definition of the PAIKEM learning model.

Paikem stands for Active, Innovative, Creative, Effective and Fun Learning. PAIKEM can be defined as a teaching approach (approach teaching) that is used with certain methods and various teaching media accompanied by arrangement of the environment in such a way that the learning process becomes active, innovative, creative, effective and fun. As for among the teaching methods that are very likely to be used to implement PAIKEM:

1. Plus Lecture Method
2. Discussion Method
3. Demonstration Method
4. Role play method
5. Simulation Method

Meanwhile, the description of the abbreviations for active, innovative, creative, effective and fun learning is as follows:

1. Active learning

This means that the teacher's learning process must create an atmosphere in such a way that students can ask questions, question and express ideas.

According to Taslimuharrom, a learning process is said to be active (active learning) if it contains:

a. Attachment to the task (commitment)
It should be useful for students, with the needs of students and are related to personal interests

b. Responsibility

1) Give authority to students to ask questions
2) Teachers listen more and respect students' ideas and provide choices and opportunities for students to make their own decisions.

c. Motivation

This means that the teacher encourages students to actively seek, find and solve their own problems. He doesn't just feed disciples, nor is he like someone who pours water into water. For example :

- On the one hand, active teachers:
  - Provide feedback
  - Ask challenging questions
  - Discuss student ideas
- On the other hand active students:
  - Ask
  - Present ideas
  - Discuss other people's ideas with their own.

2. Innovative

This means that the teacher's ability to use and own methods, approaches, learning resources in the learning process. For example On the one hand, teachers act innovatively in terms of:

- Using useful and dignified new materials/materials
- Apply a variety of learning approaches in a new style
- Modifying conventional learning approaches into innovative approaches that suit the circumstances of students, schools and the environment
- Involve learning technology devices

On the other hand, students also act innovatively in the sense of:

- Following innovative learning with applicable rules
- Attempting to find materials / materials themselves from relevant sources
- Using advanced technological devices in the learning process.

3. Creative

means having creativity and having the ability to be creative in learning. The active role of students in the learning process means that it will produce generations that are able to produce their interests and the interests of others. Creative is also intended so that teachers can create diverse learning so that it can meet various levels of student abilities

4. Effective

This means success in achieving the target or at least achieving the basis that has been set in the results and the learning process, namely:

The teacher becomes an effective teacher, because:

a. Over matter
b. Teach and direct by example
c. Value students and motivate students
d. Understanding learning objectives
e. Teaches problem solving skills
f. Using a variety of methods
g. Teaching how to learn something
h. Carry out proper and correct assessments.

Students become effective learners, in the sense of:

a. Master the knowledge and skills or competencies needed
b. Gain valuable new experiences.

5. Pleasant

This means that the teacher must be able to create a pleasant, safe and comfortable atmosphere. This can directly activate the neo corte (brain work) and optimize the learning process, as well as increase self-confidence in children.

B. The basis for the emergence of the PAIKEM learning model and the characteristics of PAIKEM learning.

1. The basis for the emergence of the PAIKEM learning model:

a. The transition from individuals (individual learning) to learning together (cooperative learning).
b. The transition from learning by rote (role learning) to learning to understand (learning for understanding).
c. The transition from knowledge-transmitted theory to interactive forms, process skills and problem solving.
d. The paradigm shift from teachers teaching students to learn
e. Shifting from traditional evaluation forms to authentic assessment forms such as portfolios, projects, student reports, or student performance.

The basis for the transition above, in accordance with PP No. 19 of 2005 concerning National Education Standards, article 19, paragraph 1 which reads:

"The learning process in educational units is carried out in an interactive, inspirational, fun, challenging and motivating way for students to participate actively, and provides sufficient space for initiative, creativity and independence in accordance with the talents, interests and physical and psychological development of children."

2. Characteristics of PAIKEM learning:

a. Student-centered

Learning :

1) The teacher as a facilitator.
2) The focus of learning is on students, not lecturers
3) Students learn actively
4) Students control the learning process and produce their own work, not just quoting from the teacher.
5) Fun learning (joy full learning)
6) Learning is oriented towards achieving certain abilities (competency based learning)
7) Complete learning (mastery learning)
8) Continuous learning (continuous learning)
9) Learning in accordance with the present and here (contextual learning).

C. Important roles and things that need to be considered in carrying out PAIKEM learning.

1. The important role of PAIKEM learning:

a. More enabling students and educators to be both active and involved in learning.

b. It allows teachers and students to do creative work together. The teacher seeks all creative ways to involve all students in the learning process. Meanwhile, students are also encouraged to be creative in interacting with fellow friends, teachers, subject matter and all learning aids, so that learning outcomes can increase.

2. things that need to be considered in carrying out PAIKEM learning, namely:

a. understand the characteristics of students.

Basically, children have high imagination and curiosity. All children are born with two potentials. Both are the basic capital for the development of critical and creative attitudes/thoughts. Therefore, learning needs to be used as a land that we cultivate so that it becomes a fertile place for the development of these two potential gifts from God.

b. Understanding the development of student intelligence.

As already explained, Jean Pieget divides the development of human intelligence/cognitive development into 4 stages, namely:

1) *Sensory-motor*(sensory-motor/0-2 years)
2) *Pre-operational*(pre-operational/2-7 years)
3) *Concrete-operational*(concrete-operational/7-11 years)
4) *formal operations*(formal-operational/11 years and over)

During the period of primary and secondary education, students experience concrete-operational and formal-operational stages. In the concrete-operational period that lasts until adolescence, children gain additional abilities called systems of operations (thought steps). This ability is useful in coordinating his thoughts and ideas with certain events into his own thinking system.

Furthermore, in the cognitive development of the formal-operational stage a teenager has the ability to coordinate both simultaneously and sequentially two kinds of cognitive abilities, namely: a) the capacity to use hypotheses, b) the capacity to use abstract principles. Hypothesis means thinking about something, especially in terms of solving problems using basic assumptions that are relevant to the surrounding environment, for example related to abstract sciences such as monotheism, mathematics, and other abstract sciences.

c. Get to know individual students

Students who have more abilities can be used to help their friends. The point is to create an even distribution of the educational process.

d. Utilizing student behavior in organizing learning

As social beings, children from childhood naturally play in pairs and groups, so that these characteristics can be utilized in organizing learning. Like group assignments, but also don't forget individual assignments so that individual talents develop.

e. Develop critical thinking skills, creative, and problem solving skills.

The teacher's task is to develop a sense of criticality and creativity in solving a problem, for example by frequently giving assignments or asking open-ended questions and allowing students to think for reasons and make critical analyses. Just as questions with the words "why", "how" are better than questions with "what" and "where"

f. Developing the classroom as an interesting learning environment.

Classrooms are full of displays of student work (formulas, tables, diagrams, etc.), and are well laid out, can help both teachers and students in learning activities, because they can be used as a reference when discussing a problem.

g. Utilizing the environment as a learning resource

The use of the environment as a learning resource so that students feel happy in learning, the environment (physical, social and cultural) can use the environment does not have to be outside the classroom. Materials from the environment can be brought into the classroom. So it can save time and costs. Utilization of the environment can develop a number of skills such as observing, taking notes, formulating questions, hypothesizing, classifying, writing, and making pictures.

h. Provide good feedback to improve learning activities.

Providing feedback from the teacher to students is a form of interaction between the two, the feedback given by the teacher should be done politely, so that it does not dampen students' desire to learn but on the contrary can motivate students' enthusiasm for learning.

i. Distinguish between physical and mental activity.

Physically active, such as sitting in groups and face to face, is not an assessment in Paikem learning, but mentally active, such as frequently asking questions, supporting other people's ideas, and being calm in delivering material or in answering questions is what counts in Paikem, the development of fear is very contrary to PAIKEM principles.

D. The strengths and weaknesses of the PAIKEM learning model.

1. The advantages include:

a. Learning is more interesting or recreational
b. There is activeness of students both physically, mentally and emotionally
c. There is teacher and student interaction
d. Learning is more varied (not boring)
2. Weaknesses, among others:
a. Teachers have to go the extra mile in applying this learning.
b. Teachers must be able to create a conducive classroom.
c. Teachers who do not have high creative power will not be able to apply the Paikem learning method.

E. Application of the PAIKEM learning model.

Master's ability	**Learning Activities**
Teachers design and manage learning activities that encourage students to play an active role in learning	Teachers carry out various learning activities, for example: Test group discussion Solve the problem Searching for information Writing reports/stories/poems Visit outside the classroom
Teachers use a variety of learning aids and resources	According to the subject, the teacher uses, for example: Available tools or self-made ones. Picture Case study Source person Environment
The teacher provides opportunities for students to develop their skills	Student : Conduct experiments, observations, or interviews. Collect data/answers and process them yourself Draw a conclusion Solve the problem, look for your own formula Write reports/other works in your own words
The teacher provides opportunities for students to express their own ideas orally or in writing	Through : Discussion More open questions The results of the work are the students' own thoughts.
The teacher adapts learning materials and activities to the students' own abilities	Students are grouped according to ability (for certain activities) Lesson materials adapted to the ability of the group. Remedial or enrichment assignments are given
The teacher relates learning activities to the everyday experiences of students	Students tell or use their own experiences Students apply what they learn in their daily activities
Assessing learning activities and student learning progress continuously	The teacher monitors student work The teacher provides feedback

To apply PAIKEM the teacher must also create a learning syntax. The PAIKEM learning syntax is essentially a reduction of various learning models. The example of paikem syntax that uses the lecture model or method plus role playing (role playing)

Stage	**Learning Activities**
Stage 1 Introduction, motivating student groups, namely role/player groups and groups of spectators and observers.	The teacher offers a good problem,: The problems are real The problem is related to student life The problem stimulates students' curiosity

	This problem is problematic and allows various alternative solutions to be used
Stage 2 Choose a role	The teacher and students discuss and agree on the description of the character to be portrayed. Offer those roles to deserving students.
Stage 3 Prepare observers	Observer : Assess the level of suitability of the role to be played with the real problem Assess the level of effectiveness of the behavior shown by the actor Assessing the actor's level of appreciation of the character (role played)
Stage 4 Prepare for the stages of the role	Setting up the cast scene Prepare places and facilities that support the story
Stage 5 cast	Actors begin to play their respective roles Time is based on the complexity of the problem being played
Stage 6 Discussion and evaluation	The teacher with the actors and observers exchange ideas to assess the parts that have not been played by the actors perfectly
Stage 7 Repetition of the cast.	Repetition of imperfect to perfect casting
Stage 8 Discussion and re-evaluation	Reviewing the re-enactment in stage 7, discussion and evaluation of the system is the same as in stage 6
Stage 9 Share experiences and draw generalizations	Draw the main benefits contained in role playing (helping students gain some valuable new experiences through interaction activities with others)

CONCLUSION

The PAIKEM / PAKEM learning model comes from the concept that learning should be child-centered and learning should be fun so that students are motivated to continue learning on their own without being ordered and so that students do not feel burdened or afraid. For this reason, the aspect of fun learning becomes one of the important aspects of learning. Especially in science learning activities where teachers still use conventional methods, even though the material in science learning is very interesting to learn when using fun learning. PAIKEM / PAKEM is one of the fun learning methods, in addition to being an effort to continue to motivate students so that students conduct exploration, creation, and experimentation as well as PAIKEM learning objectives help students develop high-level thinking skills, critical thinking, and creative thinking.

REFERENCES

1) Ahmadi, Sofyan, A. (2011). PAIKEM GEMBROT (Pengembangan Pembelajaran Aktif, Inovatif, Kreatif, Efektif, Menyenangkan, Gembira , dan Berbobot. Jakarta : PT Prestasi Pustakarya
2) Indrawati. 2005. Model pembelajaran langsung. Bandung : Pusat Pengembangan dan Penataran Guru Ilmu Penetahuan Alam Dikdasmen.
3) Pamungkas, A., Subali, B., & Lunuwih, S. (2017) Implementasi Model pembelajaran IPA berbasis kearifan Lokal untuk meningkakan kreativitas dan hasil belajar siswa. Jurnal Inovasi pendidikan IPA , 3(2), 118-127
4) Khairani, C. (2015) . Strategi Pembelajaran Paikem (Scrambel) dan Peningkatan Motivasi Belajar siswa SDN 6 Selebung Ketangga. Palapa : Jurnal studi keislaman dan ilmu pendidikan, 3 (1), 23-39 https://doi.org/10.36088/palapa.v3i1.750.
5) Hayati, S., & Lailatusassaadah. (2016). Validitas dan Reliabilitas Instrumen Pengetahuan pembelajaran Aktif, kreatif dan menyenangkan (Pakem) menggunakan model Rasch. Jurnal ilmiah didaktika, 16(2) 169-179. https;//doi.org/10.22372/jid.v16i2.593

6) Darmadi, H (2015) .Tugas, peran, kompetensi dan Tanggung jawab menjadi guru profesionl. Jurnal edukasi, 13 (2). https://doi.org/10.31571/edukasi.v13i2.113
7) Marjuki, (2016). 181 Model Pembelajaran Paikem Berbasis pendekatan Saintifik .Bandung : Remaja Rosdakarya
8) Kulsum, Umi. (2011) .Implementasi Pendidikan Karakter Berbasis PAIKE<. Surabaya : Gena Prataman Pustaka
9) Hamzah B. (2012). Belajar dengan Pendekatan PAIKEM, Cet. III . Jakarta : PT Bumi Aksara.