JPPIPA 11(10) (2025)

Jurnal Penelitian Pendidikan IPA

http://jppipa.unram.ac.id/index.php/jppipa/index

Analysis of Science Learning Problems in Junior High School Community Learning Center Holy Trinity, Sabah-Malaysia

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Received: December 17, 2024
Revised: August 29, 2025
Accepted: October 25, 2025
Published: October 31, 2025

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DOI: 10.29303/jppipa.v11i10.10077

Abstract: This study is a descriptive study with a qualitative approach that aims to explore in depth the factors causing science learning difficulties in students at CLC Holy Trinity. Data collection techniques used questionnaires and interviews to obtain comprehensive data on students' learning experiences. The results of the study indicate that students' learning difficulties are influenced by several main factors, namely less varied learning methods, minimal use of interactive learning media, and a less supportive learning environment. Although some students show sufficient interest in science lessons, many of them find it difficult to understand basic concepts such as force, motion, and energy, especially during independent learning. These findings emphasize the importance of the role of teachers in creating an interactive and enjoyable learning atmosphere, as well as the need to provide relevant learning media. Collaboration between schools, teachers, and parents is needed to overcome these learning barriers. This study is expected to be an input in developing more effective and adaptive learning strategies to the needs of students in the CLC environment.

Keywords: Digital media; Learning difficulties; Learning methods; Learning motivation; Science

Introduction

Community Learning Center (CLC) in Sabah, Malaysia is an informal education center provided for children of Indonesian migrant workers (especially those working in the plantation sector, such as oil palm), who do not have access to formal Malaysian education due to their citizenship status. Sabah is one of the Malaysian states on the island of Kalimantan (Borneo) which has many Indonesian migrant workers, especially from provinces such as NTT, Sulawesi, Toraja, and Java. However, their children cannot enter Malaysian national schools because they do not have valid citizenship documents or passports or are not registered as Malaysian citizens. Malaysia's national education policy limits access to education for non-citizens. To address this need, the Indonesian Government in collaboration with the private sector (plantation companies) and the Malaysian Government established the Community Learning Center or abbreviated as CLC, an alternative educational institution that provides access to education based on the Indonesian curriculum (Hidayat & Hariyani, 2022).

The purpose of establishing the CLC is to provide basic education rights for Indonesian children in Sabah, prevent school dropouts and illiteracy among migrant children, maintain Indonesian national identity and culture even though they are abroad, and provide access to decent education even in remote areas. One of the CLCs located in Tawau City, Sabah, Malaysia is CLC Holy Trinity. CLC Holy Trinity is a Non-Ladang CLC which is one of hundreds of CLCs in Sabah that provide junior high school education services for Indonesian migrant children. This CLC integrates an educational approach based on cultural values, religiosity, and nationalism.

How to Cite:
Mandasari, W., Dewi, N. R., & Sukaesih, S. (2025). Analysis of Science Learning Problems in Junior High School Community Learning Center Holy Trinity, Sabah-Malaysia. *Jurnal Penelitian Pendidikan IPA*, *11*(10), 486–494. https://doi.org/10.29303/jppipa.v11i10.10077

Learning difficulties can be defined as a problem or condition where students experience obstacles in the learning process. The obstacles experienced by students can be realized or unconscious, be it psychological, sociological, or the learning process. Science learning at the junior high school level has an important role in shaping students basic understanding of scientific concepts (Fatmasari & Bahrodin, 2022). Wahyuni (2018) and Saharuddin & Wahab (2019) said the students experience poor learning activities, especially in science subjects, students experience obstacles in the experimental learning process and show unnatural behavior such as not paying attention and trying experimental activities in their groups, and also not enthusiastic about doing tasks quickly, some like to invite friends to chat, and it seems that some are not confident when learning in groups. Where learning activities are less good that have obstacles like this are called learning difficulties. At Community Learning Center (CLC) Holy Trinity, this challenge is also evident, where students often struggle to understand basic concepts such as motion, force and energy changes. Jannah & Sartika (2022) found that learning interest is one of the factors that can cause learning difficulties, in addition to learning motivation is also a factor that causes problems in learning for students. This difficulty can be caused by various factors, including ineffective teaching methods, lack of adequate learning resources, and students' inability to link theory with practice. According to Rahmah & Harahap (2024), the implementation of Merdeka Belajar Curriculum in elementary schools shows that a more interactive and project-based approach can help students better understand science concepts. However, at CLC Holy Trinity this approach has not been fully implemented, so an in-depth analysis of the problems faced is needed. Based on initial observations, students at CLC Holy Trinity showed low interest in science lessons. This can be seen from their minimal active participation in learning activities. In addition, evaluation results showed that students' average scores in science exams were far below the passing standard. This indicates that there is an underlying problem that needs to be addressed so that students can learn more effectively.

The problem formulation in this study is as follows: What are the factors that cause science learning difficulties among students at CLC Holy Trinity? How do teaching methods affect students' understanding in science lessons? And what efforts can be made to overcome learning difficulties faced by students? By formulating these problems, it is hoped that the research can provide a clear picture of the challenges faced in learning science at the school. The purpose of this study is to analyze the problem of science learning at CLC Holy Trinity with a focus on identifying factors that cause student learning difficulties. In addition, this study also aims to determine which learning method is more appropriate in improving science understanding. This research also aims to provide recommendations for teachers and school administrators in designing better learning strategies that suit student's needs. Through these objectives, it is hoped that effective solutions can be found to improve the quality of science learning at the school.

Method

This study was conducted at the junior high school level, namely at CLC Holy Trinity Sabah, Malaysia in the 2024/2025 academic year. The sample taken in this study was 152 students who were junior high school students in grades 7, 8, and 9. This research design uses a descriptive research type with a qualitative approach to obtain a more comprehensive understanding of the problems of science learning at CLC Holy Trinity Sabah Malaysia.

This study involves the use of questionnaires and interviews as the main instruments in data collection. With this approach, it is hoped that in-depth data can be obtained about students' learning difficulties and the factors that influence science learning. As a first step, a questionnaire was distributed to students to identify the difficulties they experienced in learning science. This questionnaire consists of 30 questions designed based on indicators of learning difficulties that have been identified in previous literature, as explained by Ndruru (2023) in his analysis of factors of students' learning difficulties in science subjects.

In addition, interviews will be conducted with 9 students, where each class is taken 3 random student samples to get a broader perspective on the challenges faced in the learning process. The data obtained will then be analyzed descriptively with a qualitative approach. This approach allows researchers to identify key issues that arise from the data collected, so that they can provide relevant recommendations to improve science learning in schools.

With this comprehensive research design, it is hoped that the results of the study can provide a significant contribution to improving the quality of science learning at CLC Holy Trinity, Sabah, Malaysia. This study will also provide useful information for schools in formulating appropriate strategies to address problems faced by students in science.

Result and Discussion

This study was conducted at CLC Holy Trinity located in Tawau, Sabah, Malaysia. CLC Holy Trinity is an educational institution that serves Indonesian

students in Malaysia, especially children of Indonesian migrant workers. The percentage of learning difficulties in science in junior high school students in Semarang City varies from the three categories of schools due to different difficulty factors. Learning difficulty factors from internal student factors include aspects of talent, interest, motivation and intelligence. While external factors include school facilities, teachers, infrastructure and student activities (Haqiqi, 2018).

To find out students' learning difficulties, there are two activities carried out to find out, namely conducting direct observations by teachers and measuring student learning outcomes. There are several learning difficulties in science learning, namely making observations, making classifications, using and manipulating numbers, communicating, making predictions, drawing conclusions, controlling variables, interpreting data, formulating hypotheses, and conducting experiments (Waruwu, 2020). In this study, the classes used as research objects were students at the junior high school level, namely grades 7, 8, and 9 in the 2024/2025 academic year.

The results of the research that has been conducted obtained 2 factors, namely internal and external factors. Internal factors consist of self-motivation and learning difficulties, while internal factors consist of learning methods, learning media, and learning environments. The assessment is divided into three categories: category 1 which indicates a high level, category 2 which indicates a medium level, and category 3 which indicates a low level. Each question was analyzed based on the percentage of each category. The results of the questionnaire were analyzed based on the answers to each question.

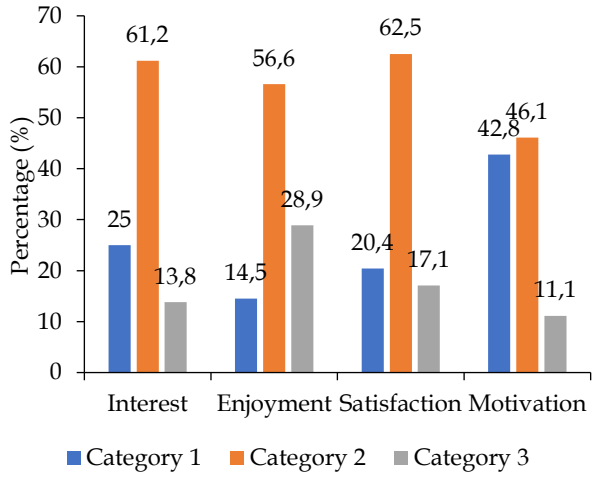

Figure 1. Internal factors that influence science learning

Figure 1 shows internal factors divided into 4 aspects of student assessment in science learning. Regarding interest in science learning, 61% of students rated their interest as moderate, while only 25% rated it as high. This indicates that the learning process has not fully succeeded in igniting students' enthusiasm for learning. However, according to Ainley (2006), interest is the primary gateway to intrinsic motivation. Low interest can be caused by a lack of relevance of the material to students' lives, non-participatory methods, or unappealing learning media.

Regarding enjoyment of science learning, the high percentage (29%) in the low category for enjoyment is an important signal that some students are not enjoying the learning process. This is crucial because enjoyment of learning is directly correlated with engagement and persistence in learning (Pekrun, 2006). Teachers need to create enjoyable learning experiences through active approaches, educational game-based learning, or adaptive digital technology integration.

The aspect of satisfaction in science learning, Satisfaction, reflects the extent to which students feel fulfilled in the learning process. With 63% in the moderate category and only 20% in the high category, it is clear that learning has not fully met students' expectations or personal needs. This underscores the importance of learning reflection, constructive feedback, and a differentiated learning approach that accommodates learner diversity.

Finally, learning motivation showed the most positive results compared to other aspects, with 42% in the high category and only 12% in the low category. However, almost half of students still fell into the moderate category (46%), indicating that their motivation remains unstable and highly dependent on learning stimuli. The implementation of project-based learning models, problem-solving (PBL), and local cultural integration (ethno-STEM) can be a catalyst for strengthening learning motivation on an ongoing basis.

The findings of this study indicate that the majority of students' motivational aspects fell into the moderate category, with the highest achievement only in the motivational aspect. This illustrates that current learning has not fully empowered students' affective potential optimally. Therefore, pedagogical interventions that are humanistic, contextual, and based on meaningful learning experiences are urgently needed. Teachers need to design learning that not only conveys content, but also sparks students' curiosity, joy, and personal achievement.

Figure 2 shows 4 aspects of student difficulties in science learning. Understanding the difficulties students face in learning science is a crucial foundation for designing adaptive, contextual, and inclusive learning strategies. The graph presented reflects the distribution of student perceptions of various aspects of their difficulties, grouped into three assessment categories.

The four aspects examined were first aspect analyzed was science learning difficulties. This aspect showed that 58% of students perceived science learning difficulties at a high level, while 38% found them in the moderate category, and only 4% reported low difficulty. The high percentage in category 1 strongly indicates that science is still considered a complex, confusing, and challenging subject by most students. This high level of difficulty can be caused by overly abstract presentations, a lack of contextual illustrations, or the use of unsimplified scientific language. Science, as a discipline that demands logical reasoning, experimentation, and an understanding of systemic concepts, needs to be delivered through an approach that is close to students' everyday experiences. Inquiry-based pedagogical strategies, an ethnoscience approach, and the use of interactive visual media are essential to bridge this cognitive gap.

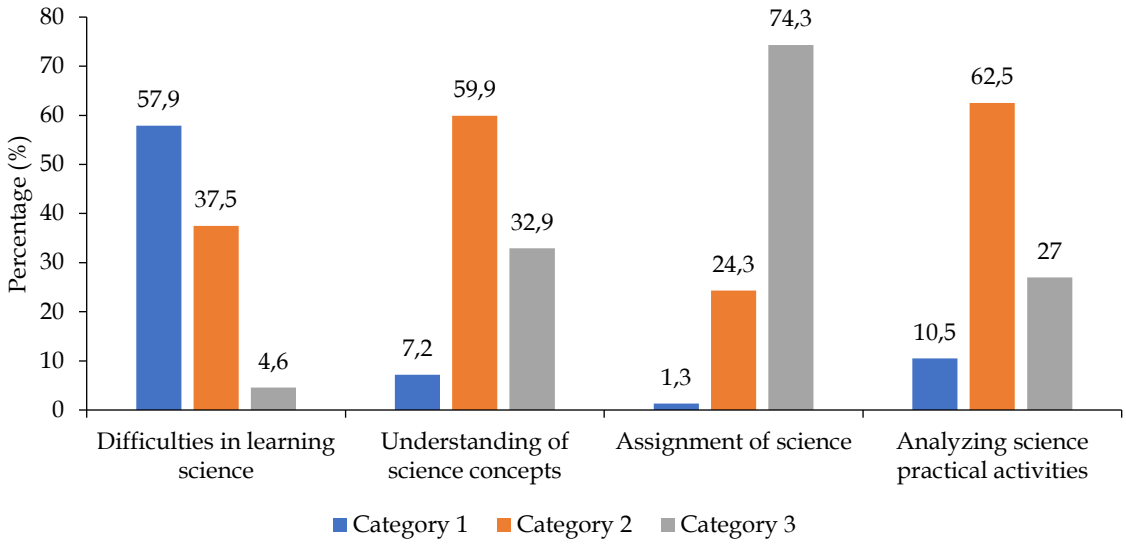

Figure 2. Student learning difficulty indicator

The next aspect is difficulty in understanding science concepts. In this aspect, 60% of students fell into the moderate category, 34% into the low category, and only 6% experienced high difficulty in understanding science concepts. This data illustrates that the majority of students feel they are in a gray area—some understanding, but not yet complete. Difficulty understanding concepts is not solely due to a lack of student ability, but can also be caused by a lack of scaffolding (conceptual support) from teachers and an undifferentiated learning approach. A science concept will be difficult to understand if it is not structured from concrete experiences relevant to the student's environment. Therefore, learning that touches on students' real lives and stimulates their natural curiosity is needed.

Next is the aspect of difficulty in completing science assignments. This aspect shows that 73% of students rated their difficulty as low, 25% as medium, and only 2% as high. This represents a positive anomaly compared to other aspects. This means that the assignments given in science lessons tend to be easy to understand or relatively easy compared to other aspects. While this seems positive, these results also indicate that the assignments may not be challenging enough or may not develop higher-order thinking skills. A good assignment should not only be easy to complete but also stimulate scientific analysis, synthesis, and reflection. If students don't feel challenged by the assignment, this could potentially prevent them from engaging deeply in the learning process. Furthermore, the rapid advancement of technology, making internet access ubiquitous, makes it easier for students to find answers to assigned assignments by simply surfing the internet or even using AI chatbots to answer questions.

The final aspect is the difficulty of analyzing practicum results in science learning. As many as 63% of students found analyzing science practicum activities to be moderately difficult, 26% reported high difficulty, and only 11% found it to be low difficulty. Practicums, as the heart of science learning, should provide concrete experiences to understand abstract concepts. Difficulties in analyzing practicum results can stem from students' low critical thinking skills, minimal guidance during the observation process, or a mismatch between the practicum instruments and the students' cognitive development levels. If lab work becomes merely a procedural ritual without in-depth conceptual reflection, the true purpose of science learning will not be achieved. Integration of lab work with mapping

learning objectives, the use of analytical worksheets, and post-experiment reflective discussions is necessary.

The difficulties students experience in learning science fundamentally reflect their need for more meaningful, personalized, and holistic learning. Each graph showing numbers is not merely a statistic, but a concrete representation of the voices and hopes of students who anticipate changes in the way they learn and experience science. It is time for science education to not only teach "what science is" but also encourage students to love "why and how science works" in their daily lives.

In general, the graph shows that students' main difficulties lie in understanding science concepts and the overall learning process, not in assignments. This suggests that the problem is more conceptual and methodological than administrative. In other words, students don't struggle with assignments, but rather with understanding the essence of science material and how to apply it in a scientific context. This finding aligns with previous studies that suggest that a teacher-centered learning approach and a lack of exploratory activities are the primary causes of poor understanding of science concepts (Yore, 2001). Therefore, a paradigm shift is needed from a teaching-centered to a learning-centered approach, which addresses the cognitive and affective needs of students as whole individuals.

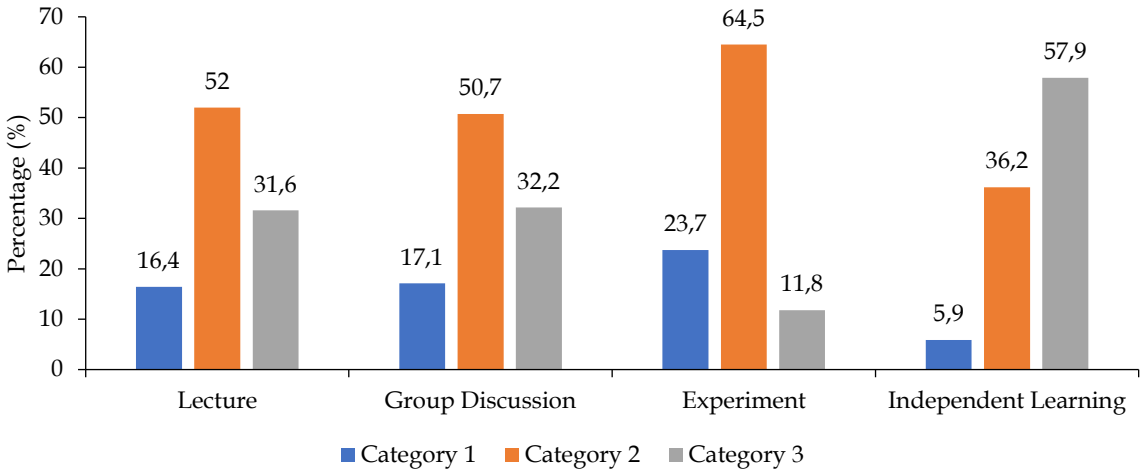

Figure 3. Learning method indicator

Selecting a learning method that suits students' learning styles is a crucial determinant in building learning engagement, enhancing conceptual understanding, and fostering intrinsic motivation. The graph below illustrates students' perceptions and preferences for five different learning methods: lecture, group discussion, experiment, and independent learning. Regarding the lecture method, 53% of respondents ranked lectures in the medium category, followed by 32% in the low category, and only 15% in the high category. Lectures still have a place in students' perceptions as a familiar and informative learning method, but generally lack active engagement. The relatively high proportion in the medium category indicates that lectures are considered "good enough," but not ideal as a primary method. This aligns with Slavin (2009) opinion that lectures are only effective when interspersed with interaction and reflective activity. In a humanistic context, the lecture method needs to be redesigned as an educational dialogue, rather than a cognitive monologue.

Fifty-one percent of students ranked group discussions in the medium category, 32% in the low category, and 17% in the high category. Group discussions are generally well-received, but they are not yet optimal in fostering authentic collaboration among students. In a constructivist approach, discussions should be an arena where students construct shared meaning through dialogue, mutual listening, and critical reflection (Vygotsky, 1978). Low scores in the high category may indicate implementation challenges, such as the dominance of certain participants, a lack of structure, or inadequate teacher facilitation.

Experiments ranked highest in the medium category (65%), with 24% in the high category and 11% in the low category. Experiments are considered an engaging method and appropriate for science learning, as they involve concrete activities, observation, and drawing scientific conclusions. However, the dominance of the medium category indicates that there is still a gap between experimental potential and implementation in the classroom. Perhaps the experiments are procedural rather than exploratory. Students would be more

enthusiastic if experiments were designed as a discovery-based process that allows for questions, trial, and error as part of the learning process.

Percentage 59% of students placed independent learning methods in the low category, 36% in the medium category, and only 5% felt they were suitable in the high category. Independent learning appears to be a challenge for most students. This could be attributed to low levels of learning independence, poor time management, or lack of access to adequate learning resources. According to Zimmerman (2002), independent learning requires metacognitive and self-management skills that students may not naturally possess. Therefore, the teacher's task is not only to provide learning materials but also to guide students in developing their learning-to-learn abilities.

The data in Figure 3 shows that most of the surveyed learning methods were rated as moderate. This means that the majority of students have not found a single method that they truly find most effective or enjoyable, but they have not rejected the available methods either. This phenomenon indicates pedagogical fatigue or the stagnation of learning strategies that are merely considered adequate but not inspiring. Two methods that scored significantly low were independent learning and lecture, indicating challenges in building student learning autonomy and creating an interactive and affectively meaningful classroom atmosphere. In contrast, the experimental method has high potential for further development, as it has demonstrated greater positive perceptions. Student preferences for learning methods reflect their previous learning experiences. When the majority choose the moderate category, this is not simply a sign of neutrality but could be a warning that learning needs to be restructured to be more cognitively, emotionally, and socially meaningful. Teachers, as facilitators of transformation, need to open a dialogue with students so that the chosen method truly provides them with a place to grow, ask questions, and experience.

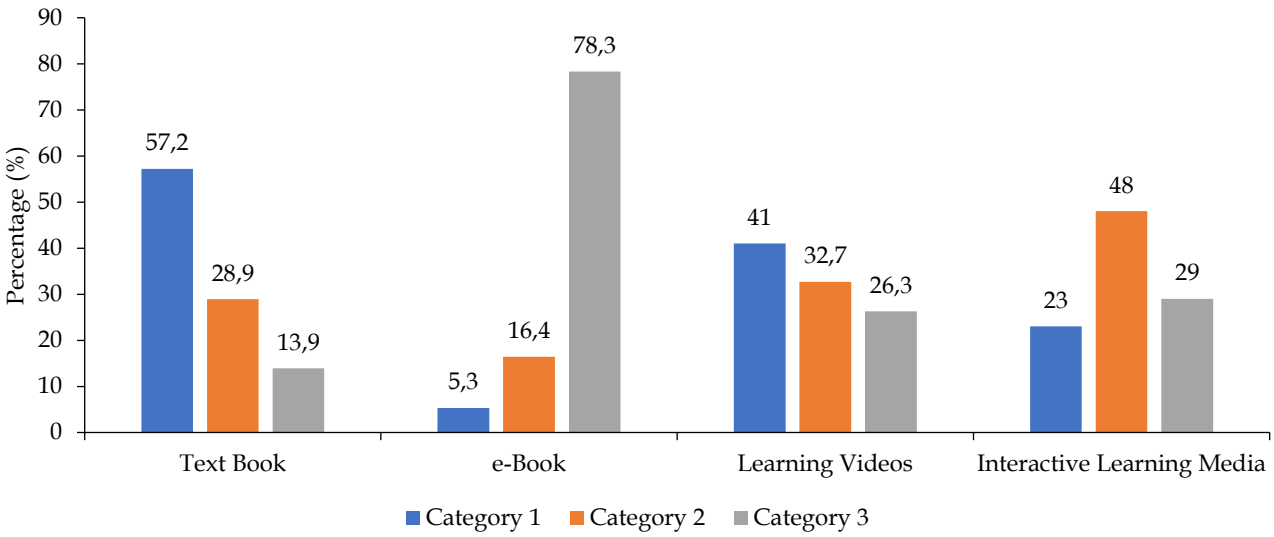

Figure 4. Learning media indicator

However, unfortunately there are obstacles in the utilization of digital media by teachers at Holy Trinity CLC in the science learning process. This is a contributing factor to the learning difficulties experienced by students at the school. The utilization of digital media by teachers also plays a very important role in supporting the success of student learning. Therefore, it is important for teachers to be more active in using digital media in the learning process in order to help students understand the subject matter better.

Based on the results of the study, it was found that the factors of difficulty in learning physical science for students in grade VII SMP/MTs include aspects of attitude in the item lack of confidence in learning 48%, aspects of intelligence in the item abstract physical science concepts 59%, and the ability to remember 57%. The mathematical formula aspect on the item of the number of equations or formulas 54%, and the ability to complete mathematical calculations 57%. Then, in class VIII SMP/MTs students include aspects of attitude in the item lack of confidence in learning 57%. The aspect of mathematical formulas on the many equations or formulas item is 57%. The conclusion of this study is that the factors of difficulty in learning physical science come from aspects of attitude, intelligence, and mathematical formulas (Jannah et al., 2022).

In Figure 5 with the Learning environment indicator, it can be seen that a conducive and comfortable learning environment plays a role in increasing students' motivation and comfort in the

learning process. With positive peer support, learners can feel more motivated to learn and actively participate in learning.

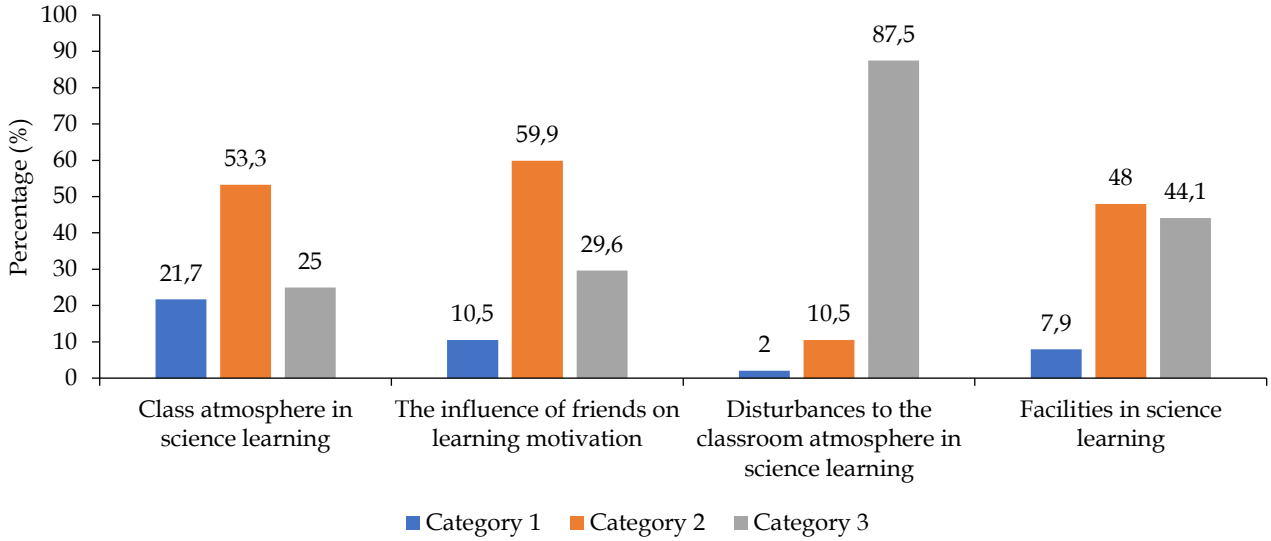

Figure 5. Learning environment indicator

In addition, the lack of distractions in the classroom also provides more optimal space for students to focus on learning without any significant obstacles. It is shown in the Figure that a high percentage in category 2 for the classroom atmosphere that supports science learning, this also happens that the influence of learning friends in the classroom is positive indicated by the high Figure category 2 about the influence of friends in the learning environment. It is also evidenced in the Figure that there are very few disturbances to the learning atmosphere during science learning.

Although the supporting facilities available in the classroom are still inadequate, the enthusiasm and motivation of students remain high. This shows that positive learning environment factors have a very important role in creating an effective and productive learning atmosphere. With support from classmates and a conducive classroom atmosphere, students become more motivated and enthusiastic in participating in learning in the classroom. This also proves that social interaction factors and learning environment play a vital role in shaping motivation and comfort in the learning process.

Figure 6 shows students' expectations of science learning at Holy Trinity CLC, namely the desire to get additional hours to deepen their understanding of science materials. The questionnaire results also show that the biggest challenge they face in learning science is the material that is difficult to understand, with 60.5% of students choosing this option. Other challenges they face are limited learning time, ineffective learning methods and inadequate facilities.

Most students overcame their difficulties in learning science by asking the teacher, seeking additional information, and discussing with friends. Only a few students chose to repeat the material at home, while 2% of learners or three students admitted that they were unable to overcome difficulties in learning science independently.

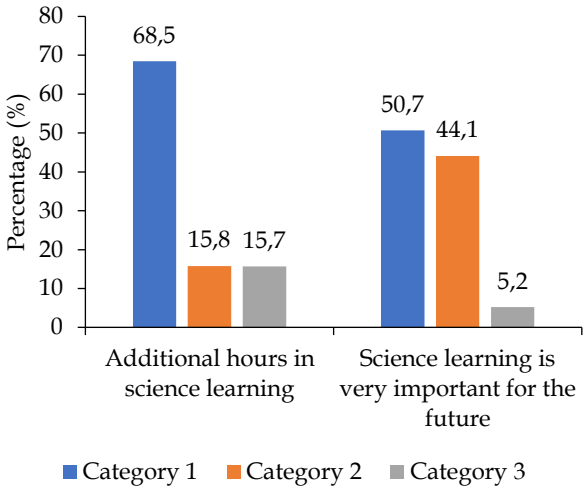

Figure 6. Experience and expectation indicators

This study also used the interview method, where the interview method is a direct question and answer to obtain information (Abbas & Hidayat, 2018). The interview results were obtained from sampling 2 students from each study group, represented by low and high academic achievement seen from the last semester report card results. The results of interviews from these

students are that all students like science lessons, and they find it easier to understand each material when delivered by the lecture method by the teacher. Literacy in the subject tends to be lacking, this is explained in the answers of students who admit that they only read science books when there are assignments and when going to exams. In addition, through the results of interviews it can be seen that their biggest learning difficulty is understanding science concepts in learning.

Children who experience learning difficulties need special guidance and handling. They are not unable to learn, they just need more attention and guidance to overcome the learning difficulties they experience. Therefore, a teacher who has creativity and knowledge is needed in carrying out his obligations as a teacher, mentor, trainer and so on (Utami, 2020). The results of the questionnaire percentage of learning difficulty factors for students in class VII SMP Negeri 1 Rambang in science subjects interest 16.67% (low), motivation 36.67% (low), concentration 43.33% (sufficient), learning habits 40% (low), intelligence 30% (low). The results of interviews conducted by students causing learning difficulties are interest, motivation, concentration, learning habits, and intelligence (Yunarti, 2021).

The hopes and suggestions of students in learning science include the desire to increase science class hours, carry out learning activities outside the classroom, increase practicum activities both inside and outside the classroom, improve science learning facilities, and use interesting learning media to increase students' interest in learning science.

Conclusion

Based on the results and discussion of this study, it can be concluded that students at Holy Trinity CLC have a fairly high learning motivation, especially towards science learning. They experience difficulties especially in understanding science theories, but find it easier to understand the material if taught through the lecture method. The use of digital media plays an important role in helping students understand science learning outside of school. The learning environment in the classroom is considered quite supportive and can motivate conducive learning. Learners expect additional hours, learning activities outside the classroom, and improved science learning facilities. Therefore, it is suggested that teachers should be more active in using digital media, improve effective learning methods, and pay attention to learners' expectations and suggestions in improving the quality of science learning at Holy Trinity CLC.

Acknowledgments
Thanks to all parties who have supported the implementation of this research. I hope this research can be useful.

Author Contributions
Conceptualization, methodology, formal analysis, investigation, resources, data curation, writing—original, draft preparation, writing—review and editing, visualization, W.M.; validation, N. R. D. and S.S. All authors have read and agreed to the published version of the manuscript

Funding
This research is an independent research, not receiving external funding from any party and in any form.

Conflicts of Interest
The authors declare no conflict of interest in the publication of this scientific article.

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