Anatolian Journal of Education
e-ISSN: 2547-9652

April 2023 ● Vol.8, No.1
www.e-aje.net
pp. 159-172

Exploration of Integrated Science-Physics Textbooks Based on Science Literacy Indicators: A Case Study in Kendari City Indonesia

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The purpose of this research is to analyze and describe learning textbooks that include elements of science literacy, particularly in the Integrated Science-Physics Test Book for junior high school grade VIII. This study is part of a quantitative descriptive study analyzing the content of science literacy elements contained in textbooks. The textbooks used come from two sources: science textbook for junior high school publisher form Erlangga and Publisher of Ministry of Education and Culture edition Revision 2017. The analyzed materials include (1) force and motion and (2) simple aircraft. The analyzed object of science literacy consists of four indicators: (1) science as science; (2) science as a method of investigation; (3) science as a way of thinking; and (4) science as a technology-society interaction. Data collection techniques are presented in the form of rubrics with descriptive analysis techniques. With a percentage of 46.5% for both textbook sources, the element of science as knowledge was found to be the most important part of science literacy. Furthermore, the element of science as a process of investigation amounted to 37.7%, followed by science as a process of thinking by 12.1%, and finally science as a process of interaction between technology and society by 3.6%. From the analysis results obtained, it is clear that each of the two test books has included aspects of science literacy in its physical science material, but the provision of material is still dominated by the knowledge of science compared to other aspects. Meanwhile, current learning conditions emphasize more on how to integrate learning in the form of STEM, which includes elements of science, technology, and society. Thus, the application of aspects of science literacy, particularly science as a thinking process and science as an interaction between technology and society, should be encouraged.

Keywords: textbooks, literacy science, student, problem solving

INTRODUCTION

In the era of 21st century learning development, the dominance of technological advances plays an important role, especially in the field of education (Lazorenko & Krasnenko, 2019). To support the learning process, various types of technology have emerged, either in real or virtual form (Kumi-Yeboah et al., 2020; Samaniegoerazo et al., 2015). This undoubtedly has an impact, both in terms of

Citation: Fayanto, S., Sulthoni., Wedi, A., Takda, A., & Fadilah, M. (2023). Exploration of integrated science-physics textbooks based on science literacy indicators: A case study in Kendari City Indonesia. *Anatolian Journal of Education*, *8*(1), 159-172. https://doi.org/10.29333/aje.2023.8111a

benefits and drawbacks. The benefit that results is the simplicity of access, particularly in supporting student teaching (Thomas et al., 2002). Such access is available in both online and traditional classroom settings. In contrast, excessive use of technology can have drawbacks such as a decline in ethics, morals, and critical thinking abilities (Ab-Hamid et al., 2021; Philbeck et al., 2018). This is because technology dependence causes students to be lazy and prioritize other activities. To anticipate this, science literacy is needed. Turiman et al. (2012) and Annisa & Laksono (2021) reported that science literacy is the most important element in providing knowledge to students, especially in the face of increasingly advanced learning and technology in the 21st century. According to Maknun (2014) and Hastuti et al. (2020), science literacy is a pattern for developing one's own capacity in the form of scientific knowledge literacy. It is designed to be able to identify questions and create a framework for thinking in drawing conclusions from any process based on empirical facts, particularly those related to life and the universe. Especially in Indonesia, the learning process is divided according to the level of education and the learning level. One of the most dominant parts of science literacy is in science learning materials (Budiningsih et al., 2015).

The knowledge component of science instruction is prioritized in schools over the process component, without consideration for whether students understand the material being taught (Davis, 2000; Rambe, 2020). Students are excellent at memorization but not so good at applying what they have learned, as evidenced by this fact. According to Puspita et al. (2021) statement that "dominant science knowledge makes students less skilled in using the knowledge they learn," this is in line with their statement. Students use their memories to learn science, not their thinking skills. This is because the curriculum places more emphasis on technical proficiency than critical thinking, leading students to memorize information rather than develop critical thinking skills. In addition, grade 7 physics instruction at the junior high school level is quite difficult due to the material's complexity. It negatively affects the science literacy skills of many students because they don't understand it (Saputro et al., 2021). Science literacy is essential if you want to improve your skills, especially when meeting different needs like the challenges of modern life. Students will be able to learn more about what it means to live in society if they know how to use science (Yuliati, 2017). Kelana (2019) says that science literacy is a system in which learning patterns focus on concepts and give hands-on experiences to help develop attitudes and a broader understanding of how science works.

PISA 2018 (Program for International Student Assessment) reports that Indonesian students' science literacy skills are still below average. Indonesia has a science literacy score of 396, ranking 74th out of 79 countries (Hewi & Saleh, 2020). According to the results of the PISA study, Indonesia's science literacy ranking is always in the bottom ten. Rustaman (2016) wrote that the average science literacy score of Indonesian students is 400, which means that Indonesian students are only good at remembering scientific knowledge based on simple facts (such as names, facts, terms, and simple formulas). The majority of Indonesian students, including those in Kendari City, Southeast Sulawesi, concur with this finding. The literature review revealed that the average science literacy of grade X students at SMAN 1 Kendari, one of the top schools in Kendari City, Southeast Sulawesi, was 50.85% in the low category (Erniwati et al., 2020). Sutrisna & Gusnidar (2022) said that only 26.3% of Indonesian students knew enough about science to infer from simple observations, and 41.9% did not have enough access to information based on research. Sutrisna (2021) reported that the low science literacy of Indonesian students is due to a lack of learning that includes scientific processes such as using knowledge to explain natural phenomena and drawing fact-based conclusions from experiments. In addition, Indonesian students do not know much about science because they do not use learning tools such as textbooks.

In addition, individual student experimentation is encouraged. Many examples of experiments are included in the text, lending credence to the idea that the material presented is more accurate than what might be found in a more general resource. When deciding on and implementing a textbook, it's

important to take into account the nature of the course and the instructor's intended delivery method. An important component in a spatial population geography textbook's ability to raise students' grades is whether or not its content matches those of the course. A textbook is an integral part of any curriculum. A good textbook will cover the fundamentals of the topic and help students apply what they learn to the actual world. Students' ability to think critically about diversity issues is a further benefit of textbooks (Abdullkarim et al., 2020; Sholehhudin et al., 2020; Suwito et al., 2020).

Government regulation 32 of 2013 says that textbooks are the most important way to teach basic skills and core competencies. Penney et al. (2003) and Lee & Wan (2022) argued that books have a significant influence on the growth of science literacy and offer long-term potential. As such, it is important for teachers to pay attention to the selection of quality textbooks. The main thing to keep in mind when choosing textbooks is that they should meet the needs of the students. Therefore, it is important to thoroughly evaluate the quality of the textbooks available in schools and those already on the market before they are used by teachers to teach in class. It is clear that Indonesia needs to look at its textbooks to improve the quality of education and learning, especially in the area of science literacy.

Integrated science learning books should fulfil scientific aspects and facilitate students' science literacy. However, until now, the analysis of science literacy in integrated science textbooks has not been done in depth. Therefore, the author is interested in conducting a study related to the analysis of junior high school science textbooks, Class VIII, Semester I, based on science literacy. The purpose of this study is to: (1) describe junior high school science textbooks in Grade VIII, Semester I, based on science literacy categories; and (2) evaluate the textbooks' science literacy. to find out the comparison of junior high school science textbooks (MTs class VIII, semester I) based on science literacy categories.

METHOD

This investigation uses the content analysis method to discuss scientific literacy studies from a quantitative and descriptive perspective. Document analysis, also called "content analysis," is a way to obtain information by looking for patterns in existing written or visual materials. The main source in this study was the junior high school science book for grades VIII and I Erlangga publisher and the Publisher of Ministry of Education and Culture edition Revision 2017 and used in public junior high schools in Kendari City. The content is broken down into sub-topics namely simple airplanes, forces and motion. This research focuses on the 2013 semester 1 science textbooks used in grade VIII of junior high school, the research procedure display in Figure 1.

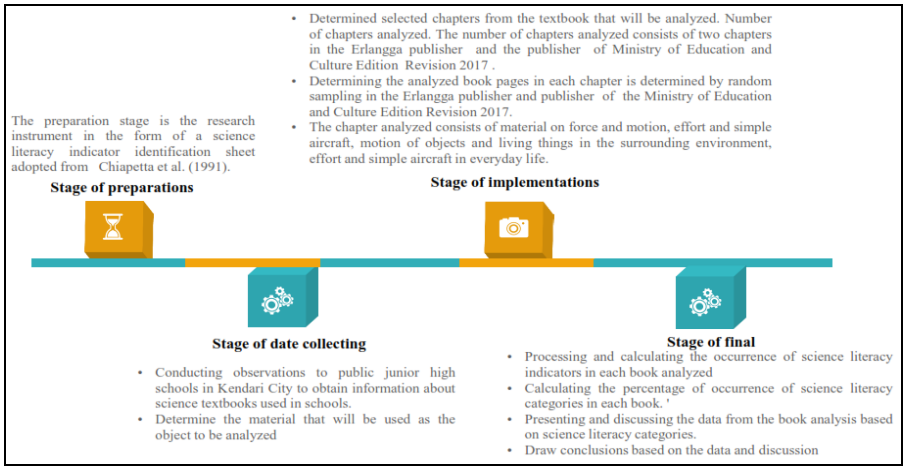


Figure 1
Research procedure

In the study, descriptive methods were used to collect data. The analysis was concluded by reading, understanding, and comparing the text content of each page with statements from the science literacy indicators. An information place assessment sheet was incorporated into the instrument. Text elements or units that are identified An observation sheet in the form of a rubric adopted from Chiappetta & Filman (2007), shown in Figure 2, served as a reference for the study. Paragraphs, pictures, tables, and their complete descriptions, complete laboratory procedures, and hands-on activities constitute the list of text elements or units examined (Wilkinson, 1999). An observation sheet in the form of a rubric adopted from Chiappetta & Filman (2007), shown in Figure 2, served as a reference for the study.

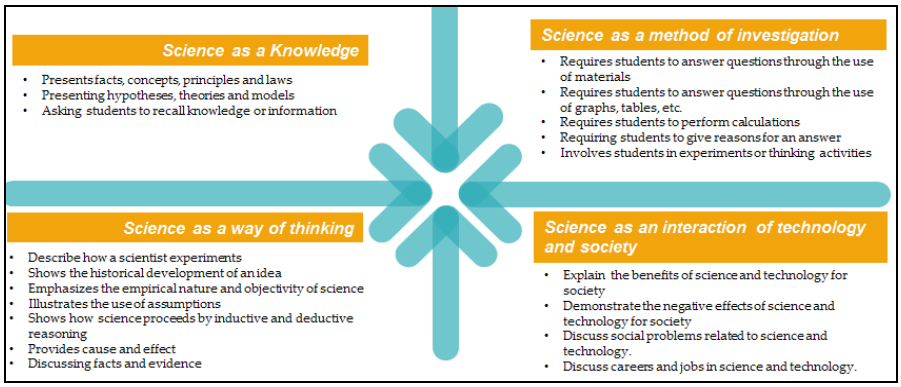


Figure 2
Research instrument indicators

Data analysis was carried out by determining the percentage of science literacy categories in the chapter under study. Equation (1) was used to calculate the final results of each content area related to science literacy (Arikunto, 2014).

$$\% = \frac{\Sigma \text{ the number of indicators per category}}{\Sigma \text{ the total number of indicators per category}} \times 100\% \qquad (1)$$

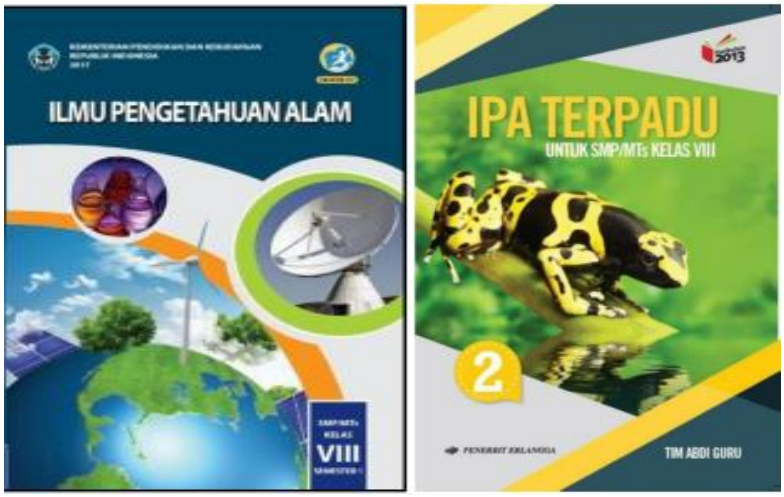
The average percentage of each science literacy category is shown in Table 1. The results of the percentage coverage of science literacy by assessment criteria were then found.

Table 1
Assessment criteria

No	Score percentage	Criteria
1.	83 % - 100 %	Very high
2.	63 % - 82 %	Tall
3.	44 % - 62 %	Currently
4.	25 % - 43 %	Low
5.	< 25 %	Very low

FINDINGS

The goal of this study is to find out how many science literacy skills are taught in the first semester science books for eighth graders on the topics of force and motion and simple aircraft.



(a) (b)

Figure 3
Cover of the integrated science textbook Erlangga Publisher, (b) Cover of the integrated science textbook of the Publisher of Ministry of Education and Culture edition Revision 2017

This study uses two books, as presented in Figure 3. It is meant to be used as a reference for lessons, especially in Indonesia, where many people use reference books from different publishers. However, in this investigation, researchers used books from Erlangga Publisher and a book from the Ministry of Education and Culture, Revision 2017. This is based on the fact that these two books are very easy to find in schools in Indonesia. Aside from that, it talks about many things, especially those that have to do with reading and writing, but the two books look at them from different angles. Science literacy indicators are presented in the Science-Physics book by Erlangga in accordance with the stages of science literacy, but each indicator places a greater emphasis on knowledge than other aspects. The same is true of the Kemdikbud-Ristek book on science and physics, which is used in classrooms as a reference. Although the book contains elements of science literacy, some of them are not particularly highlighted. The book published by Ministry of Education and Culture edition Revision 2017 is the same as the science-physics book, but it puts more emphasis on the knowledge part of science literacy than on other parts. The percentage of occurrence of science literacy categories in each junior high school science textbook, grade VIII, semester I is presented in the form of science knowledge, science as a method of inquiry, science as an approach to thinking, and the relationship between science, technology, and society. In Table 2 below, you can see how often science literacy is covered in the reviewed textbooks.

Table 2
Percentage of appearance of science literacy indicators

Aspect of literacy science	A	∑	%	B		∑	%	Average (%)
1	49	23	72	44,7	41	19	60	48,4	46,5
2	40	23	63	39,1	31	14	45	36,3	37,7
3	13	5	18	11,2	12	4	16	12,9	12,1
4	6	2	8	4,97	2	1	3	2,42	3,6
Sum	108	53		100	86	38		100	100
Total	161				124				

Notes:
Source: A (Erlangga Publisher Book); B (Publisher of Ministry of Education and Culture edition Revision 2017)
1: Science as Knowledge
2: Science as a method of investigation
3: Science as way of thinking
4: Science as a process of technology and society interaction

The difference in the appearance of the two books demonstrates that the knowledge aspect is the highest or has the most visible science literacy indicators, whereas the science, technology, and society interaction aspect is the lowest or least visible. But both books have implemented aspects of science literacy but not yet balanced. The element of science as a body of knowledge is the aspect of science literacy that appears most often in Textbook A and Textbook B when the two books are compared. The most important indication is that both books offer facts, concepts, and principles. This suggests that science as a body of knowledge dominates both textbooks, but interactions among science, technology, and society rank lower in both.

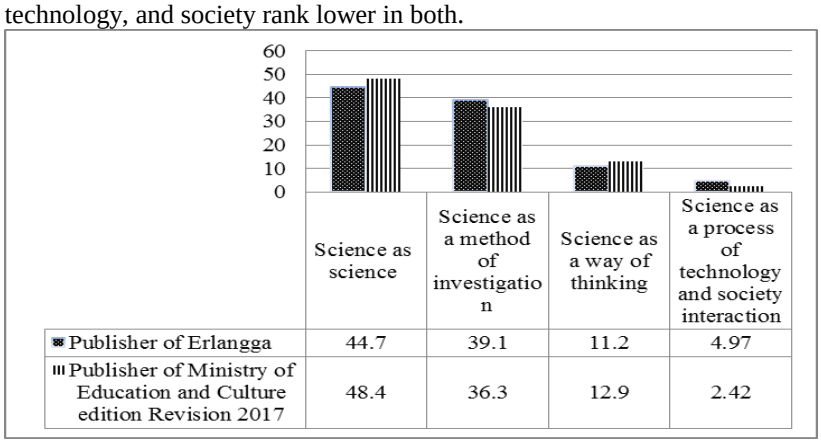


Figure 4
Percentage comparison between the two books

Based on the review of the textbooks' content, it was decided that all parts of science literacy were covered, even if they were covered in different ways. In the student textbooks examined, the knowledge category dominated. It is different in the aspects of science as a method of inquiry, science as a way of thinking, and science as a process of interaction between technology and society; each book contains only facts, concepts, principles, and laws. But it doesn't show it or get students to do explorations so that they can come up with their own hypotheses or models. According to Rokhmah et al. (2017), exploration activities call for students to investigate a specific issue or phenomenon using sophisticated skills, including both mathematical and non-mathematical methods. Students will be encouraged to be more critical and engaged through exploration activities rather than simply accepting the ideas presented in the textbook. The learning process encourages students to observe, predict, investigate, analyze, and draw conclusions through these activities. The types of activities that can be carried out include experimentation, observation, literature study, and role play.

Table 3
Indicators of Scientific Literacy: Science as knowledge

Indicator of literacy science		Book A		Book B	
Science as knowledge		Chapter 1	Chapter 2	Chapter 1	Chapter 2
Present facts, concepts, principles, and laws	Fact	0,62%	-	4,84%	0,81%
	Draft	27,95%	10,56%	20,16%	6,45 %
	Principle	-	3,11%	4,03%	8,06%
	Law	1,86%	0,62%	2,42%	-
Presents theories, models, and hypotheses	Hypothesis	-	-	-	-
	Theory	-	-	-	-
	Model	-	-	-	-
Encourage students to remember knowledge or information		-	-	1,61%	-
Total		44,72%		48,39%	

Source: A (Erlangga Publisher); B (Publisher of Ministry of Education and Culture edition Revision 2017)

Table 3 reveals that the knowledge element from Erlangga's books is most prevalent, particularly in the area of presenting facts, concepts, principles, and laws, where it accounts for 44.72% of all occurrences. The elements of statements, the presentation of hypotheses, and the request that students recall knowledge from the information acquired do not appear in every question pertaining to aspects of science literacy in the Erlangga book. In contrast, the percentage of occurrence for the aspects of presenting facts, concepts, principles, and laws was 48.39% in the book published by Ministry of Education and Culture edition Revision 2017. Meanwhile, the aspect of presenting hypotheses, theories, and models does not appear in the book. Additionally, the book published by Erlangga does not seem to be even one percent effective in encouraging students to remember knowledge or information, in contrast to the book published by Ministry of Education and Culture edition Revision 2017 with a percentage of 1.61%. According to Sahriani et al. (2021), the four components of science literacy are roughly distributed in the following ratios: 2:1:1:1 for the first three components, 42% for the components of scientific knowledge, 19% for the components of the nature of scientific inquiry, 19% for the components of science as a way of thinking, and 20% for the components of the interaction of science, technology, and society.

In the materials of the two sources, motion, force, and simple motion are presented in different ways. In their study, Adisendjaja & Oom (2008) wrote that 82% of science literacy criteria can be found in scientific knowledge. The science knowledge category is the most common because when authors and publishers write textbooks, they focus more on scientific knowledge, such as scientific facts, scientific concepts, and scientific principles, as the knowledge to be understood and the basic concepts that students should be familiar with. But in theory, many publications don't say how much each area of science literacy should be covered in science textbooks (Setiawan & Rusnayati, 2014). Moreover, from the analysis, it can be revealed that there is no cue to ask students to recall facts or information in book A in the analyzed books. Although this indicator can help students combine previously taught material with new information because they are more used to memorizing, Indonesian students are not as good at applying what they know as other students. Indonesian students aren't as good at applying what they know as other students because they are more used to memorizing information. Since students rarely use their critical thinking skills and are more likely to just memorize things, this is likely to hurt how they learn in school, where knowledge is more important than other parts of literacy.

According to Yuliyanti & Rusilowati (2014) research, textbooks had the highest percentage of science knowledge markers studied, namely 69.61%. Facts, concepts, principles, and laws are examples of scientific knowledge that are most frequently found in Book B, but hypotheses, models, and theories do not contain examples at all; the highest percentage is 48.39%, found in Book B. This demonstrates how science knowledge indicators predominate in the books under study's category for science literacy. There is concern that students who are more proficient at knowing science knowledge but less adept at applying that knowledge, or who have a propensity to learn science by memorization rather

than by using thinking skills, will have a negative impact on science learning. It is found from the two source books that the provision of material focuses more on the knowledge category and the presentation of several elements of science literacy is not balanced.

Table 4
Indicators of Scientific Literacy: Science as a method of Investigations

Science Literacy Indicator	Book A		Book B	
	Chapter 1	Chapter 2	Chapter 1	Chapter 2
Ask students to use the material to respond to questions.	-	4,35%	1,61%	-
Ask students to use graphs, tables, to respond to questions.	2,48%	3,73%	11,3%	3,23%
Ask students to do calculations	7,45%	2,48%	2,42%	4,03%
Requires students to provide reasons for an answer	6,21%	1,24%	4,03%	1,61%
Invite students in experiments or thinking activities during the learning process	8,70%	2,48%	5,65%	2,42%
Total	39,13%		36,29%	

Source: A (Erlangga Publisher Book); B (Ministry of Education and Culture Publisher)

According to the analysis of Book A (Table 4), science as a method of investigation that is frequently encountered involves students in thinking activities, whereas less is done when students answer questions using materials, with a percentage of only 4.35%. Based on the results of the occurrence of science as a way of investigating, the percentage is 39.13%, slightly different from the percentage results on science knowledge. The information gathered from this survey, according to the findings, reveals what students who typically learn about science by reading books think about the scientific method and how this method aids in our understanding of the world as a whole. The majority of scientific breakthroughs result from applying what is already known and practiced in new contexts. Science process skills, according to Zulfiani & Suartini (2009), include making observations, figuring out what they mean, grouping them, making predictions, discussing aptitudes and hypotheses, putting together experiments or investigations, applying concepts or principles, asking questions, and drawing conclusions. This study looks at some exercises and experiments that are used to explain abstract concepts to students.

The investigation method indicator in Book B is asking students to answer questions by using graphs, tables, and other aids, as well as asking them to use information that is not in the evaluated book, for a total percentage of 36.29. This is part of the investigation method indicator in Book B. Retno et al. (2017) found that the second-highest proportion (28%) of chemistry textbooks used in three schools discuss examining the nature of science. Textbooks that don't emphasize using science as a method of investigation should be given more consideration as they can help students develop their skills (Yu et al., 2022). Science knowledge, scientific methods, the development of scientific attitudes, and students' understanding of science in order to use their knowledge of science to solve various problems and make decisions based on scientific considerations are, in Yulianti (2017), the most fundamental components in fostering students' science literacy.

Table 5
Indicators of scientific literacy: Science as a way of thinking

Science Literacy Indicator	Book A		Book B	
Science as a way of thinking	Chapter 1	Chapter 2	Chapter 1	Chapter 2
Describes how a scientist experiments	0,60%	0,60%	-	-
shows the historical development of an object of thought	-	-	0,81%	0,81%
Focusing on the empirical nature and objectivity of science	-	-	-	-
Describe the use of assumptions and hypotheses	-	-	-	-
Identify the process of how science works with inductive and deductive reasoning	-	-	-	-
Make causal correlations	0,62%	-	2,48%	-
Communicating facts and evidence	-	0,62%	-	-
Bring up the scientific method and steps to solve a problem	7,45%	2,48%	4,35%	2,42%
Total	11,18%		12,90%	

Source: A (Erlangga Publisher Book); B (Publisher of Ministry of Education and Culture edition Revision 2017)

In the book Science as a tay of thinking by Erlangga (Table 5), scientific methods and problem-solving are mentioned 16 times, which is 9.94% of the book. Talk about the facts and evidence and give the second-most likely cause-and-effect link, which is 0.62% or one statement. It describes how a scientist conducts experiments, shows how an idea evolved, shows that science is based on facts and is objective, shows how assumptions work, and explains how science advances through inductive and deductive reasoning that is not found in the book under consideration. In contrast, in Publisher of Ministry of Education and Culture edition Revision 2017, science is more about giving the second-most causal relationship (four statements) and showing the historical development of an idea (two statements). Explains how a scientist conducts experiments, determines the empirical nature and objectivity of science, and employs assumptions. This is in response to research by Safitri et al. (2021), explaining that few books about situations or subjects can attract students' attention and motivate less demanding children to use critical thinking based on what is happening around them

Table 5 reported the most common way of thinking in Book B is to outline the scientific method and several stages for solving problems. Findings from science's awakening to the third highest mode of thinking say that the number is 12.9%. This is in line with Rosyidatun & Miranto (2015) research, which found that the percentage of Q and R books that used scientific indicators as a thinking style was 4.1% and 5.7%, respectively. Because science is about things seen in nature, it can be used to help people learn more about science using cause and effect. Because science essentially has a causal relationship between observed natural events, science plays an essential role in the formation of scientific literacy.

Table 6
Indicators of science literacy: Science as an interaction between technology and society

Science Literacy Indicator	Book A		Book B	
	Chapter 1	Chapter 2	Chapter 1	Chapter 2
Explain the importance of science and technology for society	1,86%	-	1,61%	0,81%
Explain how relevant science and technology benefit society	1,24%	-	-	-
Discuss how social issues involving science and technology are related	0,62%	1,24%	-	-
Provides details about jobs and careers in science and technology.	-	-	-	-
Total	4,97%		2,42%	
Overall total	100%		100%	

Source: A (Erlangga Publisher Book); B (Ministry of Education and Culture Publisher)

In contrast to the aspect of the interaction between science and society in Erlangga's book (Table 6), where 1.24% or 2 statements demonstrate how science and technology have a negative impact on the second largest society, the science and technology indicators presented are more focused on explaining the benefits of science and technology to society and discussing social issues related to science and technology, totaling 1.86% or 3 statements. On the other hand, there is no mention of discussing vocations or jobs in the realm of science and technology. The Interaction of Science, Technology, and Society, Ministry of Education and Culture edition Revision 2017 publisher , provides an explanation of how science and technology benefit society with a total appearance of 2.42%, or 3 sentences. There are no examples that demonstrate how science and technology negatively impact society, discuss social issues associated with science and technology, or discuss careers and jobs in the field.

In Book A, the various connections between science, technology, and society are discussed. These connections both emphasize the importance of the positive effects of research and technology on society and look at the social challenges that science and technology present. Science textbooks do not cover career topics in science or technology, despite the fact that students need to know about these symptoms to comprehend the risks associated with technology. The category of interactions between science, technology, and society is ranked fourth overall by Wahyu & Markos (2016), with an occurrence rate of 4.76%. One type of communication that cannot be separated is the interaction

between science, technology, and society. Technology helps science move forward, which in turn helps technology move forward. This is a win-win situation for both fields. As a result of scientific progress, technology has made living conditions better, so it is important for students to use technology to meet their needs.

In relation to the Publisher of Ministry of Education and Culture edition Revision 2017 Book on the interaction of science, technology, and society, it was discovered that the general approach was to describe the advantages of science and technology for society while outlining its drawbacks. Not only did they not talk about careers and jobs in science and technology, but they also did not talk about social issues related to science and technology. Based on the results of the study, 2.42 percent of the percentages were found in at least one of the books that were looked at. Kurnia & Faturrohman (2014) argue that the category of interaction between science, technology, and society may only account for 1.08% of all aspects of science, technology, and society.

The category of science, technology, and society connections refers to the scientific context, which represents all aspects of science and technology in everyday life. Students studying scientific textbooks often find this section particularly interesting as it contains information about the students' daily lives. The inclusion of science literacy in textbooks in this category is intended to increase students' enthusiasm for learning science and strengthen their conceptual understanding. Science is a process of discovery as evidenced by the fact that science or natural science (*IPA*) books typically discuss how to methodically find information about natural phenomena. Science is not only the mastery of a body of knowledge in the form of facts, concepts, or fundamentals. This shows that science education also puts a lot of emphasis on how science works and how it fits into the world. One factor that can help the learning process is the coverage of science literacy categories in science textbooks. This is a result of the fact that textbooks have grown to be an important element of education that directly impacts students.

CONCLUSION, DISCUSSION AND SUGGESTIONS

In general, the textbooks analyzed presented a lot of scientific knowledge, namely facts, concepts, principles, and laws. Chiappetta et al. (1991) in their research analyzing science textbooks also concluded that textbooks focus on the collection of scientific knowledge only. The results of previous research on teaching materials have been resport by Fairuz et al. (2021), who found that teaching materials have as much effect as teachers, perhaps even more because they can be studied anywhere and anytime. According to Sinaga et al. (2017), improving high school students' science literacy can be accomplished through the use of appropriately developed science books, with a significant increase in science literacy in each domain.

Science as a way of thinking in activities should be given a prominent place in the development of science literacy. This is because science basically has a causal relationship between observed natural phenomena, especially natural disasters (Puspita et al., 2021). Textbooks used by students are required to contain something that can stimulate thinking because it can attract students' attention when starting learning activities. According to Ruwanto (2013) and Andriani & Ismet (2017), textbooks should be used to initiate the student inquiry process and to attract students conducting investigations because textbooks that lead to inquiry can stimulate students to be active rather than passive recipients of information. This demonstrates how education has given students the chance to collaborate and exchange knowledge. Erdogan & Koseoglu (2012) say that it is important to change the way students think in order to make them better. Science as a way of thinking needs to be emphasized more in textbooks if this goal is to be reached.

In the Indonesian book by Amin et al. (2018), the proof of the theory shows the empirical side. On other pages, however, the book represents the empirical aspect by displaying findings by scientific

researchers, such as in quotations. the theory-driven or interpretative aspect of producing scientific claims (Amin et al., 2018). In the Indonesian book, the empirical aspect is represented through scientific evidence. Although the empirical aspect must come from observations of natural phenomena, not experimental evidence by scientists, the practical aspect is demonstrated with evidence from historical sketches in the form of scientists' findings on other pages (Sumarni et al., 2022).

The results of this study show that science as a body of knowledge and science as a way of investigating are prevalent themes of the nature of science in the five science-physics textbooks. The investigation also found that there is an imbalance in diversity in the chapters of the studied science-physics textbooks. This imbalance reflects unbalanced or misaligned ratios. Since science and physics textbooks are the main source of information in most classrooms, an imbalance in the way science works can make it hard for students and teachers to get a full picture and understanding of how science works. This can also leave students without the skills they need to find and use scientific information in their everyday lives. Educators and publishers should provide science textbooks that incorporate all four aspects of the nature of science to the extent that science is considered more than just facts and information. Science should be recognized as a way of investigating, a way of doing things, and a way of applying knowledge to society. Science should be recognized as a way of investigating, a way of thinking, and a way of applying knowledge to society. Furthermore, to recognize all the people who take part in science, students and scientists from different ethnic groups should be portrayed in physical science textbooks.

Reid & Hodson (1987) say that science literacy should include the following: science knowledge, application of knowledge, science skills and tactics, problem solving and investigation, interaction with technology, socio-economic-political and ethical-moral issues in science and technology, the history and development of science and technology, and the study of science and scientific practice. On a smaller scale, Jon Miller says that to be scientifically literate, you need to know basic scientific terms, understand how science works, and know how science and technology affect society. In science textbooks, there are no guidelines that specify the range of each science literacy category. However, it is believed that the presentation of a large category of scientific information (science content) has a negative impact on student learning or classroom learning. By shaping students' own ways of thinking and conducting their own scientific research, their science education will focus more on mastering science content than scientific methods. Students who don't know much about the scientific method may find it hard to relate science to their everyday lives. This can make it harder for them to understand how science, technology, and society work together.

Regardless of the results of the investigation, there was no noticeable difference between the two books based on comparing them by science literacy category, that is, neither of the investigated books covered all aspects of science literacy. Based on the science literacy indicators, the two books were similar in that knowledge was equally dominant in both, while science, technology and society interactions were significantly underrepresented in both. All four categories of science literacy are indicated in Kendari City textbooks in general, but there is an imbalance in each of the books studied based on these categories.

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