



Teachers' Views Regarding the Character of Students' Perseverance in Science Learning

Sukarno¹, Khin Tan Win², Dong Anh Chi Hong³

¹Faculty of Teaching and Education, UIN Fatmawati Sukarno Bengkulu, Bengkulu, Indonesia

²Department of Physics, Loikaw University, Loikaw, Myanmar

³Faculty of Fundamental Science, Ho Chi Minh City University of Transport, Ho Chi Minh, Vietnam

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ABSTRACT

Purpose of the study: The primary objective of this research was to describe teachers' views regarding the importance of students' persistent character in learning science when teaching class VII students at Junior high school.

Methodology: This research used the qualitative Miles and Huberman method with a sample of 1 teacher representing 3 science teachers at Junior high schools in Indonesia, Myanmar, and Vietnam. Researchers conducted interviews with science teachers. The sampling technique used was purposive sampling. Research data was taken using the interview method. The data analysis used is the results of interviews linked to theories from various literature.

Main Findings: The findings of this research show that the results of teacher interviews at Junior high school, teachers said that persistence plays an important role in creating an effective learning environment. Students who have a high level of perseverance will achieve better results in understanding complex science concepts and prepare students who are tough and never stop learning.

Novelty/Originality of this study: The benefit of this research is to know the importance of students' persistent character in understanding science learning. Hopefully, future researchers will be better off adding student and teacher research methods as samples and questionnaires or question research instruments. This aims to understand better the character development indicators of student persistence in learning.

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Corresponding Author:

Sukarno,

Faculty of Teaching and Education, UIN Fatmawati Sukarno Bengkulu,

Pagar Dewa, Kec. Selebar, Kota Bengkulu, Bengkulu 3821, Indonesia

Email: sukarnobengkulu@gmail.com

1. INTRODUCTION

According to Lestari, Education is an interaction between the factors involved in achieving educational goals [1]. Education is very important in developing a person into a qualified professional person with a strong moral foundation. Education today is not only limited to providing knowledge, but also to developing various aspects of personality, including the character of perseverance. The character of perseverance is very important in facing challenges that often test a person's patience and endurance. Education is the first step to bring change [2]. Education is something that is very fundamental for humans for their lives. Education is a systematic process that involves the transfer of knowledge, skills, values, and culture from the older generation to the younger generation through various methods, such as teaching, training, or experience, with goals to shape the intellectual, social, emotional, and moral development of individuals and prepare them for roles and responsibilities in society [3].

Learning science subjects basically requires persistence [4]. Science learning is very important in terms of advancing science and technology [5]. This cannot be separated from the role of science in the advancement of science and technology, which has changed many views of life [6]. Because learning science requires mastery of concepts that are often complex and require time and effort, persistence is very important. The key to gaining the knowledge and skills required in this field is persistence when studying.

Science subjects are one of the fields of science that has experienced significant development in 21st century learning [7]. Learning science is a field of knowledge of the universe and substances that is used to expose all the general wonders that exist based on curiosity, certainty and perseverance [8]. Science is the result of methodical, disciplined and orderly human thinking as an innovative process emphasized by a sense of knowledge and perseverance that can be matched by others [1]. Curiosity, faith, and perseverance are the cornerstones on which IPA is built. Perseverance indicates the effort required to understand difficult concepts, certainty indicates scientific accuracy and reliability, and curiosity reflects the desire to know and understand.

One of the systematic and disciplined learning methods is persistence because it is an effort to succeed in learning [9]. Diligent students will understand the value of hard work, hone problem-solving skills and be responsible for academic progress [10]. A student's ability to remain focused, persevere, and persevere in facing challenges or set learning goals is reflected in the student's mental and emotional character, known as their perseverance character. According Adha and Permatasari, perseverance involves working as much as possible without getting tired, without wasting time, and getting things done quickly and effectively [11]. Determined students will learn the importance of perseverance, hone their problem-solving skills, and take responsibility for their academic success [10]. Diligence in carrying out tasks, namely working non-stop for a longer period of time until the task is completed [12].

Motivation can increase effort, resilience, and perseverance. It also has a significant impact on learning and helps guide a person towards certain goals [13]. Student motivation is demonstrated by their undeniable persistence in carrying out assignments and achieving achievements [14]. Students' persistence in carrying out their assignments and achieving success is a good indicator of their learning motivation. Perseverance among students is a strong measure of motivation, because it can increase their involvement and drive to achieve academic achievement.

Increased enthusiasm and persistence in learning is driven by interest in learning [15]. To make student persistence more clearly visible during the learning process, learning must be student-centered and focused on one student at a time [16]. According [17], an attitude of persistence in learning is an indicator of increasing students' learning motivation. Focusing on each student individually can increase persistence. Because it allows teachers to have a deeper understanding of each student's needs, interests, and learning styles. And student persistence is an important part of increasing student success in learning.

A scientific attitude includes students' persistence in learning as an effort to look within or take action to overcome problems [18]. To show their high level of self-persistence during the learning process, students show the courage to do it without considering whether what they are saying is right or wrong. They also continue to strive to be the best when creating projects [19]. One important component of a scientific mindset is persistence. A constructive and progressive scientific attitude is rooted in students' determination to continue trying, facing challenges, and acting without fear of failure. A productive academic attitude is built on students' persistence in learning, focusing on their courage in taking initiative, overcoming obstacles, and striving for the greatest results in each assignment or project.

Several things such as curiosity, respect for facts, critical thinking, teamwork, and perseverance, can be used to measure student attitudes. Students' persistence, enthusiasm and enjoyment in continuing their education are indicators of their success in learning [20], [21]. Success in learning is characterized by students' persistence, enthusiasm and enjoyment of their studies. This shows that students' attitudes towards learning are observed from a cognitive and emotional perspective, including motivation, enthusiasm, and enjoyment.

A serious attitude in studying to gain an understanding of the material being studied is known as persistence in learning [22]. It takes persistence and great effort to overcome obstacles to be motivated to succeed in learning [23]. An attitude of honesty and a strong commitment to gaining a thorough understanding of the material are characteristics of persistence in learning. This includes the need for perseverance in achieving learning goals through effort and focus. Education emphasizes the value of a sincere mindset, perseverance, and the drive to overcome problems and especially in the learning process.

2. RESEARCH METHOD

The research method used is descriptive qualitative. A qualitative approach means collecting data not in the form of numbers, but rather the data comes from interview scripts, field notes, personal documents and other official documents. Qualitative research methodology can provide descriptive data that can be expressed orally, in writing, or through several types of policies [24]. Qualitative data analysis activities are carried out

interactively and continuously until completion, so that the data is saturated. This analysis consists of 4 main things: Data collection, data reduction, data presentation and conclusion drawing/verification.

According to Miles and Huberman's theory, the interactive nature of data collection with data analysis, data collection is an integral part of data analysis activities. Data reduction is an effort to summarize the data, then sort the data into certain concept units, certain categories and certain themes [25]. The location of this research is at Junior high school in Indonesia, Myanmar and Vietnam. The focus of this research is the teacher's views regarding critical thinking skills and the character of students' persistence in the classroom learning process. The resource persons in this research were science subject teachers at Junior high school.

Table 1. Interview Grid

Question
How do you define the character of students' persistence in learning science?
According to you, why is persistence important in learning science?
How do you plan science learning to attract students' interest and motivation to remain diligent in studying?
How do you observe students' persistence in class when learning science?
From what you have observed, what are the examples of students who have shown the character of perseverance in learning science?
Are there special programs or activities that aim to develop students' persistence in learning science?
How do you provide feedback to students to encourage them to increase their character of perseverance in learning science?

Data collection is a systematic and standard procedure for obtaining the necessary data or information. The data collection techniques used in this research. The interview technique used in this research was carried out using a semi-structured method. Interviews were conducted by asking questions directly to the resource person to obtain information regarding the character of students' persistence in the science learning process in class. Interviews with sources were conducted directly.

The data analysis technique in this research which refers to the research problem is as follows:

1. Data Collection, In the data collection process, data analysis can also be carried out at the same time. The data is everything that is seen, heard and observed. The data obtained is not final data that can be directly analyzed to draw a final conclusion.
2. Data Reduction, This stage continues continuously as the research implementation progresses. Intended to better close, classify, direct, remove unnecessary data and organize it.
3. Data Presentation, Data presentation is a collection of structured information that provides the possibility of drawing conclusions and taking action. By paying close attention to the presentation of the data, it is easier for researchers to understand what is happening and what should be done.
4. Drawing Conclusions/Verification, Based on the data that has been reduced and presented, the researcher makes conclusions that are supported by strong evidence at the data collection stage. Conclusions are answers to the formulation of problems and questions that have been expressed by researchers from the start.

3. RESULTS AND DISCUSSION

The results of the literature study regarding management laboratories were analyzed using the table matrix shown in Table 1.

Table 1. The results of interview

Question	Answer
How do you define the character of students' persistence in learning science?	The character of students' persistence in learning science can be said to be the students' ability to maintain their concentration or focus when studying, always trying and persisting if there are obstacles during the science learning process. Have seriousness and perseverance to learn even when faced with challenges and the ability to overcome obstacles or problems that may arise when carrying out science learning.
According to you, why is persistence important in learning science?	For science learning, there are many complex theories that require sufficient time and effort to understand them. And also when carrying out practicums/experiments we have to get really appropriate results so that persistence is really important, they have to be serious and not careless when carrying out activities and later they will get the right results.
How do you plan science	The plan might start from making lesson plans, then creating learning

learning to attract students' interest and motivation to remain diligent in studying?	media or various learning models, and utilizing technology such as making interesting quizzes or interesting introductions to science. With this we can see the changes that have occurred in science lessons. They will be more diligent and enthusiastic in participating in learning.
How do you observe students' persistence in class when learning science?	From what I have observed, students' persistence when learning science in class can be seen from students who actively participate, whether during discussions, answering questions or even providing responses to the material being taught. Perseverance can also be seen from their seriousness when studying, their ability to complete the assigned tasks well within the allotted time. Students who are diligent tend not to be easily influenced and will remain focused on the tasks they are doing.
From what you have observed, what are the examples of students who have shown the character of perseverance in learning science?	For example, when in practicum they are quicker to collect the results they have made, when in theoretical learning we can assess them in terms of, for example, when asked several questions, they will be quicker to answer these questions and their success in completing the task well, as well as seen from their attitude. who never gives up, always tries when faced with an obstacle in learning.
Are there special programs or activities that aim to develop students' persistence in learning science?	This special program is like asking students to create a project of a work or simple teaching aids related to science material. So that they are trained to be able to solve problems and keep trying even when faced with challenges.
How do you provide feedback to students to encourage them to increase their character of perseverance in learning science?	By giving appreciation in the form of additional marks/prizes to students who get the highest marks, can solve the questions given and so on. This will be a trigger for other students to be enthusiastic and diligent in participating in learning so that they can also gain this appreciation.

Based on the interview table above, the views of teachers at Junior high school regarding the character of perseverance in science learning, namely the students' ability to maintain their concentration or focus when studying, always trying and persisting if there are obstacles during the science learning process. Have seriousness and perseverance to learn even when faced with challenges and the ability to overcome obstacles or problems that may arise when carrying out science learning.

The teacher also said that it is important for students to have perseverance in understanding complex science concepts because in science itself it is very necessary for students to have high perseverance, stay focused and always try so that they are able to do it solve problems. The character of student persistence can be seen from the student's success in fulfilling all stages of learning when solving a given problem. so that students with the perseverance type will have critical thinking skills in solving a problem [26].

In The teacher's assessment of students' persistence in learning Natural Sciences is very important. The development of students' understanding of science concepts, scientific competence, and personal character can be positively influenced by persistence in the context of science learning. Here are some important points in this discussion:

3.1 Character Of Perseverance

Teachers understand how important persistence is in the learning process. A student's ability to remain focused, determined, and not give up easily in the face of problems or difficulties in learning science is known as perseverance. Teachers believe that persistence is an important cornerstone for success and strong skills in learning. According to Hidayah et al, persistent students are never satisfied with the results they receive. As a result, to be successful you have to keep working hard. Perseverance in learning is important with the aim of achieving optimal results [27].

3.2 Perseverance in Learning Science

Teachers say that persistence can help students overcome any obstacles or challenges they may face when grasping challenging science learning. When faced with difficulties, persistence allows students to keep trying, iterating, and solving problems. As a result, they are better able to overcome problems that require resilience and effort. The teacher also said that in order to understand complex science concepts and to solve science questions, it is very necessary for a student to have high perseverance, so that solving the problems themselves will be easy.

3.3 Supportive Learning Approach

Teachers use teaching strategies to help students develop their persistence. This can involve implementing active learning techniques such as project-based learning, experiments, conversations, or learning science through the use of technology. To encourage students to persist, teachers also present problems that are appropriate to their level of understanding [28],[29]. Also by using the help of teaching media. According to Adawiyah, a teacher can also choose from a variety of teaching strategies and learning media to ensure that the learning process runs smoothly and is enjoyable, as desired by students [29]-[31].

4. CONCLUSION

The teacher's view regarding the character of perseverance in science learning is students' ability to maintain their concentration or focus when studying, always trying and persevering if there are obstacles during the science learning process. Have seriousness and perseverance to learn even when faced with challenges and the ability to overcome obstacles or problems that may arise when carrying out science learning. Perseverance plays an important role in creating an effective learning environment. Students who have a high level of persistence will achieve better results in understanding complex science concepts. And the character of student persistence can also be seen from students' active participation in learning, focus in learning and involvement in group activities or projects.

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