



Instrument Preparation the Effect of SETS Approach Based Learning on Students Learning Motivation

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Abstract. As a result of SETS, students are more eager to study course material because it connects to real-world situations encountered in daily life, enabling them to gain a deeper understanding of the knowledge they possess. SETS can also inform students that technology impacts the environment and society as a whole. There is an expectation in SETS learning that when science is employed to benefit society, particularly in the form of technology, Its processes and goods won't impede or negatively effect the environment or the general public. In order to fully understand how the concepts studied relate to each other and how that relationship affects learning, instructors and students must investigate all potential outcomes of the.

Keywords: methods · SETS · approaches · science · learning

1 Introduction

In a learning environment, learning is a collaborative activity involving students, teachers and teaching materials. Teachers provide assistance to students in making learning happen, which enables students to gain knowledge and information, develop their skills and personalities, and shape their perspectives and beliefs. Learning takes place in stages to help pupils learn effectively. In terms of education, teachers aim to help students understand and master the material being taught so that they can achieve a set goal. This teaching method can also cause changes in students' perspectives and abilities, but it appears to have been created solely by the teacher, just saying. Learning requires communication between instructors and students.

According to Permendikbud No. 22 of 2016, the educational process is conducted in an intelligent, motivating, fun, stimulating way, encouraging kids to actively engage and providing enough opportunity for initiative, resourcefulness, and freedom in line with talents, interests, and students' bodies and minds, as well as their interests. Student

motivation and teacher inventiveness are two important factors influencing the quality of learning. High motivation among students and support from educators who can benefit from this will result in the successful completion of learning objectives. The drive to learn motivates students to pursue learning objectives like comprehending a subject or moving their knowledge forward.

College students who are naturally inspired, who are more self-reliant and don't depend on elements outside of themselves for their readiness to learn, are students who have serious areas of strength. Readiness to learn depends in particular on factors beyond the student's control, unlike students whose learning inspiration comes from external sources. However, in general, involuntary inspiration occurs frequently, especially in children and young people who are going through the growth process.

One of the many learning models that can be used to improve student motivation is SETS. Students are encouraged to make connections between the sciencelated components of learning and those related to the environment, technology & society through learning the SETS vision. 2017 (Atminiati & Binadja) Students can also benefit from SETS learning by observing objects around the school and using the environment to gain insight into the content being studied.

Students are taught to use both the environment and the community to gather information as they can interact in the community while seeking information. And with today's technology, students can put the theory they've learned into practice.

To solve the difficulties they face on a daily basis, Students will essentially learn how to think globally and behave locally and internationally through SETS education. To find agreements that involve SETS training in a coordinated way in the complementary relationship between components of science, climate, innovation and society, the issues that are now in the public spotlight are brought to the classroom.

Depending on their degree of thinking and reasoning skills, students are taught how to apply a global perspective to solve local, national and global problems. In order to identify answers, students are encouraged to be sensitive to social issues and to take an active role in doing so. This SETS approach can get around the traditional education system's flaws, which allow students to continue studying a topic without knowing how well they understand it (whether the topic has been fully or partially mastered and what basic skills have been acquired).

Whereas science education nowadays must include the ideals included in science and technology as well as being development oriented. According to the description provided, research is needed to determine whether student ownership or learning influence exists for students to use the knowledge they have learned in practical contexts.

2 Theoretical Theory

2.1 Learning

A person's ability to learn has an impact on how they acquire skills, information, and positive attributes that they may use in their daily lives. In learning, there are two other people engaged: students as learners and educators as facilitators.

Learning is a collective process including pupils, pupils and teachers, and learning resources in a learning environment, as per Permendikbud No. 103 of 2014 Teacher education in primary and secondary schools. Because of the interaction between education that occurs at institutions of higher learning, households, and communities, learning is a dynamic process that promotes each student's aptitude and character development.

By means of this cycle, students have the opportunity to develop their real potential in the knowledge, skills, and viewpoints (both profound and social) that will always be needed by society, nation, and government support for human existence. Learning is geared toward developing students' ability to live as dedicated, approachable, innovative, creative, and soulful citizens and who are willing to make a significant contribution of society, their nation, their state, and the whole human species. For pupils to engage completely, express themselves creatively, and act autonomously in line with their abilities, interests, and requirements for physical and mental growth, inspiration is required.

2.2 Learning

The word "motivation" comes from the word "reason", which refers to a state of being that motivates people to engage in specific behaviors, consciously or unconsciously, in order to accomplish desired objectives [1]. People might be motivated by attitudes or ideas that inspire them to conduct specific activities in consistent with the goals people want to accomplish. These attitudes and convictions create a race that gives individuals the motivation to achieve their goals.

Motivation can also be seen as an inner state (availability). A person's energy can change, which is seen by how his feelings grow and are followed by an improvement in his ability to perform tasks. The broad motivation that learners have to design, enforce consistency, and provide guidance for having to learn activities to achieve the desired results are examples of learning activity inspiration. Inspiration is necessary for learning activities as someone who lacks learning motivation will not be able to complete them.

Motivation to learn can be seen as a need to engage in a specific learning process that originates both within and to encourage curiosity about learning, one must go beyond the individual [2]. Students are motivated to study both internally and externally to meet their educational objectives. This drives students' never-ending drive to succeed, supports their want to learn, and anticipates the achievement of their desired ideals.

The degree to which a pupil is motivated to learn affects his or her performance. Assuming there is an incentive to learn, the learning outcomes will be perfect. Learning outcomes better when motivation is given with greater precision. As a result, the efficacy of students' learning efforts is determined by their motivation [3]. In educational processes, the want to learn is essential since it develops learning zeal. Therefore, a lack of desire to learn will result in students having less desire to study.

The part of developing inspirations is to provide inner and exterior comfort to pupils who are learning to modify their behavior, typically with few signs or supporting components.

The following are examples of learning inspiration indicators [4]:

1. The ambition to succeed never stops.
2. Learning is motivated and necessary.

3. There are expectations and goals for the future.
4. There is a sense of accomplishment in learning.
5. There are several unique learning tasks.
6. The presence of a helpful atmosphere in which a learner may learn successfully.

The following are examples of learning motivation indicators [5].

1. Take on the challenge with perseverance.
2. Capable of overcoming obstacles (not easily satisfied).
3. Express interest in a range of adult issues.
4. Likes to operate alone.
5. He soon gets bored of monotonous activities.
6. Able to defend his position.

Learning motivation also include the following [6]:

1. A strong desire to learn.
2. The willingness to waive other responsibilities or commitments.
3. The amount of study time allotted.
4. Resilience in completing the task.

According to the numerous expert viewpoints above, the following categories can be made for the signs and traits of learning motivation:

1. A strong desire to act.
2. Resilience in carrying out the mission.
3. The amount of time spent learning.
4. Fortitude in the face of difficulty.
5. The capacity to release additional obligations.
6. Future aspirations and objectives.
7. How to function alone.

2.3 SET Learning Model

Students' are urged to link many aspects of their science-related studies and components of the environment, technology and society through learning the SETS vision. [7] Students can use the school environment to obtain information about the content they are studying with the help of SETS learning, which also benefits the participants. Students use the school's surroundings to explore things there.

The benefits of the SETS learning paradigm can provide students with the execution of logical working methods. In order for students to produce well- coordinated and coherent work. Develop your students' communication skills and their desire to study. Help pupils recognize and understand science, technology and the potential harm they could do to others in their daily lives. [7] Below are some benefits of the SETS learning approach [8]. (a) Can further strengthen interaction, management and inquiry skills, highlighting excellent learning techniques that take into account mental, emotional and psychomotor spaces, highlighting the role of science in linking and bridging study disciplines, (b) From the standpoint of learning, emphasizing student accomplishment can be integrated with other methods, warning the teacher that it is not necessarily a trustworthy source of information, (c) When goals, cycle and learning outcomes are seen

from the point of view of assessment, there is a relationship between them. In addition, there are comparisons of skills, development and study bases, and the usefulness of the program is also evaluated. it is a relationship between them. In addition, there are comparisons between skills, development and study bases, and the utility of the program is also assessed. it is a relationship between them. In addition, there are comparisons of skills, development and study bases, and the usefulness of the program is also evaluated.

Students are influenced by SETS to develop their ability to look at things through the four lenses that SETS contains. Students are challenged to think critically using the SETS learning approach in order to develop children's learning thinking styles. The following are the characteristics of the SETS approach:

- a. Science is still taught in the classrooms.
- b. Students find themselves in situations where they can consider the potential of science to advance society.
- c. Students are given information on the many possible outcomes of time spent advancing science.
- d. Students are asked to understand how the numerous components of SETS that affect the various interconnections between these components relate to the scientific components under investigation.
- e. When the logical concept turns into innovation, students are encouraged to think about the advantages and disadvantages of using it.
- f. Depending on students' background knowledge, constructivism allows teachers to ask students to discuss SETs from a variety of viewpoints [9].

3 Method

3.1 Research Methods

Quantitative data gathering methods are employed. The approach utilized is called literature analysis. Additionally, this method's characteristics make humans the subject of data collecting. This type of study is experimental by nature. Experimental research involves observing the effects of one or more treatments on a topic. A near experiment was used as a research project. The independent variable and the dependent variable are the two variables in this study. The SETS learning model is the dependent variable while students' motivation to learn is the independent variable (Science, Environment, Technology, & Society).

The research was carried out within SDN Sukamanah 03 as well as SDN 01 Karangtengah. The total number of participants in this study was 153, divided into 4 classes at SDN 01 Karangtengah and SDN Sukamanah. Class 5A of SDN 01 Karangtengah, which had a total of 82 pupils and served as an experimental class in this study, had 37 students. Class 5, which included 45 children, was the control group of SDN Sukamanah 3.

Pretest and posttest instruments were used in this study, and each item measured a distinct aspect of students' motivation to learn. Before being utilized in the study, questions are assessed for reliability, validity, discriminating power, & degree of difficulty. Data analysis to examine homogeneities, normality, and theories. The sample method

includes observation, interview, scaled questionnaire, and documentation. The Statistical Product & Service Solution (SPSS) versions 25.0 for Windows PCs was used to perform the research. Data processing and assessment came next after the relevant data had been gathered.

4 Result and Discussion

The creation of the grid is the first step of this investigation. The criteria determined by the Indicators are used to organize the grids. Below are the indications for each variable:

1. The students are very curious.
2. Students approach their work with a persistent attitude.
3. Study time is set for students.
4. Students are persistent in the midst of difficulties.
5. Students are willing to give up other tasks or assignments.
6. Future goals & dreams are present in the students.
7. Students like to work independently.

The following are SETS learning indicators:

- a. Continue to emphasize the importance of studying science.
- b. Student's find themselves in situations where they have to apply scientific concepts to create innovations that benefit society.
- c. Students are provided with information on the many outcomes that could occur as a result of integrating science with innovation.
- d. Students are tasked with comprehending how the science-related components under discussion relate to the SETS (Science, Environment, Technology, and Society) components that have an impact on the numerous connections between the SETS components.
- e. When the concept of science is turned into a related invention, students are encouraged to think about the advantages and disadvantages of using it.
- f. Students are invited to talk about SET in various categories and using various important information that has been transferred by the interested student. They are arranged in a grid as follows according to the indicators.

It is then assembled into a tool to motivate learning based on the above grid. The author uses a questionnaire (questionnaire) technique to assess learning inspiration, one of several assessment procedures that can be applied (Table 1).

It is then assembled into a tool to motivate learning based on the above grid. The author uses a questionnaire (questionnaire) technique to assess learning inspiration, one of several assessment procedures that can be applied. The writer should create the assertion points for the questionnaire in this way.

When selecting a questionnaire as a tool for gathering data, there are a few things to take into account: (1) with respect to perception and interviewing procedures, it can gather information from a huge number of topics; (2) Since respondents can express their opinions more honestly and The information received is more objective than when it is gained through interviews since it is not impacted by the psychological character

Table 1. Learning motivation based on the above grid

No	Appearance	Indicator	Declaration	
			<i>Positive</i>	<i>Negative</i>
1	Eager to learn and attentive to the teacher's explanations	The students are really curious In the face of challenges, students are persistent (they are not quickly satisfied) There is an interest in researching course material.	I find the subject the instructor is discussing to be interesting. When I run into learning challenges, I become excited, I want to know much more about lessons the teacher is teaching.	The issue the teacher is discussing has my attention. When studying is difficult, I get lazy I'm not thrilled to find out what the teacher said
2	If you're not sure, ask	Students want to ask questions	When I don't comprehend that what teacher is saying, I like to ask questions	I act indifferent when I don't understand the teacher's explanation
3	Respond to requests from educators and other classmates	Answering teachers' questions is something students are excited to do Student's are interested	The data that the teacher gave interests me The inquiries made by	The teacher mentioned something that I don't comprehend I don't pay close attention to what

when there is time to assess the replies or as a result of the contact between the research and the study subject; (3) they can collect data on cognitive and emotional processes impossible to observe through observation;

Student Learning Questionnaire Tool

Instructions for completing the questionnaire:

1. Fill in your personal data in the space provided.
2. Read each point of the question carefully, then answer based on the real situation by placing a check mark (✓) in the appropriate answer box.
3. This increase does not affect the value in learning.
4. The categories used to answer the questions are S (always), KK (sometimes), J (rarely), TP (never).

First name:

No absences:

Class:

As the graph demonstrates, There are several techniques to evaluate motivation, including direct perception, controlling by others, and self-reporting. The table lists many

Table 2. Instrument

No	Declaration	Score
1	I'm looking forward to hearing what the teacher has to say	
2	I rejected the teacher's advice	
3	The teacher's illustration intrigues me	
4	I don't act like the teacher	
5	I make notes about the lessons the teacher has taught	
6	I'm always concentrated when I'm learning	
7	Every lesson I take, I really think so	
8	I display indifference when I don't comprehend the teacher's explanation	
9	I communicate with my classmates about learning	
10	I collaborate with pals in groups outside of school	
11	I follow the teacher's directions when completing homework	
12	When I have difficulty understanding the content, I always question the teacher	
13	I'm pleased that I can grasp challenging queries or content	
14	Whenever I encounter learning challenges, I prefer to gather companions for a discussion	
15	I carefully listen to the teachings the teacher is teaching	
16	Throughout the whole class, I paid attention to the instructor's explanations	
17	I finish the teacher's assigned practice questions on time	
18	I don't get excited when I talk to friends or teachers	
19	I finish the assignment my teacher gave	
20	With pals, I really like doing schoolwork	

motivational categories for learning. The construction of something like the questionnaire was done based on the assertions that had been made regarding learning motivation and utilized for the evaluation materials connected to learning motivation (Table 2).

5 Conclusion

In order to meet the established learning objectives, motivation is crucial. Real students are not the only source of inspiration; teachers should also contribute to encourage student learning. The presence of inspiration will give excitement, so students will know the extent of learning. Motivation to learn can arise on the off chance that college students deeply desire to learn. To best achieve established learning goals, college students should be motivated both internally and extrinsically.

The SETS technique is one of several learning innovations that can be created to increase student motivation to study. This SETS strategy can overcome the disadvantage of the outdated educational model where students are free to continue studying a topic

without clearly understanding how well they are understanding it (whether the topic can be fully or partially mastered and what basic skills are been reached). The SETS strategy has a number of drawbacks, including: 1) It is difficult to get students to associate the four components of SETS. 2) Learning usually takes longer. 3) Only applicable to upper-class people. The tools are currently being assembled for this study as further validity testing needs to be performed.

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