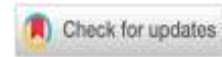




Climate change literacy ability profile in junior high school students in ogan ilir reGENCY



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ABSTRACT

Climate change is a global issue that requires awareness and understanding among younger generations to support sustainable environmental actions. This study aims to analyze the profile of climate change literacy among junior high school students (SMP) in Ogan Ilir Regency by considering school accreditation levels A, B, and C. The research employed a quantitative descriptive method using purposive sampling, involving 184 ninth-grade students from three schools. The instrument consisted of 40 items covering three indicators: knowledge, attitude, and competence, with Cronbach's alpha reliability scores of 0.548, 0.900, and 0.511, respectively. Instrument validity testing showed adequate results, with a KMO value of 0.863, SRMR of 0.072, and GFI of 0.990. The findings indicate that 46% of students were in the moderate category of climate change literacy. The attitude indicator achieved the highest percentage at 48%, reflecting a good level of awareness and concern toward climate change issues. However, school accreditation does not necessarily determine literacy level, as evidenced by SMP C (Accreditation C), which recorded the highest percentage in the high category overall. These results imply the need to strengthen environmentally-based curricula and implement contextual learning approaches to enhance students' climate change literacy.

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INTRODUCTION

Climate change is one of the most complex and urgent environmental challenges of the 21st century. This phenomenon is characterized by extreme fluctuations in weather patterns and a significant increase in the Earth's surface temperature, which has risen by approximately 0.8°C (or 1.4°F) since the early 1900s (Wolff et al., 2014). The temperature rise is primarily caused by human activities, particularly from the industrial sector, which produces greenhouse gas emissions.

The impacts of climate change are far-reaching and affect various aspects of life, including human health, food security, access to clean water, and the stability of global ecosystems (IPCC, 2021; Santos & Bakhshoodeh, 2021). Therefore, a comprehensive and in-depth understanding of climate change issues has become a global urgency that cannot be overlooked.

As an archipelagic country, Indonesia faces a high level of vulnerability to the impacts of climate change. Threats such as rising sea levels, shifting rainfall patterns, and increased frequency of hydrometeorological disasters pose real risks to various regions across the nation (BNPB, 2023). This condition demands serious attention toward improving climate change literacy among the public, particularly among students. Various studies have revealed a significant gap in understanding related to climate change. Research conducted by Cacundangan & Garcia (2017). Findings indicate that Grade 10 students in Kabacan, Philippines, possess a reasonable level of knowledge about climate change; however, most responses were given with low levels of certainty, particularly regarding basic concepts, causes, impacts, and mitigation efforts. This suggests a weak conceptual understanding, highlighting the need to strengthen climate literacy from an early age. A similar study in Indonesia also revealed that climate change literacy has a significant influence on students' climate awareness at MAN I Yogyakarta, contributing 5.8%. Although the majority of students fell into the high category of both literacy and awareness, there remains a gap in actual behavioral implementation. These findings underscore the importance of reinforcing climate literacy as a foundational element in shaping adaptive behavior among students (Nurhalimah & Susilawati, 2023). Several other studies conducted in various regions have also shown that students' understanding of global environmental issues, including climate change, often remains at a basic conceptual level and is not yet integrated into concrete actions (Pratama & Lestari, 2021; Utami & Kholid, 2022).

Conceptually, climate change literacy encompasses not only knowledge but also a comprehensive understanding of its causes and impacts, as well as the ability to design and implement effective mitigation and adaptation strategies (Safiati et al., 2024; UNESCO, 2020). In the context of education, the development of this literacy plays a crucial role in shaping pro-environmental behavior and enhancing preparedness for climate-related disasters (Hakim et al., 2023). Education has three primary functions in addressing climate change: empowering individuals to take climate action, strengthening adaptive capacities, and promoting lifelong learning in response to current scientific information (Sekarwulan et al., 2024).

Junior high school students represent a highly strategic group for the development of climate change literacy. At this stage of early adolescence, students undergo rapid cognitive and psychosocial development, during which their ability to think abstractly, logically, and systematically begins to emerge. This developmental phase enables them to comprehend complex concepts related to climate change and understand their relevance to everyday life (Agustini et al., 2022). Instilling understanding from an early age is essential, considering that students represent the next generation who will face the long-term impacts of environmental change. However, several studies have indicated that junior high school students' climate change literacy remains below average. For instance, a study conducted in the Philippines revealed that although students demonstrated positive attitudes and perceptions, their overall level of climate literacy was still low (Ligsa et al., 2024). A study conducted in Purwokerto also reported low levels of scientific literacy among junior high school students, particularly in the aspects of content (53.80%), process (44.038%), and context (34.088%) (Noviana, M. & Julianto, 2017). A similar gap was also identified in studies conducted in major cities in Indonesia, where students demonstrated a good understanding of definitions but lacked knowledge in terms of solutions and practical actions (Nabilah & Hariyono, 2021). This condition reflects a gap between conceptual understanding and

actual implementation in the context of climate change literacy, which ideally encompasses knowledge, attitudes, and actions (Ramadiana et al., 2024).

Ogan Ilir Regency, particularly North Indralaya District, was selected as the research location due to its geographical and historical characteristics as one of the regions most vulnerable to the impacts of climate change in South Sumatra. This area has a significant history of forest and land fires, especially in peatland areas. North Indralaya District recorded the largest extent of forest fires, covering approximately 382.7 hectares with 114 fire hotspots (Lestari et al., 2020). This forest fire directly contributes to increased carbon emissions and localized climate change (Sarmiasih & Pratama, 2019). The forest and land fires in this region had also occurred previously in 2017 (Supardi (2017)). It was reported that 20 hectares of peatland in Parit Village, Indralaya Utara Subdistrict, were burned. In 2023, three forest and land fire (karhutla) locations along the Ogan Ilir border became the largest contributors to haze in South Sumatra, resulting in severe air pollution in Palembang (Fajriansyah, 2023). In fact, in May 2025, two hectares of shrubland in Ogan Ilir also caught fire (Irawan, 2025). The impact of these fires extends beyond the environment, disrupting transportation, potentially increasing cases of acute respiratory infections (ISPA), and affecting the local economy, such as by reducing agricultural yields (Mongabay, 2023). This reinforces the importance of strengthening climate change literacy among students in the region as a means of preparedness and adaptation to potential climate-related disasters.

Research on climate change literacy among students in Ogan Ilir Regency, particularly with regard to differences in school accreditation levels (A, B, and C), remains limited. In fact, school accreditation is often correlated with the availability of educational resources, facilities, curriculum quality, and teacher competence, all of which can theoretically influence students' literacy levels. Examining climate change literacy based on accreditation variation can provide empirical insights that are relevant for developing targeted policies and educational interventions. The measurement of climate change literacy generally encompasses aspects of knowledge, attitude, and competence—typically assessed through Likert scales or structured questionnaires that have been utilized in previous studies. (Rohmawati et al., 2024; Ligsu et al., 2024). This measurement approach is considered effective in promoting the development of students' critical and analytical thinking skills (Hidayani et al., 2021) and motivating student participation in mitigation and adaptation efforts (Luthfia et al., 2019).

Based on the background of the problems described above, it is necessary to conduct research that can provide a real picture of climate change literacy in junior high school students in Ogan Ilir Regency. This research is considered important because it can show the extent of students' understanding of the issue of climate change. Therefore, the researcher conducted a study with the aim of analyzing the profile of climate change literacy ability in junior high school students in Ogan Ilir Regency.

RESEARCH METHODS

Research Design

The research method used by the researcher is a quantitative descriptive method. A quantitative approach was used to objectively measure and describe the climate change literacy profile of junior high school students in Ogan Ilir Regency. Descriptive research was chosen because it aims to provide a systematic, factual, and accurate picture of the facts and characteristics of a particular population or area without looking for cause-and-effect relationships (Deckert & Wilson, 2023).

Population and Samples

The population used in this study consist of 184 junior high school students from North Indralaya district, Ogan Ilir Regency, with accreditation variations of A, B, and C, selected



randomly from three junior high schools. The sampling technique uses Purposive Sampling. Purposive sampling is a sampling technique of data sources with certain considerations, by selecting a group of subjects based on certain characteristics that are considered to be related to the population to be studied. The research sample was based on students who had studied climate change material in their schools. Class IX students are selected based on their better level of understanding compared to grades VII and VIII. Grade IX students are generally 14-15 years old. The research sample in this study is presented in Table 1.

Table 1. List of Junior High School Samples, Population in North Indralaya District by Gender and Accreditation

No.	School	Accreditation	Class	Gender		Total
				Man	Woman	
1.	SMP A	A	IX	38	54	92
2.	SMP B	B	IX	39	29	68
3.	SMP C	C	IX	10	14	14
Total						184

Instruments

The climate change literacy instrument to be used by the researcher has been developed and has been tested for validity and reliability by Meilinda, et al. (2024). The instruments developed are of good quality and are suitable for use to assess climate change literacy in students. The instrument includes three main indicators, namely: knowledge, attitude, and competence. The results of the exploration analysis showed that the data were eligible for factor analysis, as evidenced by the Kaiser-Meyer-Olkin (KMO) value of 0.863 and the significant Bartlett's test ($p < 0.001$). Reliability shows that the alpha Cronbach value on the knowledge and competence indicators is 0.548 and 0.511, respectively, in the moderate category. Then, the attitude indicator of 0.900 is included in the very high reliability category. Although the convergent validity test (AVE) value is still below the ideal standard, the results of the discriminant validity test (HTMT < 0.85) and some goodness-of-fit indices, such as the Standardized Root Mean Square Residual (SRMR) 0.072 and the Goodness of Fit Index (GFI) 0.990, indicate that the instrument model as a whole is acceptable. Therefore, this instrument can be used as a valid and reliable measurement tool in the context of climate change education. In Table 2, Several questions from each climate change literacy indicator are presented.

Table 2. Indicators, Sub-Indicators, and Climate Change Literacy Question Items

Indicators	Sub Indicators	Question Item
Knowledge	I	K The Sun is the main source of energy for Earth's climate system
	2	K In addition to CO ₂ , water vapor and methane are also greenhouse gases
Attitude	I	A I realize that science and technology in climate change have improved the quality of human life
	I	B I decided to use Recycle or recycle something instead of throwing it away to reduce climate change
Competence	I	C Greenhouse gases are naturally needed for life on earth, because in the event of sunlight entering the earth, the radiant heat will....

		<ul style="list-style-type: none"> a. Reflected entirely into the atmosphere b. Partly reflected into the atmosphere and partly absorbed by the earth's surface c. Absorbed completely to the earth's surface d. It is handed over to the earth's surface and reflected partly into the atmosphere, but a small part will be trapped on earth due to the greenhouse gases that exist
2	C	<p>Life on earth is influenced and influenced by changes in climatic conditions for example....</p> <ul style="list-style-type: none"> a. Forest and land fires produce emissions that increase the earth's temperature and the increase in the earth's temperature causes drought that triggers fires b. Floods cause overflow of rivers and seas, overflows of rivers cause water to rise on the earth's surface causing flooding c. Mount Eruption causes carbon emissions that cause extreme climate change, triggering after-eruptions d. Landslides cause forest damage and reduce forests where water is absorbed, thereby removing carbon sinks and causing an increase in the earth's temperature.

Reliability testing is the extent to which measurements using the same object will yield the same data. The statistical reliability calculation of the research instrument was carried out through Jaffrey's Amazing Statistics Program (JASP) software. The results of the reliability test of the three climate change literacy indicators are presented in Table 3.

Table 3. Reliability Test Analysis Results

	Coefficient ω	Coefficient α
Knowledge	0.594	0.548
Attitude	0.889	0.900
Competence	0.525	0.511

Based on the table of reliability results above, it can be seen that the alpha Cronbach value obtained is 0.548, 0.900, and 0.511. Thus, based on the reliability criteria by Guilford, it can be concluded that the reliability of this measuring tool on the knowledge and competence indicators, respectively, is 0.548 and 0.511, which are in the medium category. Meanwhile, the attitude indicator of 0.900, which is included in the reliability category, is very high.

The instrument used in this study is designed to measure the climate change literacy of students based on three main indicators, namely knowledge, attitude, and competence. Each indicator presents different aspects of students' understanding, awareness, and ability to apply concepts related to climate change. Details of the distribution of the number of questions for each indicator are presented in Table 4. Table 4 presents the indicators of climate change literacy along with the number of question items used for each indicator. The researcher classified the indicators into three main aspects, namely knowledge, attitude, and competence. The knowledge indicator measures students' cognitive understanding of the basic concepts of climate change, consisting of 15 true-false items based on the Guttman scale. The attitude indicator reflects students' perceptions and awareness toward the climate change issue, measured using a Likert scale

questionnaire with four response options: Strongly Agree, Agree, Disagree, and Strongly Disagree. Meanwhile, the competence indicator evaluates students' ability to apply their knowledge and attitudes in real-life situations through 10 multiple-choice questions. Overall, Table 4 shows that the total number of items used in this study was 40, distributed proportionally according to the three literacy indicators.

Table 4. Climate Change Literacy Indicator

No.	Indicators	Number of Question Items
1.	Knowledge	15
2.	Attitude	15
3.	Competence	10
	Total	40

Procedures

There is a research procedure that will be carried out in this study, which is divided into 3 stages, namely, first, the preparation stage for researchers to find information on junior high school data in Ogan Ilir Regency, especially North Indralaya District. With schools that have A, B, and C accreditation through the 2024 Ministry of Education and Culture website, conducting observations at the intended school, determining research samples, preparing instruments for research, and preparing and managing research permits. Second, the implementation stage of the researcher provides a research permit to the school, briefly explains the purpose of the research, provides directions on procedures for answering climate literacy questions through Google Forms, and helps direct students to work on questions through Google Forms according to the predetermined time. Third, the completion stage of the researcher collects and processes data from the research results, then analyzes quantitative descriptive data from the results of the students' climate change literacy test, and discusses and concludes the results of the research.

Data Analysis

The data analysis carried out by the researcher used descriptive statistics that were surveys. The acquisition of numbers was obtained from the results of scoring on the students' answers. In the knowledge indicator, using true and wrong answers, in the attitude indicator, there are positive statements and negative statements in each type of answer. For answers to climate change literacy questions on the knowledge and competence indicators, scoring correct answers is valued at 1, and incorrect answers are valued at 0. The answers to the climate change literacy instrument questions on the attitude indicator of the assessment rubric are presented in Table 5. The researcher analyzed questionnaires and questionnaires that had been filled out by students. In-depth interviews were also conducted with students who had low scores in climate change literacy. Interviews were given several questions related to learning activities and climate change materials.

Table 5. Rubric for Assessing Climate Change Literacy on Attitude Indicators

Criterion	Statement Score	
	Positive	Negative
Strongly agree	4	1
Agree	3	2
Disagree	2	3
Strongly Disagree	1	4

(Sugiyono, 2018)

Data on the level of climate change literacy of students was obtained from three junior high schools. Each junior high school as a whole is calculated based on students' answers to an instrument that measures three indicators, namely knowledge, attitude, and competence. Each data group from each junior high school as a whole was calculated with a mean value and standard deviation (SD). Based on the mean and standard deviation values that have been obtained from the total score of the climate change literacy level, students are categorized into four levels presented in Table 6.

Table 6. Categorization of Climate Change Literacy Index Values

No.	Value Range	Information
1.	$X \leq M - 1 \text{ SD}$	Low
2.	$M - 1 \text{ SD} < X \leq M$	Moderate
3.	$M < X \leq M + 1 \text{ SD}$	High
4.	$M + 1 \text{ SD} < X$	Very High

Information:

M: Mean

SD: Standard Deviation

RESULTS

Percentage Distribution of Climate Change Literacy Ability Categories for Junior High School Students as a Whole

The percentage distribution of the climate change literacy ability category of students as a whole for the three junior high schools in Ogan Ilir Regency is presented in Figure 1.

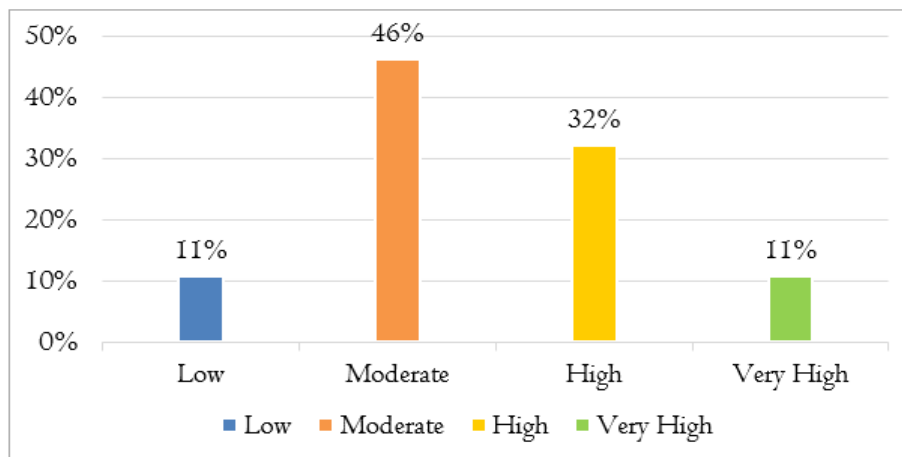


Figure 1. Percentage Distribution of Students' Climate Change Literacy Ability Categories

Based on Figure 1, the majority of junior high school students in Ogan Ilir Regency (46%) possess climate change literacy at a moderate level. This data indicates that although some students have achieved high and very high levels of climate change literacy, the largest proportion remains in the moderate category, with a smaller portion falling into the low category.

Percentage Distribution of Students' Climate Change Literacy Ability Categories Based on Indicators

The percentage distribution of climate change literacy ability categories based on indicators (knowledge, attitude, and competence) in students in junior high schools in Ogan Ilir Regency is presented in Figure 2.

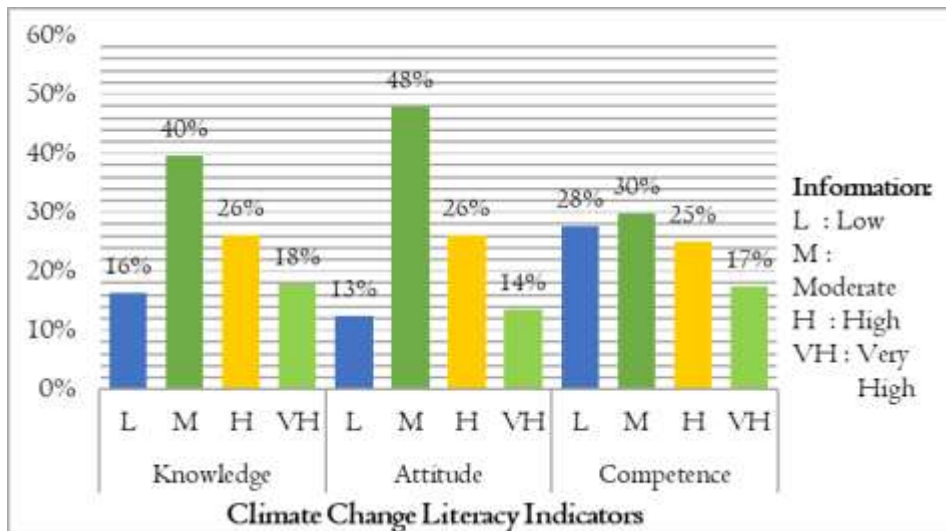


Figure 2. Percentage Distribution of Climate Change Literacy Ability Categories by Indicator

Based on Figure 2, the percentage distribution of students' climate change literacy is presented across three indicators: knowledge, attitude, and competence. First, for the knowledge indicator, the majority of students (40%) were in the moderate category. Second, in the attitude indicator, most students also fell into the moderate category (48%). This finding indicates that students generally demonstrate a positive attitude toward climate change issues. Third, for the competence indicator, the percentage distribution was more balanced, with the highest proportion in the moderate category (30%). This condition suggests that students' ability to take concrete actions in response to climate change still requires greater attention and further strengthening.

Percentage Distribution of Students' Climate Change Literacy Ability Categories by School

The percentage distribution of climate change literacy ability categories of third-grade IX students in junior high schools in Ogan Ilir Regency, based on school accreditation, is presented in Figure 3.

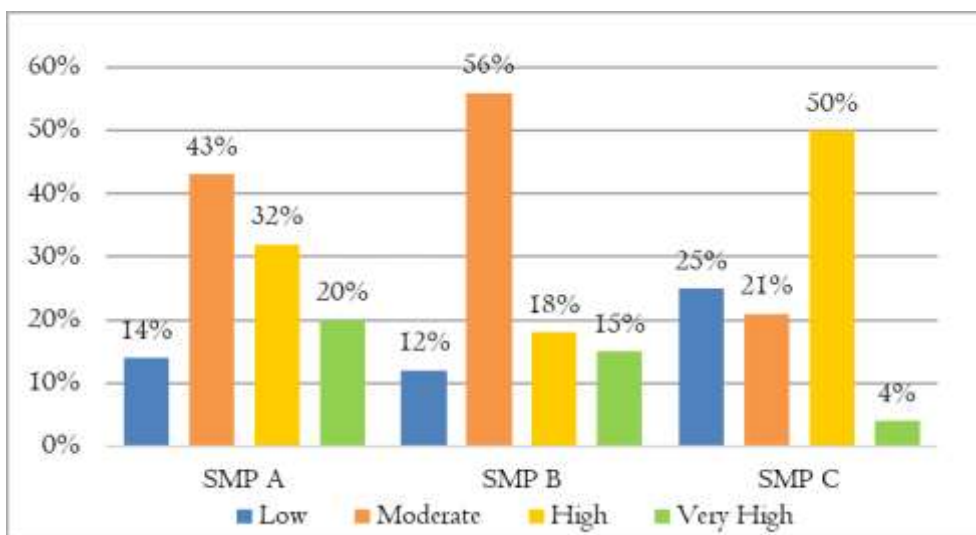


Figure 3. Percentage Distribution of Students' Climate Change Literacy Ability Categories by School

Based on Figure 3, the level of climate change literacy among students varies across schools with different accreditation levels. First, at SMP A (Accreditation A), the majority of students fall

into the moderate category (43%). Second, at SMP B (Accreditation B), most students (56%) are also in the moderate category, while the distribution across other categories appears relatively balanced. Third, SMP C (Accreditation C) shows a notable distribution pattern, with the highest proportion of students (50%) in the high category. Overall, Figure 3 indicates that SMP C has the highest percentage of students in both the high and very high categories of climate change literacy, with a combined total of 54%. These findings suggest that the level of climate change literacy at SMP C is relatively better compared to SMP A and SMP B, as reflected in the proportion of students in the upper literacy categories.

Percentage Distribution of Climate Change Literacy Ability Categories Based on Each School

The percentage distribution of climate change literacy ability categories based on indicators in each school (knowledge, attitude, and competence) in grade IX students of junior high schools in Ogan Ilir Regency is presented in Figure 4.

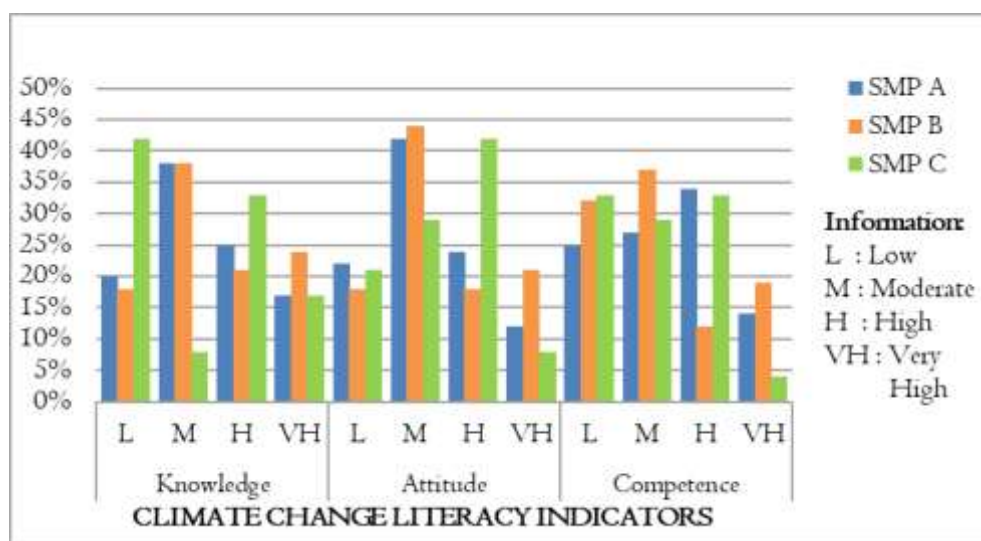


Figure 4. Percentage Distribution of Climate Change Literacy Ability Categories Based on Indicators in Each School

Based on Figure 4, the percentage distribution of climate change literacy levels by indicator varies across schools with different accreditation levels. First, in the knowledge indicator, SMP A (Accreditation A) and SMP B (Accreditation B) showed that the majority of students were in the moderate category, each with 38%. In contrast, SMP C (Accreditation C) recorded 42% of students in the low category, indicating that students' basic understanding of climate change issues was relatively lower at SMP C compared to the other two schools. Second, in the attitude indicator, most students at SMP A and SMP B fell into the moderate category, with 42% and 44% respectively. However, SMP C showed a different trend, with the highest percentage of students (42%) falling into the high category, suggesting stronger awareness and concern toward climate change among its students. Third, in the competence indicator, SMP A had the highest percentage of students in the high category (34%), reflecting a stronger ability to take concrete climate-related actions. In SMP B, most students were in the moderate category (37%). Meanwhile, SMP C showed a relatively balanced distribution between the low and high categories, each at 33%. This indicates the need to strengthen students' climate-related competencies more evenly across the school.

DISCUSSION

This section discusses the research findings on the level of climate change literacy among junior high school students in Ogan Ilir Regency, based on three key indicators: knowledge,



attitude, and competence. The study employed a quantitative descriptive approach, with data collected through a climate change literacy questionnaire specifically designed to measure these three indicators. The analysis provides a comprehensive overview of the students' climate change literacy.

Based on the results presented in Figure 1, the majority of students (46%) were categorized at a moderate level. This moderate literacy profile indicates that most students possess a basic understanding of climate change concepts, display generally positive attitudes toward environmental issues, and show initial capabilities to engage in practical actions—although such actions remain limited in scope and lack proactive engagement. This level of ability reflects an adequate grasp of factual information, but not yet at a deep conceptual level, and an awareness of the urgency of climate change issues that has not fully translated into concrete climate-related behavior (Loy et al., 2020). This achievement shows that most students already have an adequate foundation in responding to the issue of climate change. However, increasing literacy towards deeper understanding, a more proactive attitude, and more comprehensive competencies is still needed (Nabilah & Hariyono, 2021). Meanwhile, the percentage of students in the low category (11%) shows significant challenges, especially in terms of limited knowledge and practical skills.

Barriers to improving literacy may be attributed to several factors, such as the lack of adequate educational resources, the use of instructional methods that do not encourage real-life action, and suboptimal teacher engagement. A reorientation of learning from a content-based approach to a project-based approach, along with the strengthening of environmental education curricula that emphasize direct experience and social engagement, is considered essential for effective implementation (Wals, 2015). In addition, teacher readiness plays a crucial role in shaping students' understanding; however, many teachers admit they are not yet fully prepared to teach climate change material effectively due to limited knowledge (Fortner, 2018). The lack of support from family and community environments regarding climate change issues also influences students' attitudes and behavior (Mulyasari dkk., 2024). Therefore, strengthening the profile of climate change literacy is essential as an effort to build community preparedness in facing the impacts of climate change, particularly in disaster-prone areas such as Ogan Ilir.

Based on the percentage distribution presented in Figure 2, the highest achievement of junior high school students in Ogan Ilir Regency in terms of climate change literacy was found in the attitude indicator. The attitude profile showed a positive trend, with the majority of students categorized as moderate (48%) and high (26%), indicating that most students have demonstrated a good level of awareness and concern regarding climate change issues. Students tend to express emotionally engaged and positively evaluative responses toward environmental issues, although they are not yet fully proactive in translating these attitudes into concrete actions (Taufik & Venhoeven, 2018). The result is also consistent with previous research Gunamantha & Dantes, (2019). The low profile of the competence indicator is highly relevant to the characteristics of Ogan Ilir Regency as a disaster-prone area, as the ability to act adaptively and mitigatively is a key aspect in addressing the impacts caused by climate change.

In the knowledge indicator, the majority of students were categorized as moderate (40%), with a significant proportion also falling into the very high category (28%). These findings indicate that students' knowledge profiles generally range from basic to fairly good. This is reflected in their ability to identify several key concepts related to climate change and its impacts. In the competence indicator, a relatively high proportion of students fell into the low category (28%), with a more even distribution across the remaining categories, suggesting that students' competence remains a significant challenge. Many students appear to struggle with applying their knowledge and attitudes to real and proactive actions. This difficulty may stem from a lack of practical skills needed to translate their understanding into meaningful actions within everyday life

contexts (Mahananto et al., 2025). The low profile of this competence indicator is very relevant to the characteristics of Ogan Ilir Regency as a disaster-prone area because the ability to act adaptively and mitigatively is a key aspect in dealing with the impacts caused by climate change.

Figures 3 and 4 show that students' levels of climate change literacy vary across schools with different accreditation levels. The findings affirm that school accreditation is not always the sole determining factor or guarantee of a high level of climate change literacy among students. Therefore, further analysis is needed to examine internal and external school factors that may influence these outcomes. The climate change literacy profile at SMP A (Accreditation A) indicates that students' literacy levels generally fall within the moderate to high categories. This is supported by strong performance in the competence indicator, particularly in the high category, suggesting that students at this school not only understand the issues but also possess foundational skills for engaging in real-world climate change mitigation actions. This may be attributed to adequate educational resources and the more systematic integration of climate change topics into classroom learning activities.

The climate change literacy profile at SMP B (Accreditation B) indicates that the majority of its students fall into the moderate category overall, with a predominance of moderate scores across all indicators. This suggests that the learning process at SMP B has contributed to raising students' climate awareness, although it has not yet fully succeeded in advancing them to a higher level of literacy. This is reflected in a sufficient basic understanding and a generally positive attitude toward climate change issues. However, the main challenge lies in students' limited ability to integrate their knowledge and attitudes into real-life actions. This condition arises because, although students grasp the concepts theoretically, they are not yet accustomed to applying concrete mitigation or adaptation practices in their daily lives. (Fitzpatrick, R., & West, 2022). Therefore, it is necessary to strengthen learning strategies that are more practical and contextual, such as project-based learning approaches, as well as to enhance teachers' capacity in delivering climate change material comprehensively.

The profile of climate change literacy at SMP C (Accreditation C) presents an interesting overall trend, predominantly falling into the high category. This profile is particularly characterized by a highly positive and responsive attitude toward climate change issues. However, there remains a notable weakness in the knowledge indicator, with a significant proportion of students classified in the low category. This suggests that the conceptual understanding of climate change fundamentals is still not optimal among a large portion of the students. This finding is in line with previous research Falaye & Okwilagwe, (2016) It has been found that although students' attitudes toward climate change are generally positive, their knowledge on the subject remains below average. This indicates a gap between their understanding and attitudes and the effective application of that understanding in addressing climate change issues. This phenomenon reinforces the argument that the development of positive attitudes in students is not solely influenced by the level of knowledge they possess, but also by other factors such as the use of innovative and conceptual teaching methods, the active role of teachers in the learning process, as well as support from both family and the wider community (Nabilah & Hariyono, 2021; Mulyasari et al., 2024). Therefore, mastering cognitive indicators through a relevant curriculum and comprehensive teacher training is a crucial step toward aligning students' knowledge, attitudes, and skills in addressing climate change issues (Silvhiany et al., 2023). Engaging students through an interactive and interdisciplinary approach can also enhance their understanding and foster environmentally responsible attitudes (Ramadan et al., 2023).

These findings show that although the accreditation status of schools can provide an overview of the quality of education (Anindita & Faiz, 2024). Internal factors such as teachers' initiative in learning as well as the availability of relevant teaching materials and external factors



such as students' direct experience of disasters in the surrounding environment need to be considered in assessing the level of climate change literacy of students. Overall, the findings of this study show that based on school accreditation, schools with C accreditation have a higher level of climate change literacy compared to schools with A and B accreditation. Although the results showed that the level of climate change literacy of students was generally moderate, the mitigation behaviors shown were relatively high, such as the use of personal drinking containers, energy savings, and good waste management. The study also revealed that forest fires are perceived as one of the main causes of climate change, which is most likely understood through direct experience or observation of disasters occurring in the surrounding environment. Thus, students who live in disaster-prone areas, such as C-accredited Junior High School C, are more likely to witness events such as land fires, so they have higher awareness and motivation in taking mitigation actions. These findings encourage students to behave more adaptively to climate change issues. The variation in different ability profiles between schools is the basis for important information in explaining the difference in the level of preparedness of students in facing and responding to disaster risks.

The researcher also conducted in-depth interviews with students who obtained low scores in climate change literacy skills. Based on the results of the interviews, it is known that students still find it difficult to understand the basic concepts of climate change material. This difficulty is influenced by the delivery of materials taught in schools that are not clear and difficult to understand, causing challenges in the delivery of climate change materials in the classroom. In addition, students also said that their lack of involvement in environmental activities made students feel less skilled to contribute to climate change mitigation. These findings are supported by research by Mahananto et al. (2025) which shows a significant gap between students' knowledge and understanding of adaptation and mitigation actions. Lack of direct experience in a real context can hinder the formation of effective competencies in dealing with environmental issues (Hakim et al., 2023).

This low capability profile can be a foundation for understanding the obstacles faced in disaster mitigation efforts, especially in vulnerable areas such as Ogan Ilir. In general, the results of this study show that although there are differences in the level of climate change literacy among the three schools studied, each school has its own potential to improve students' understanding and skills related to climate change issues. Therefore, schools need to learn from each other, exchange experiences, and apply learning methods that have proven to be effective in climate education. Collaboration between schools, educators, and the community is also very important to create a learning environment that supports the improvement of climate change literacy. In addition, the environment where students live also has the potential to provide direct experience of the impacts of climate change, which greatly encourages a real and deeper understanding of concepts.

CONCLUSION

Based on the results of the research on the climate change literacy ability profile of junior high school students in Ogan Ilir Regency, it can be concluded that the majority of students have climate change literacy skills in the moderate category which shows a sufficient basic understanding of students related to climate change issues, accompanied by a tendency to have a positive attitude, as well as the initial ability to take real action. However, students' abilities are not fully optimal in the indicators of knowledge, attitude, and competence, so they still need further strengthening. In the analysis of climate change literacy indicators, the attitude indicator with the highest proportion of categories among the other two indicators. This indicates that students' awareness and concern are good in responding to climate change issues. The knowledge indicator also shows relative strength in the mastery of factual information in the high and very high categories. However, the competence indicator is still a significant challenge, with a fairly high proportion in the low

category. This shows that there is a need to strengthen the ability of students to apply their knowledge and attitudes in real actions. In addition, this study found differences in the profile of climate change literacy ability in schools with different levels of accreditation, confirming that high accreditation does not directly guarantee a high level of literacy. This is evidenced by SMP C (Accreditation C), which shows the highest percentage in the overall high category. The results of the study imply the need to strengthen an environment-based curriculum, a contextual learning approach to foster students' real skills in dealing with climate change issues.

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