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Strengthening Student Discipline through Instructional Strategies in Physics Learning: A Naturalistic Study from Four Pedagogical Perspectives

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ABSTRACT

Purpose of the study: The purpose of this study is to explore the strategies used by physics teachers in building students' discipline within character education. This study offers theoretical insights into discipline formation and practical guidance for teachers to implement character-based strategies in physics classrooms.

Methodology: This study used a qualitative naturalistic approach with purposive sampling. Data were collected through participatory observation, semi-structured interviews, and documentation. Tools used include observation sheets, interview guides, and field notes. The data were analyzed using the Miles and Huberman interactive model. Validity was ensured through triangulation techniques and member checking for data verification.

Main Findings: The findings show that students' discipline in physics learning was very good. Teachers consistently apply structured strategies, methods, and models that promote punctuality, rule adherence, timely task submission, and practical work discipline. Early communication, consistent rule enforcement, and value reinforcement shaped responsible behavior. Most students felt helped by systematic learning patterns. Teacher strategies were closely linked to students' disciplinary character formation in physics class.

Novelty/Originality of this study: This study offers originality by integrating a naturalistic approach to explore teacher strategies in building student discipline through four instructional perspectives: approach, method, model, and strategy. It advances existing knowledge by highlighting value internalization in physics learning, shifting the focus from formal rule enforcement to reflective classroom practices that naturally foster character-based discipline.

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1. INTRODUCTION

Character education is an integral part of the Indonesian education system as stated in the Merdeka Curriculum. Character education needs to be instilled through consistent and continuous habituation activities, including in the school, family, and community environments [1]. The goal of character education is for students to have the basics of knowledge, personality, intelligence, noble morals, and skills needed to live independently and pursue higher education [2], [3]. Character education can improve students' soft skills because these skills

are very much needed to face challenges in work life [4]-[6]. Character education can be integrated with learning materials and activities to shape responsible student personalities [7]-[9].

Empirically, the implementation of character education in physics learning still faces various obstacles in the field. In a study, it was found that although physics learning has the potential to foster characters such as honesty, responsibility, and self-confidence, there are still many students who are less disciplined and have not shown high enthusiasm in learning activities [10]. In Sabaryati et al. [11], it was also noted that the instillation of character values in physics is still not evenly distributed in all schools, especially in terms of active student involvement and explicit integration of values in teaching materials. Meanwhile, Adisti et al. [12] showed that character values such as responsibility and discipline are in the high category (above 80%), but there is significant variation between individuals and classes, which indicates the need for a more systematic and consistent approach. This shows that although there is potential, the strategy for implementing character education in physics learning still requires strengthening based on the context and culture of the school. Increasing awareness of the community and educational institutions that the challenges of the industrial revolution 4.0 and society 5.0 can only be overcome by individuals who have strong and good characters [13], [14].

One of the subjects that can be integrated with character education is physics. In the Independent Curriculum, the main value in the Pancasila Student profile is a disciplined attitude, which must be instilled from an early age. Discipline is an attitude that reflects compliance with rules and consistency in implementing rules and responsibilities [15], [16]. In the context of learning, student discipline reflects the extent to which they value time, tasks, and school rules [17]-[19]. This attitude does not appear instantly, but needs to be built through habituation and role models [20], [21]. Teachers as learning facilitators have the responsibility to instill the values of discipline on an ongoing basis. Discipline is also closely related to self-control and students' internal motivation in following the learning process.

Discipline plays an important role in the success of learning because it is directly related to the effectiveness and efficiency of the teaching and learning process. Disciplined behavior is the process of changing the way of thinking, feeling, behaving, acting, and being responsible because of voluntary learning or self-awareness because of the benefits for oneself [22]-[24] Without a disciplined attitude, students will tend to be unfocused, postpone tasks, and ignore applicable rules [25], [26]. This certainly has a negative impact on understanding concepts, especially in Physics subjects that require precision and orderly thinking. On the other hand, disciplined students are more ready to receive material, are active in discussions, and are responsible for learning tasks [27]-[29]. Therefore, building student discipline is a long-term investment for their academic success.

Students' discipline can be measured through several indicators that appear in their daily lives in the school environment. Indicators of disciplined character include arriving on time, obeying school rules or regulations, completing/collecting assignments according to the specified time, and conducting practical work according to the steps set [30] . In the context of Physics learning, this indicator is seen when students actively participate in practical work, are disciplined in taking notes, and are orderly in discussions. Discipline is not only about obeying the rules, but also a reflection of students' ability to control themselves and form positive habits [31], [32] Character education such as discipline must be formed through a consistent learning environment and provide examples [33]-[35]. Therefore, teachers have a central role in building a classroom culture that encourages discipline, through habituation, positive reinforcement, and educational supervision. The formation of this disciplined attitude is an important foundation in fostering students' responsibility and independence in the future. With clear indicators, teachers can develop the right strategy to improve student discipline.

Previous studies generally focus more on the relationship between student discipline and learning outcomes, as explained [36], without discussing in depth the teacher's strategies in building a disciplined attitude, especially in Physics. In fact, Physics is a subject that demands perseverance, orderliness, and compliance with procedures, especially in practical activities and problem solving. Empirical evidence in the field, as shown by Rohmah et al. [37], reveals that many teachers still experience obstacles in forming a consistent student discipline attitude, as seen from behavior such as late attendance, lack of readiness to learn, and non-compliance with class rules. This shows a gap between the theory of ideal character education and the practice that occurs in the classroom. Therefore, research is needed that specifically examines how Physics teachers build student discipline through structured and contextual strategies.

The urgency of this research lies in the importance of providing a deeper understanding of effective pedagogical approaches in shaping students' disciplined character in the Merdeka Curriculum era. Teachers are not only as transmitters of material, but also as agents of character formation, so that the right strategy is needed in aligning Physics learning with character values. The findings of this study are expected to provide practical contributions for teachers and schools in designing learning that integrates cognitive and affective aspects in a balanced manner. In addition, the research results can also be the basis for developing school policies related to discipline development based on learning approaches. Thus, this research is relevant and significant in answering the increasingly urgent need for character education in high school environments.

2. RESEARCH METHOD

2.1 Research Approach

This study employs a qualitative approach with a naturalistic research type. A naturalistic approach is conducted in naturally occurring situations without manipulation or intervention by the researcher [38], [39]. This study is also descriptive in nature, as it seeks to present an objective depiction of the observed phenomena through direct observations, interviews, and documentation [40]. Therefore, this approach is considered suitable for exploring students' disciplinary character in authentic learning environments.The study was conducted for four weeks with a total of eight observation meetings in class XI F7 in physics. The observation process followed the learning schedule determined by the school. During the implementation of the study, the researcher obtained official permission from Senior High School 10 in Jambi City as the research location. All participants were given an explanation of the purpose of the study and agreed to participate voluntarily. To maintain confidentiality and privacy, the identities of students and teachers are disguised, and the data collected is used only for academic purposes. This is done to comply with the principles of research ethics in education, including participant consent and protection of personal information.

2.2 Sample and Population

The population in this study consists of all Grade XI students at Senior High School 10, Jambi City. The sample was selected using a purposive sampling technique, which is commonly used in qualitative research to intentionally select participants who are expected to provide rich, in-depth, and relevant data [41]. Specifically, Class XI F7, comprising 36 students and one physics teacher, was chosen based on the consideration that they represent the contextual setting of physics learning being investigated. The teacher is also seen as playing a crucial role in shaping student character during classroom activities.

2.3 Data Collection Technique

Data collection in this study used three main methods: participant observation, in-depth interviews, and documentation. Participatory observation was conducted by involving researchers directly in the learning process to record student behavior that reflects time discipline, such as punctuality in class attendance, concentration during lessons, and punctuality in completing and submitting assignments. The interview technique was conducted in a semi-structured manner, allowing researchers to explore the views and experiences of students and physics teachers regarding the importance of discipline in the learning process. Meanwhile, the documentation technique was used to collect data from various documents such as attendance lists, learning tools, student assignment results, and teacher notes. These three techniques are used in an integrated manner to produce complementary data and strengthen the validity of the research results. An example of an observation sheet for class XI F7 is prepared as follows:

Table 1. Discipline Character Observation Sheet

Discipline Aspect	Observed Behavior Indicators
Arrive on time	1. Students are present before the bell rings and are ready in class. 2. The teacher starts the lesson on time and provides reinforcement about the importance of punctuality.
school rules and regulations	1. Students follow class rules without needing to be reminded again. 2. The teacher gives strict instructions about laboratory rules and students obey them during the practicum. 3. Students remain focused and do not play with their cell phones during group discussions.
Complete/collect assignments according to the specified time	1. Students complete and submit daily assignments or projects before the deadline. 2. The teacher gives a clear time limit and follows up if students are late. 3. The student group actively discussed and completed the practical report on time.
Carry out practical work according to the steps set	1. Students carry out practical work based on the worksheet without deviating. 2. The teacher re-explains the practical procedures and closely monitors the progress.

Score Category:
Assessment scores based on a scale of 1–4:
4 = Very Disciplined (≥85% of students demonstrate behavior according to indicators)
3 = Quite Disciplined (70–84%)
2 = Lack of Discipline (50–69%)
1 = Not Disciplined (<50%)

The interview questions for physics teachers and also interviews for XI F7 students are as follows:

Table 2. Physics Teacher and Student Interview Questions

No	Physics Teacher Interview Questions	Student Interview Questions
1.	How do you build initial closeness with students in physics learning?	How does your teacher treat students who are often late?
2.	What initial steps do you take when a student violates discipline, such as arriving late?	Does your teacher often relate physics learning to everyday life?
3.	What methods do you use to get students into the habit of submitting assignments on time?	Do you find the teacher's method of reminding you of assignment deadlines helpful?
4.	Do you use any special methods to ensure that students comply with the work steps in the practicum?	During the practicum, did you follow all the procedures in an orderly manner? What was the reason?
5.	What learning models are often used in physics learning, and how do they affect student discipline?	Do you feel more disciplined when studying in a group than studying alone? Why?
6.	Are students more disciplined when studying in groups than individually? Why?	Are you more disciplined when learning through discussion or when taking notes? Why?
7.	Have you ever made a class agreement regarding discipline?	How do teachers maintain class order during physics lessons?
8.	What is your strategy for enforcing class rules when violations occur?	What do you do if your friend breaks the class rules?
9.	Can physics material be used to instill the value of discipline? Give an example.	In your opinion, can studying physics make you more disciplined in your daily life? Explain.
10.	How do you instill the value of responsibility in physics learning?	In what way do you think your physics teacher taught you to be disciplined?

2.4 Data Analysis Techniques

This study employs the interactive model by Miles and Huberman [42], which consists of three stages: data reduction, data display, and conclusion drawing. In data reduction, raw data are organized and focused on relevant aspects of discipline in physics learning. The reduced data are then displayed in narrative form to identify patterns and categories. Finally, conclusions are drawn through interpretation and continuous verification to ensure the validity and consistency of findings. This process is iterative and occurs throughout data collection.

2.5 Research Procedures

The research was conducted in four stages: (1) Preparation, including identifying the research focus and preparing instruments; (2) Field implementation, involving observations in class XI F7, interviews, and document collection; (3) Data analysis, using the reduction-display-conclusion process; and (4) Validation, through methodological and source triangulation. Triangulation is carried out both technically by combining data from observations, interviews, and documentation as well as in terms of sources by checking the consistency of data between participants [43], [44]. In addition, validation is also strengthened through the member check process, namely asking for responses from participants regarding the interim results obtained by the researcher. After all stages are completed, the researcher formulates conclusions and compiles a final report based on data that has been analyzed in depth.

3. RESULTS AND DISCUSSION

This study uses a naturalistic qualitative approach to explore in depth the strategies implemented by teachers in fostering students' discipline during physics learning. This approach allows researchers to directly observe the learning process in natural conditions without intervention, so that students' discipline behavior can be seen as it is. Data collection was carried out through observations of class XI F7, interviews with physics teachers and several students, and documentation such as attendance records and evaluation results. The data analysis process took place simultaneously with data collection, through the stages of data reduction, descriptive presentation, and drawing conclusions based on emerging strategy patterns. To maintain the validity of the data, triangulation techniques of sources and methods were used, as well as confirmation from participants through member checks to ensure the suitability of the findings with actual conditions in the field. The results of the observations that have been carried out are as follows.

Table 3. results of observations of disciplined character

Discipline Aspect	Observed Behavior Indicators	Score	Field Notes
Arrive on time	1. Students are present before the bell rings and are ready in class.	4	Most of the students arrived before the teacher came in. Only 2 out of 36 students were late.
	2. The teacher starts the lesson on time and provides reinforcement about the importance of punctuality.	4	Teachers consistently start on time, greet students and emphasize the importance of time discipline.
Comply with school rules and regulations	1. Students follow class rules without needing to be reminded again.	4	Students sit in their places, do not make noise, wear complete uniforms, and turn off their cellphones during lessons.
	2. The teacher gives strict instructions about laboratory rules and students obey them during the practicum.	4	Teachers give written & verbal directions. Students follow rules such as wearing lab coats and not touching equipment.
	3. Students remain focused and do not play with their cell phones during group discussions.	4	85% of students submitted on time. The teacher gave a deadline on the board and a reminder in the class group.
Complete/collect assignments according to the specified time	1. Students complete and submit daily assignments or projects before the deadline.	3	Teachers check assignments at the end of the hour. Students who are late are given remedial and recorded.
	2. The teacher gives a clear time limit and follows up if students are late.	4	The majority follow the sequence of practical steps by referring to the Worksheet.
	3. The student group actively discussed and completed the practical report on time.	4	The traveling teacher monitors and provides direct correction if there are any deviations from the procedure.
Carry out practical work according to the steps set	1. Students carry out practical work based on the worksheet without deviating.	3	The majority of students were actively discussing and not playing with their cellphones. Only 1 group joked around.
	2. The teacher re-explains the practical procedures and closely monitors the progress.	4	All groups complete the report and submit it on time.

Based on the results of observations of ten indicators of student discipline behavior in physics learning, a total score of 38 points was obtained from the scores of each indicator, namely 4, 4, 4, 4, 4, 3, 4, 4, 3, and 4. The average observation score is 3.8. This average value is in the "very good" category, indicating that students have generally shown a high level of discipline in learning activities. This can be seen from their regularity in arriving on time, obeying the rules, completing assignments, and following learning activity procedures in an orderly and consistent manner. From the observation results, it can be seen that students show very good discipline in terms of attendance in physics classes. Most of them were already in class before the bell rang and immediately prepared themselves to study. Only two students out of thirty-six were recorded as being late, and they quickly adjusted. Teachers also always start lessons on time and consistently reinforce the importance of time discipline. This reflects the success of a learning approach that fosters time awareness from the beginning of the learning process.

Figure 1. Students arrive before the school bell rings

Student compliance with school rules was relatively high during the observation. When in class, students sit in their proper places, wear complete uniforms, and do not play with their cell phones while teaching and learning activities are taking place. During the practicum, students also follow the procedures applied in the

laboratory room. The teacher gives written and verbal laboratory instructions before the practicum, and students obey the rules such as wearing lab coats and not touching equipment without permission. In group discussions, students remain focused even though there is one group that has a light joke. Overall, this regularity shows the role of the cooperative learning model in supporting the creation of an orderly learning environment.

Figure 2. Students obey the rules while in class

Students' responsibility in completing assignments shows good results, although not yet completely perfect. Most students submit assignments on time, and teachers have set clear deadlines via the board and reminders in class groups. However, there are still students who are late in submitting assignments, so the teacher provides remedial work and records the delays. This time limit and follow-up is part of a systematic and responsible teaching method. Thus, students' academic discipline is maintained and slowly increases.

Figure 3. Complete and submit assignments on time

The implementation of practical work by students tends to be in accordance with the instructions in the Worksheet. The majority of students followed the practicum procedures well and demonstrated active cooperation within the group. The teacher also provides direct supervision by re-explaining the steps before the practicum begins. Although there was one group joking around, this did not disrupt the overall course of the activity. This situation shows the success of the teacher's strategy in managing the practical class to remain disciplined and focused on learning objectives.

Figure 4. Students carry out online practicum with PhET simulation

After conducting interviews with teachers and students, several points of teacher strategy were obtained which will be explained as follows.

3.1. Teacher strategies in building students' disciplinary attitudes in physics learning through learning approaches

The learning approach used by teachers has an important role in shaping students' disciplinary attitudes, especially in the context of physics learning which demands precision, punctuality, and active involvement.

Through the right approach, teachers can create a learning atmosphere that encourages students to obey the rules, respect time, and be responsible for the tasks given. The learning approach is not only a framework in delivering material, but also a strategy to instill implicit discipline values. Teachers can utilize various approaches such as scientific, contextual, or problem-based approaches to foster discipline awareness through learning activities. The results of interviews and teachers related to the learning approach are as follows.

Table 4. Physics Teacher and Student Interview Answers

No	Teacher Questions and Answers	Student Questions and Answers
1.	How do you build initial closeness with students in physics learning? Answer: " *Usually I start with light things like asking how they are, or discussing everyday events that are connected to physics, for example why the AC temperature can be stable. From there, students feel closer and more comfortable, then start to be enthusiastic about learning. This is important so that they can be open and easily directed to obey the rules.* ".	How does your teacher treat students who are often late? Answer: " *Usually my teacher doesn't get angry straight away, but asks me first why I'm late. Then he reminds me slowly. But if it happens too often, then he reprimands me more seriously. So it feels fair, and makes me realize the importance of being on time* . "
2.	What initial steps do you take when a student violates discipline, such as arriving late? Answer: " *I don't immediately reprimand them harshly. Usually I talk to them after class. I ask them why, then explain that time is important, especially in experiments. This is a more humane approach and is usually effective, students become aware of it themselves.* "	Does your teacher often relate physics learning to everyday life? Answer: " *Yes, very often. For example, when discussing heat, the teacher gives examples of boiling water or why a thermos can maintain temperature. So I feel that studying physics is important, and because of that I am more focused. I don't want to skip or be late* ."

The interview results show that physics teachers build discipline through a humanistic and contextual approach. Teachers try to build closeness with students from the beginning of learning to create a sense of mutual trust. In addition, teachers also often relate physics material to everyday life, which makes learning feel relevant to students. With a comfortable and friendly learning atmosphere, students are more open to the rules and tend to be responsible for the tasks given. This situation encourages the growth of natural and sustainable discipline in learning.

The approach used by the teacher is in line with Carl Rogers ' humanistic theory which emphasizes the importance of emotional relationships between teachers and students to create a conducive learning atmosphere. This theory assumes that students will develop optimally in an environment that supports and values their individuality. The contextual approach, as proposed by Johnson, emphasizes the importance of linking subject matter to students' real experiences to make learning more meaningful. With this approach, students not only understand concepts, but also learn values such as discipline and responsibility. The combination of these two approaches provides a strong foundation in forming students' disciplinary attitudes in learning physics.

Relevant research was conducted by Yustina et al. [45], which showed that a contextual approach can improve student motivation and discipline. In his research, students showed high participation because they felt that learning was relevant to their lives. In addition, the humanistic approach applied by teachers strengthens the emotional attachment between students and teachers, which makes students appreciate class rules more. This study strengthens the findings that the connection between material and real context and personal approach influences the formation of discipline. Thus, physics learning becomes an effective medium for developing students' disciplined character.

3.2. Teacher strategies in building students' disciplined attitudes in physics learning through teaching methods

The teaching method chosen and applied by the teacher is one of the main strategies in forming students' discipline during the physics learning process. Through a structured method that is in accordance with the characteristics of the material, teachers can create a learning situation that encourages students to be orderly, focused, and responsible for tasks and time. Teaching methods not only function as a means of delivering material, but also as a means of character development, including disciplinary values. Teachers can use lecture methods, discussions, experiments, or project-based learning to foster regularity and perseverance in students. The results of interviews and teachers related to teaching methods are as follows.

Table 5. Physics Teacher and Student Interview Questions

No	Teacher Questions and Answers	Student Questions and Answers
3.	What methods do you use to get students into the habit of submitting assignments on time?	Do you find the teacher's method of reminding you of assignment deadlines helpful?

	Answer: " *I usually use the repetitive training method to get students used to discipline, including the time to submit assignments. Every time I finish delivering the material, I immediately give them short exercises that must be submitted within a certain time. That way, they get used to working quickly and accurately, and understand that there is a time limit that must be respected. If they are late, I still accept it with a special note, but I emphasize that this is part of the responsibility training. The more often they are trained, the more ingrained the discipline will be without having to be reminded continuously* ."	Answer: " *Yes, my teacher often gave me exercises that had to be submitted quickly, so we got used to doing it on time. At first it was a bit surprising because we had to be so fast, but after a while we got used to it. Sometimes there were also routine assignments every week which made us more disciplined about time. I became more organized, because if I was late I was usually still told to submit it but given an evaluation. So I felt that was the teacher's way of teaching us to be disciplined slowly* ."
4.	Do you use any special methods to ensure that students comply with the work steps in the practicum? Answer: " *Yes, I prefer to use the demonstration method. So before they start the practicum, I first show them directly the steps they have to follow. I demonstrate from start to finish, while explaining the important points that must be followed. This makes them more serious and not careless when practicing, because they know the correct procedure. Usually students are more focused and disciplined if they have seen it directly from the teacher* ".	During the practicum, did you follow all the procedures in an orderly manner? What was the reason? Answer: " *Yes, because before starting the practicum, the teacher always shows us how to do it from start to finish. So we already know what to do and what the steps are. If it is not according to the procedure, it can be dangerous, so my friends and I are usually serious when we enter the practicum section. The teacher also usually goes around and looks at each one, so we have to work according to the instructions. I feel more disciplined because I have seen the correct way of working directly from the teacher* ."

The results of interviews and observations show that physics teachers use demonstration and drill methods to instill discipline. The teacher directly demonstrates the steps of the physics lab or problem solving, then the students imitate them in an orderly manner. Students said that by seeing and repeating the procedures directly, they felt more disciplined in following the rules. This method also gets students used to managing their time and paying attention to the details of the teacher's instructions. Students become accustomed to completing tasks gradually and are disciplined in every process.

The demonstration method is in line with Skinner's behaviorist theory, where learning occurs through repeated stimulus and response. The teacher gives an example as a stimulus, then the students respond through imitation. Repeated practice or drills form positive habits through reinforcement, so that students are accustomed to behaving in an orderly manner. In addition, both methods support concrete and motor learning which is very appropriate in physics materials such as practicums. With this method, students not only understand the concept, but also learn to comply with procedures with discipline.

Research by Wulandari et al. [46], supports the effectiveness of demonstration and drill methods in forming discipline. In his research, students were more orderly and responsive in practical work when teachers used clear demonstration methods. Repeated practice has also been shown to increase students' consistency in completing questions and assignments on time. This finding strengthens the research results that concrete and repetitive methods are very effective in instilling a disciplined attitude. Therefore, teaching methods that emphasize regularity and role models can be an important foundation in physics learning.

3.3. Teacher strategies in building students' disciplined attitudes in physics learning through learning models

The learning model applied by the teacher plays an important role in shaping students' discipline during the physics learning process. By selecting the right model, teachers can design learning activities that encourage active involvement, compliance with rules, and individual and group responsibility. The learning model not only regulates the flow of interaction between teachers and students, but also creates a learning system that demands regularity, punctuality, and consistency in student behavior. The results of interviews and teachers related to the Learning Model are as follows.

Table 6. Physics teacher and student interview questions

No	Teacher Questions and Answers	Student Questions and Answers
5.	What learning models are often used in physics learning, and how do they affect student discipline?	Do you feel more disciplined when studying in a group than studying alone? Why?

	Answer: “ *I often use the Problem Based Learning model. Because students have to solve real problems, they learn time management and cooperation. This indirectly forms a disciplined attitude, because all stages must be carried out systematically* ”.	Answer: " *Yes, because when I work with friends, I don't feel comfortable if I'm late or not serious. So I'm more intentional and disciplined. I sometimes like studying alone, but when it's busy I get excited* ."
6.	Are students more disciplined when studying in groups than individually? Why? Answer: “ *In a group, students are more encouraged to remind each other. If one is less disciplined, the others will reprimand. But it still depends on the dynamics of the group. That's why I help organize it so that the group is balanced* ”.	Are you more disciplined when learning through discussion or when taking notes? Why? Answer: “ *More orderly during discussions, because I have to listen and talk too. If I just write, sometimes I feel sleepy or lazy. But during discussions, I am more active and have to prepare the material beforehand* .”
7.	Have you ever made a class agreement regarding discipline? Answer: “ *Yes. At the beginning of the semester, we make a class agreement together. I let the students propose the rules, then we agree on them. Because they helped make them, they are usually more obedient. This also teaches a small democracy in the classroom* .”	How do teachers maintain class order during physics lessons? Answer: “ *My teacher is strict but patient. If someone makes a fuss, he/she will be reminded immediately. But his/her method is easy, it doesn’t scare us. So we are usually quiet and focused, because we know when to joke and when to be serious* .”

In physics learning, teachers often use Problem Based Learning (PBL) and cooperative models to shape student discipline. Through this model, students are invited to solve problems in groups, share responsibilities, and follow the learning stages systematically. Students admit that teamwork and problem solving make them more disciplined in managing time and contributing actively. This model also encourages students to remind each other to comply with the rules and learning targets. Finally, students become accustomed to being orderly and responsible in groups and individually.

The PBL model is rooted in constructivist theory and the problem-solving approach of Barrows & Tamblyn, which states that effective learning occurs when students are confronted with real situations and seek solutions independently. Meanwhile, the cooperative model is in line with Bandura's social learning theory, which states that student behavior is formed through observation and social interaction in groups. Both models facilitate the development of social skills while familiarizing students with patterns of disciplined behavior. With a learning environment that supports collaboration and structure, students gain real-world experience in applying the values of discipline.

Research by Hanifah et al. [47], shows that the application of PBL and cooperative models can increase students' responsibility and regularity in learning. This model allows students to learn from experience and from their peers, thus creating a learning environment that supports character formation. This study also revealed that students are more obedient to the rules when they feel they are actively involved in the learning process. These results are in line with research findings that show that the use of group work and problem-solving based learning models is effective in building student discipline in physics learning.

3. 4. Teacher strategies in building students' disciplined attitudes in physics learning through teaching and learning strategies.

Teaching and learning strategies are an important part of the learning process that not only aims to achieve conceptual understanding, but also to shape students' character and attitudes, including discipline. In physics learning, teachers can design learning strategies that direct students to study regularly, follow class rules, and complete assignments on time. This strategy includes planning learning activities, time management, setting class rules, and providing consistent reinforcement or consequences. With the right teaching and learning strategies, teachers can create a conducive and educational classroom atmosphere, where students are encouraged to take responsibility for their learning process and outcomes. The results of interviews and teachers related to teaching and learning strategies are as follows.

Table 7. Physics Teacher and Student Interview Questions

No	Teacher Questions and Answers	Student Questions and Answers
8.	What is your strategy for enforcing class rules when violations occur?	What do you do if your friend breaks the class rules?

	Answer: " *I am consistent. For example, if the rule says that assignments must be submitted on Wednesday, then I will not accept Thursday unless there is a strong reason. But still with a humane approach. I emphasize that the rule is not to punish, but to train responsibility* ."	Answer: " *Usually I just whisper so that he doesn't make a fuss or be late again. Sometimes I also help him if he doesn't understand his assignment. Because if he's not disciplined, the whole group can get affected* ."
9.	Can physics material be used to instill the value of discipline? Give an example. Answer: " *Absolutely. For example, when studying Newton's laws, I explained that all physical events obey rules. If there is no order, objects can move as they please. This is a reflection that life also needs rules and discipline* ."	In your opinion, can studying physics make you more disciplined in your daily life? Explain. Answer: " *Yes, because physics is full of rules. Like when doing an experiment, everything has to be right. So I feel like I'm learning to be more disciplined. I'm used to managing my time, submitting assignments on time, and focusing when studying* ."
10.	How do you instill the value of responsibility in physics learning? Answer: " *I give a project or experiment assignment that must be done together. Each student has a role. If one is not responsible, the task cannot be completed. From there they learn that responsibility is an important part of the success of the group* ".	In what way do you think your physics teacher taught you to be disciplined? Answer: " *He gave a direct example. He came on time, taught regularly, and gave clear assignments. That made me follow suit and become disciplined too. Sometimes he was also invited to discuss class rules, so I felt responsible* ."

The teacher's strategy in teaching and learning is demonstrated through the creation of class agreements and the application of consistent behavioral reinforcement. The teacher invites students to create rules together at the beginning of learning so that students feel responsible for the rules. In addition, the teacher also provides positive reinforcement such as praise and recognition of students' disciplined attitudes. The teacher is firm but still gives students the opportunity to reflect on mistakes, which encourages conscious behavioral change. This strategy makes students more obedient to the rules and tries to maintain order during learning.

This strategy reflects a combination of behavioristic and humanistic theories. Skinner's behaviorist theory emphasizes the importance of positive reinforcement in shaping desired behavior through stimulus-response. On the other hand , Vygotsky's participatory theory emphasizes the importance of social interaction and student empowerment through direct involvement in the learning process. By involving students in rule-making and decision-making, teachers foster students' personal awareness and responsibility. This approach is also in line with humanistic theory which emphasizes the development of students' personal values through teacher guidance.

Research Handayani et al. [48], confirms that participatory classroom management strategies can significantly improve student discipline. In their research, students felt more motivated to obey the rules they formulated themselves together with the teacher. In addition, providing positive reinforcement has been shown to increase students' intrinsic motivation to maintain regularity. This research is in line with the results of current research which shows that teaching and learning strategies that value participation and give responsibility to students are very effective in forming a disciplined character. Therefore, teaching strategies that involve students are the key to successful physics learning that forms character.

The results of observations and interviews as well as documentation show that students' discipline in physics learning at Senior High School 10 in Jambi City is classified as very good. Teachers consistently apply various strategies, approaches, methods, and learning models that encourage regular student behavior, starting from attendance, compliance with regulations, punctuality in submitting assignments, to carrying out practicums. Interviews with teachers revealed a major role in early communication, rule enforcement, and behavioral habits through strengthening the value of responsibility. From the students' perspective, the majority feel helped by the teacher's systematic learning pattern and indirectly educate them to be disciplined. Overall data shows a close relationship between teacher teaching strategies and the formation of disciplined character in the context of physics learning. Thus, it can be concluded that the culture of discipline is quite rooted in the physics learning process in the observed class.

This study presents a novelty by combining a naturalistic approach to explore teachers' strategies in building student discipline in depth through four learning perspectives: approaches, methods, models, and strategies. Not only mapping classroom practices, this study also emphasizes how discipline can be formed not through punishment, but through internalization of values through the physics learning process. So far, studies on student discipline have tended to focus on aspects of formal order, but this study expands it into pedagogical dimensions and reflective classroom practices. Thus, this study shows that discipline can be formed naturally

from within the learning process, not only from external rules. This makes this study relevant for the development of character-based learning.

This study provides important implications for physics teachers and educational policy makers, namely that instilling a disciplined attitude can be done contextually through structured and reflective learning design. Teachers not only act as conveyors of material, but also as character builders through value-conscious pedagogical approaches. However, this study has limitations in the scope of the subject which is limited to one school and one subject, so generalization to other contexts needs to be done carefully. In addition, the naturalistic approach makes the data highly dependent on the strength of observation and interpretation of the researcher, which is potentially influenced by subjectivity. For future development , further research is suggested to expand the context across schools and compare between various fields of study. Furthermore, these findings can be the basis for the development of character-based curricula and teacher training programs that emphasize the integration of disciplinary values in learning strategies.

4. CONCLUSION

The results of the study indicate that the teacher's strategy in building students' discipline in physics learning at Senior High School 10 in Jambi City is carried out consistently through the application of structured approaches, methods, models, and learning strategies. Teachers shape student discipline not through punishment, but through internalization of the values of responsibility and order in the learning process, such as time management, rule enforcement, and positive behavioral habits. Students respond positively to this strategy, feeling helped by a systematic learning pattern and building character. Thus, a culture of discipline has grown naturally in the physics learning process, indicating a close relationship between teacher teaching strategies and the formation of students' disciplined character. Based on these findings, it is recommended that further research explore similar strategies in different school contexts, other levels of education, or subjects other than physics to see the consistency of the pattern of discipline formation. In addition, a quantitative or mixed approach can be used to measure the effectiveness of this strategy on the development of student character more broadly and measurably.

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