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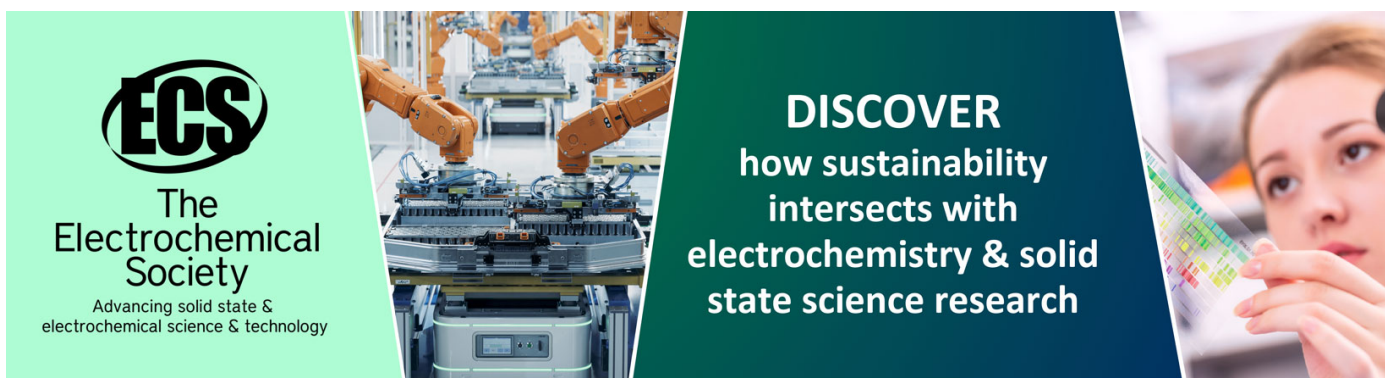
Profile of Junior High School Science Textbooks: Fulfillment of the Higher-order Thinking Skills component

To cite this article: Y Trisnayanti *et al* 2021 *J. Phys.: Conf. Ser.* **1842** 012053

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Profile of Junior High School Science Textbooks: Fulfillment of the Higher-order Thinking Skills component

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Abstract. This study aims to analyze the fulfillment of HOTS components in elements such as learning indicators, materials, activities, and competency test questions in science textbooks for Class VII Semester 2. The research method uses mixed methods with an explanatory design starting from the collection and analysis of quantitative data followed by the collection and analysis of qualitative data that is built on the initial results of quantitative data. The material used to analyze HOTS fulfillment of "The Interaction of Living Things with the Environment" with Basic Competencies of 3.7 and 4.7. There are 27 identified components of HOTS fulfillment that are based on 8 learning indicators, 12 learning activities, and 7 competency test questions. With the results of HOTS fulfillment recapitulation the percentage of HOTS cognitive level at the analysis level (C4) 66.67%, the evaluation level (C5) 3.70%, and the creative level (C6) 11.11%. While the HOTS development matrix consists of 56 levels with high criteria of 30.36%, medium criteria of 41.07%, and low criteria of 28.57%. HOTS occurs when students are involved so that through a series of HOTS activities by determining learning sources in textbooks and appropriate learning arrangements, junior high school students can develop higher-order thinking habits.

1. Introduction

The educational paradigm that is reflected in the knowledge of the 21st Century Skill shows that knowledge alone is not enough. One of the provisions that must be given in preparing the future workforce is to teach students how to think [1], [2] and solve problems[3]–[5]. These thinking skills are the capital to be able to compete so that it is important to be developed by students [6]–[8]. High-order thinking skills play an important role in applying, connecting, or manipulating previous knowledge to solve new problems effectively [9].

Several research studies indicate that the assessment carried out at the school level requires the ability of students to be able to think at a higher level when faced with a problem or question which in turn can generate ideas for solving problems [10]–[12]. HOTS consists of problem-solving, decision making, critical thinking, and creative thinking [13]. In Bloom's revised taxonomy, HOTS is defined as the top three ability levels in the cognitive dimensions of analyzing (C4), evaluating (C5), creating (C6), and the dimensions of knowledge (factual, conceptual, procedural, and metacognitive) [5], [14]. Thomas, A., and Thorne stated that HOTS can be learned, can be taught to students, and can be improved students' skills and character [9], HOTS means the capacity to go beyond the information provided, adopt a



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critical attitude, to evaluate, have metacognitive awareness and problem-solving capacity in complex thinking, solving complex and high-level problems to critical and creative levels [6], [15]. The demands of the Indonesian national education system are to state the importance of higher-order thinking skills as contained in the National Education System Law No. 20 of 2003 concerning the development of the potential of students to become critical, creative, and independent humans. This means that the Indonesian National Education System aims to provide a learning environment that enables the development of the potential of students to acquire knowledge and higher-order thinking attributes to become the core of classroom learning [15], [16].

In a variety of learning, the existence of textbooks has a vital role during the learning process [17]–[19]. To be able to choose a good textbook, we need a way of analyzing books that involve aspects that contain dimensions of factual, conceptual, procedural, and metacognitive knowledge. The importance of looking at and examining the existence and role of textbooks for long-term learning in science [20]–[22] and in developing cognitive abilities, a textbook analysis is needed to improve the quality of education in Indonesia in empowering higher-order thinking skills. The fulfillment of the HOTS indicator from Anderson and Krathwohl can be explained in the sub-indicators and descriptors for analyzing the integration of HOTS with integrated Science Learning Indicators which can increase HOTS [23], [24]. Based on the description above, it is necessary to analyze the fulfillment of the HOTS Indicator in the Junior High School Science Learning book to empower junior high school students' higher-order thinking skills in learning, then this study aims to analyze the fulfillment of HOTS components in elements such as learning indicators, materials, activities, and competency test questions in the Science textbook Class VII Semester 2. Basic Competence (BC) is determined based on the identification of the 2013 curriculum distribution at BC 3.7. and BC. 4.7. The fulfillment of HOTS criteria can be a reference or as a consideration in determining learning settings in science learning modes, media, and resources.

2. Materials and Methods

The research method used is a mixed-method with a sequential explanatory design [25]. The application of a sequential explanation design starts from the collection and analysis of quantitative data followed by the collection and analysis of qualitative data which is built on the initial results of quantitative data [26] as follows :

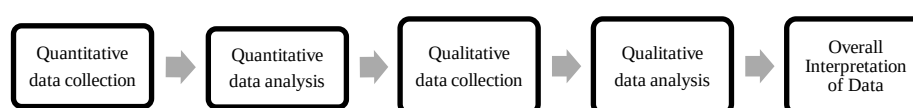


Figure 1. Sequential Explanatory Research Design [26] (Creswel, 2013)

Textbook analysis for HOTS achievements involves aspects that contain dimensions of factual, conceptual, procedural, and metacognitive knowledge. Aspects of the conceptual analysis of HOTS indicators are described based on the bloom taxonomy revised by Anderson, L., and Krathwohl, D (2001) [14] includes: 1) Analyzing (C4) consists of three indicators, namely: Distinguishing, Organizing, Attributing; 2) Evaluating (C5) consists of two indicators, namely: Checking, Criticizing, and 3) Creating (C6) consists of three indicators, namely: Formulating, Planning, Producing. In the analysis of the 2013 curriculum science textbook, the elements consist of basic competencies and indicators that will be the subject [27]. Then the next stage to take is

1. Creating a development matrix for HOTS fulfillment indicators to determine High, Medium, and Low criteria
2. Analyze HOTS compliance components through materials, learning activities, and competency tests
3. Make data interpretations based on the fulfillment results and analysis to conclude

3. Result

At this stage, the HOTS indicator matrix is developed against BC.3.7 and BC. 4.7. through learning materials. The development of the fulfillment of each criterion can be seen in Table 1.

Table 1. The Higher Order Thinking Skill (HOTS) Indicator Development Matrix BC 3.7 and 4.7

No	Learning Indicators	Learning materials		HOTS	Fulfillment		
				indicator	H	M	L
Basic Competence: 3.7. Analyze the interactions between living things and their environment and the population dynamics due to these interactions.							
1	3.7.1. Explain the concept of the environment and its components	Environmental Concept		1	√		
		Understanding the concept of the environment, training awareness of the nature of oneself and one's existence in an environment through observing a macro environment that is engineered by students in an observation activity	C4	2	√		
				3		√	
			C5	1		√	
				2		√	
				1			√
2	3.7.2. Conduct environmental observations and identify biotic and abiotic components	What do you find in an environment		1	√		
		Providing learning experiences in terms of knowing the environment. The environment that is introduced is the closest (school or home). Environment as a place to live for living things	C4	2		√	
				3		√	
			C5	1		√	
				2			√
				1			√
3	3.7.3. Describe the meaning of interaction	The interactions in the ecosystem form a pattern		1	√		
		Train students about the patterns that are formed during interactions and environmental components. Knowing the relationship between the organisms contained in the ecosystem	C4	2	√		
				3		√	
			C5	1		√	
				2			√
				1		√	
4	3.7.4. Explain patterns of interaction	Interdependence forms		1	√		
		Train students to observe or observe the interdependence that occurs in living things in an ecosystem community	C4	2		√	
				3		√	
			C5	1			√
				2			√
				1		√	
5	3.7.5. Explain the concept of the interdependence of living things	Human interaction patterns affect the system		1	√		
		Review of learning experiences	C4	2		√	
				3	√		
			C5	1		√	
				2		√	
			C6	1		√	

6	3.7.6. State the difference between food chain and food web, detritus food chain, and grazing food chain	Project Tasks	C4	2		√
				3		√
				1	√	
				2	√	
				3	√	
7	3.7.7. Have the skills to speak in front of the class through the presentation of exploration results	Group work exercises and presentations	C5	1		√
				2		√
				1		√
				2	√	
				3	√	
			C6	1		√
				2	√	
				3	√	
				1	√	
				2	√	
				3		
			C4	1	√	
				2	√	
				3		√
				1	√	
				2	√	
				3		
			C5	1	√	
				2	√	
				1		√
				2		√
				3		

Information:*)

HOTS fullness in the category

1) H = High (I ≥ 4)

2) M = Medium (I: 2-3)

3) L = Low (I: 0-1)

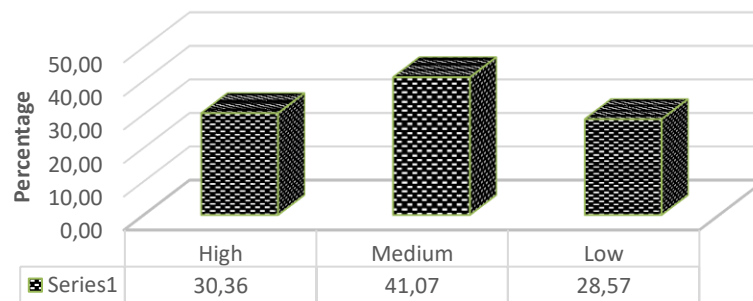


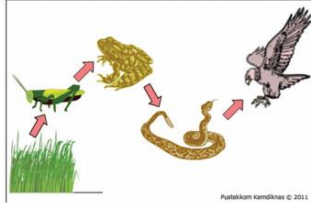
Figure 2, HOTS Fulfillment Development Matrix

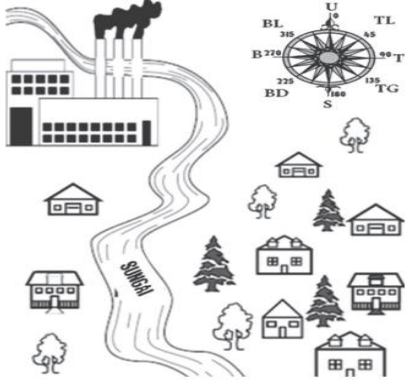
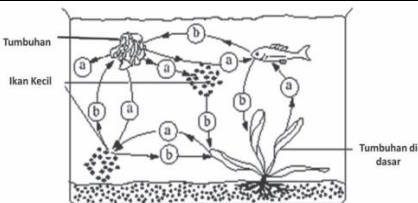
Based on Table 1, the HOTS indicator development matrix through the distribution of compliance criteria at BC.3.7 and 4.7 Science learning textbooks for Class VII Semester 2 on the integration of HOTS fulfillment criteria indicators can be seen in Figure 2 HOTS indicator development matrix at 30.36% high criteria, at the criteria were 41.07% while the low criteria were 28.57%. The HOTS element fulfillment criteria were analyzed based on the BC 3.7 and 4.7 development matrices which included learning materials in determining these criteria. The findings show that several concepts, theories, have not influenced students' higher-order thinking. According to Adisendjaja if we look at facts in the field, Indonesian students are very good at memorizing but less skilled in applying their knowledge[28]. This may be related to the tendency to use memorization as a vehicle for mastering science, but not being able to build one's knowledge or build thinking skills.

The following stage is an evaluation of BC.3.7 and BC. 4.7. The HOTS fulfillment component with the assessed elements such as learning indicators, learning activities, and fulfillment competency tests are assessed through the dimensions of knowledge and descriptor codes, the level of HOTS fulfillment can be seen in Table 2.

Table 2. Data Analysis of HOTS Component Fulfillment

No	The elements being assessed	Knowledge Dimensions	Descriptor Code	Information
LEARNING INDICATORS				
1.	3.7.1. Explain the concept of the environment and its components	Conceptual	C4.2	
2.	3.7.2. Conduct environmental observations and identify biotic and abiotic components	Conceptual	C4.2	
3.	3.7.3. Explain the meaning of interaction	Conceptual	C4.1	
4.	3.7.4 Describe patterns of interaction	Conceptual	C4.1	
5.	3.7.5. Explain the concept of the interdependence of living things	Conceptual	C4.2	
6.	3.7.6. State the difference between food chain and food web, de tritus food chain and grazing food chain	Factual	N	
7.	3.7.7. Have the skills to speak in front of the class through the presentation of exploration results	Procedural	C6.1	
8.	4.7. Presenting the results of observations on the interaction of living things with the environment	Procedural	C6.1	
LEARNING ACTIVITIES				
9.	Let's Learn: Understanding the Environment	Factual	N	Page 29
10.	Let's Do It: Activity 2.1. Study the Environment	Procedural	C4.3	Page 30
11.	Let's Learn: Environmental Components	Factual	N	Page 32
12.	Let's Do It: Activity 2.2. Observing Ecosystems	Conceptual	C4.1	Page 32
13.	Let's Learn: Know and explain patterns of interaction in ecosystems	Factual	N	Page 33
14.	Come on Think: Have you ever seen a leaf with a hole? What causes the leaf to become hollow?	Metacognition	C5.1	Page 33
15.	Let's Do It: Activity 2.3. Understanding the Interdependence of Living Things	Conceptual	C4.2	Page 36
16.	Let's practice:	Conceptual	C4.1	Page 37

No	The elements being assessed	Knowledge Dimensions	Descriptor Code	Information
	 Sumber: dc228-fshareid.com Gambar 2.11 Jaring-jaring makanan About the food chain			
17.	Exploration Activities: Exploration of the ecosystem around the school	Conceptual	C4.2	Page 39
18.	Let's Do It: Activity 2.4. Knowing the form of interdependence	Conceptual	C4.2	Page 39
19.	Come on Think:	Metakognisi	C4.1	Page 41
	 Fish in clean habitat water			
20.	Let's Do It: Activity 2.5. Knowing the condition of the fish is clean and polluted water	Procedural	C6.1	Page 41
COMPETENCE TEST				
21.	 Problem Number 1 If farmers eradicate insects, what will happen to the rice and frog populations? Tell!	Conceptual	C4.1	Page 44
22.	Problem Number 2: What might affect the balance of the rice field ecosystem? Try to identify the 5 abiotic components that are present	Factual	N	Page 45
23.	Problem Number 3: What will happen if the producers in the paddy fields are exhausted due to a natural disaster, for example, a flood?	Conceptual	C4.2	Page 45
24.	Problem Number 4: Why (rice, insects, frogs, snakes, and eagles) can live in the same place, namely the rice field ecosystem? Explain your answer based on picture 2.13	Conceptual	C4.2	Page 45

No	The elements being assessed	Knowledge Dimensions	Descriptor Code	Information
25.	Problem Number 5: If there are no snakes in the rice field ecosystem, try to answer the things that will happen below 1. What will happen to the frog population in the rice field ecosystem? 2. What will happen to the eagle population in the rice field ecosystem? 3. What is the impact on agricultural activities carried out by farmers on the rice field ecosystem?	Conceptual	C4.2	Page 45
26.	 Problem Number 6: Residential residents located on the east side of the river often experience irritation problems on their eyes, while residents on the west side do not. Why does it happen? Tell	Conceptual	C4.2	Page 45
27.	 Can the figures (a) and (b) above represent the interdependence of organisms? Tell	Conceptual	C4.1	Page 46

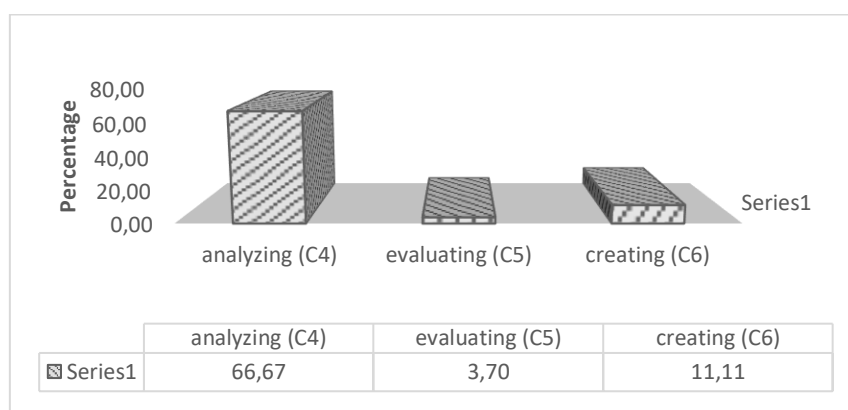


Figure 3. HOTS Component Percentage

Based on Table 2. The identified components of HOTS fulfillment are based on learning indicators, learning activities, and competency test questions. With the results of HOTS fulfillment recapitulation can be seen in Figure 3 the percentage of HOTS cognitive level at the analysis level (C4) 66.67%, the evaluation level (C5) 3.70%, and the creative level (C6) 11.11%. In the research findings, textbooks have not been able to foster higher-order thinking skills in problem-solving such as at the evaluation (C5) and creation (C6) levels, this must be supported by a learning model and curriculum balance that can foster HOTS. In line with the research of Hayat and Yusuf which states that science textbooks for secondary education in Indonesia are still not able to meet expectations resulting in low-quality student learning because textbooks emphasize terms and vocabulary so that students just remember all the information and use that information to answer the test, then think of it as science [29]. HOTS is measured using tasks, including analyzing, evaluating, and creating conceptual and procedural knowledge, or metacognition through the selection of appropriate textbooks. It is hoped that an increase in understanding of science can ultimately improve student learning outcomes. Textbooks as a source of student learning need to be supported by learning designs that can foster student HOTS. Student textbooks are one of the dominant learning materials or learning resources if the learning model is conventional. For textbooks to empower students' HOTS and assist in the development of a science and technology literate society, it is necessary to prepare balanced learning and curriculum that emphasizes knowledge, history of science, and concern for technology and social issues [30].

The evaluation and creation levels require creative ideas that cannot be generated in the usual way. The development of modules or textbooks must be able to stimulate students to understand facts, classify, draw conclusions, relate them to other facts and concepts, make generalizations, and apply them by finding new solutions to new problems [31], [32]. HOTS places more emphasis on thinking skills that combine critical thinking and creative thinking. Giving assignments or assessing students' abilities with instruments for higher-order thinking that have been adapted to the intellectual, thought processes, and realities of life that exist can motivate students. This is because students are no longer busy thinking about abstract things about what they are learning but are busy with new things by existing realities [3]. Through textbooks, students will get a variety of information about the knowledge discussed in learning [33] meaning that familiarizing students with HOTS activities is important to help them prepare to solve new problems, adjust to new situations, and make decisions about a particular problem [34]. Reinforced research about something rational following the facts builds a new paradigm that is more creative and can create a concept into something or something new [14]. Thinking and skillfully solving every problem is a means to solve educational problems. The teacher will develop learning resources by the situation and conditions of the students to achieve the specified learning completeness. Textbooks are included in the main learning components that affect learning outcomes [35], [36]. Not just following the material in textbooks, but there are modifications to learning in the 21st century to answer global challenges. Preparing the millennial generation through HOTS is very much needed to overcome the problems and challenges of modernization [37]. Responding to the

importance of textbooks in the learning process, various studies were conducted. Several studies in various countries have been able to develop innovative textbooks, such as in Turkey [20], [38] to Indonesia [39]–[41].

4. Conclusion

Based on the research, the material used to analyze HOTS discoverers on the interaction of living things with the environment with basic competencies is 3.7 and 4.7. HOTS fulfillment components are identified by HOTS fulfillment recapitulation. The percentage of HOTS cognitive level at the analysis level (C4) was 66.67%, the evaluation level (C5) was 3.70%, and the creative level (C6) was 11.11%. While the HOTS development matrix consists of 56 levels with high criteria of 30.36%, medium criteria of 41.07%, and low criteria of 28.57%. HOTS is difficult to identify in a short time because of its indirect nature but can be identified through a series of activities that are correlated with HOTS such as in the analysis of SMP IPA textbooks that show textual evidence, which can then be arranged in learning that can empower students' HOTS and assist in the development a science and technology literate society by providing a balanced learning model and curriculum, new ideas are conceptualized and along with changing student and community needs stimulate students to understand facts, classify, draw, relate them to facts and other concepts, make generalizations, and apply them by finding solutions to new problems of habit as higher-order thinking through the cognitive dimension when observing, analyzing, and creating continuously through science learning books.

References

- [1] D. W. Chan, "Creative Teaching in Hong Kong Schools : Constraints and Challenges," *Educ. Res. J.*, vol. 22, no. 1, pp. 1–12, 2007.
- [2] G. Schraw, K. J. Crippen, and K. Hartley, "Promoting self-regulation in science education: Metacognition as part of a broader perspective on learning," *Res. Sci. Educ.*, vol. 36, no. 1–2, pp. 111–139, 2006.
- [3] S. M. Brookhart, *How To Asses Higher Order Thinking Skills In Your Classroom*, vol. 88, no. 18, 2010.
- [4] D. Moseley *et al.*, *Frameworks for Thinking*. 2005.
- [5] T. Thompson, "Mathematics teachers' interpretation of higher-order thinking in Bloom's taxonomy," *Int. Electron. J. Math. Educ.*, vol. 3, no. 2, pp. 96–109, 2008.
- [6] D. Henriksen, C. Richardson, and R. Mehta, "Design thinking: A creative approach to educational problems of practice," *Think. Ski. Creat.*, vol. 26, no. October, pp. 140–153, 2017.
- [7] S. Kotzer and Y. Elran, "Learning and teaching with Moodle-based E-learning environments, combining learning skills and content in the fields of Math and Science & Technology," *1st Moodle Res. Conf.*, pp. 14–15, 2012.
- [8] A. R. Saavedra and V. D. Opfer, "Teaching and Learning 21st Century Skills: Lessons from the Learning Sciences," *Asia Soc.*, p. 35, 2012.
- [9] G. Thomas, A. & Thorne, "Higher Order Thinking | Reading Rockets," *Metarie, LA: Center for Development and Learning*. 2009.
- [10] Miterianifa, Y. Trisnayanti, A. Khoiri, and H. D. Ayu, "Meta-analysis: The effect of problem-based learning on students' critical thinking skills," *AIP Conf. Proc.*, vol. 2194, no. December, 2019.
- [11] G. M. Saido, S. Siraj, A. Bakar, B. Nordin, and O. Saadallah, "Higher Order Thinking Skills among Secondary School Students in Science Learning," *Malaysian Online J. Educ. Sci.*, vol. 3, no. 3, pp. 13–20, 2015.
- [12] D. Teacher, P. To, I. Students, C. Thinking, and C. In, "ME - 66," no. May, pp. 18–20, 2014.
- [13] Sajidan and Afandi, "Pemberdayaan Keterampilan Beripikir Tingkat Tinggi Ditinjau Dari Aspek Epigenetik Dan Implikasinya Dalam Pendidikan," *Semin. Nas. IPA IX I Univ. Negeri Semarang*, no. October, pp. 1–10, 2018.
- [14] L. W. Anderson *et al.*, *Taxonomy for_ Assessing a Revision OF Bloom'S TaxONOMy OF*

- Educational Objectives*. 2001.
- [15] Miterianifa, Ashadi, S. Sulisty, and Suciati, "Critical thinking skills profile of senior high school students in Learning Chemistry," *Humanit. Soc. Sci. Rev.*, vol. 8, no. 1, pp. 737–744, 2020.
 - [16] Y. Trisnayanti, Ashadi, W. Sunarno, and M. Masykuri, "Creative thinking profile of junior high school students on learning science Creative thinking profile of junior high school students on learning science," 2020.
 - [17] Y. Behnke, "The Palgrave Handbook of Textbook Studies," *Palgrave Handb. Textb. Stud.*, pp. 383–398, 2018.
 - [18] W. Wen-Cheng, L. Chien-Hung, and L. Chung-Chieh, "Thinking of the Textbook in the ESL/EFL Classroom," *English Lang. Teach.*, vol. 4, no. 2, p. 91, 2011.
 - [19] M. Ahlam and H. Nigel, "English Course," *English*, p. 2011, 2011.
 - [20] M. Dolmacı and A. Ertat, "Developing a Textbook-based Academic Turkish Wordlist 1," *Procedia - Soc. Behav. Sci.*, vol. 232, no. April, pp. 821–827, 2016.
 - [21] S. Susilowati, S. Sajidan, and M. Ramli, "Keefektifan perangkat pembelajaran berbasis inquiry lesson untuk meningkatkan keterampilan berpikir kritis siswa," *J. Penelit. dan Eval. Pendidik.*, vol. 22, no. 1, p. 49, 2018.
 - [22] S. Lastuti, "Pengembangan Bahan Ajar berbasis HOTS untuk Meningkatkan Kemampuan Pemecahan Masalah Matematis Mahasiswa," *Kreano J. Mat. Kreat.*, vol. 9, no. 2, pp. 191–197, 2018.
 - [23] M. Barak and Y. J. Dori, "Enhancing higher order thinking skills among inservice science teachers via embedded assessment," *J. Sci. Teacher Educ.*, vol. 20, no. 5, pp. 459–474, 2009.
 - [24] A. Khoiri, W. Sunarno, Sajidan, and Sukarmin, "Inquiry training model to improve creativity student in environmental physics courses," *AIP Conf. Proc.*, vol. 2194, no. December, 2019.
 - [25] Sugiyono, *Metodologi Penelitian Kuantitatif, Kualitatif dan R&D*. Bandung: Alfabeta, 2011.
 - [26] John W Creswell, *Research Design Pendekatan Kualitatif, Kuantitatif, dan Mixed*, Tiga. Pustaka Pelajar, 2013.
 - [27] W. Wahono, R. Fida, and H. N. Siti, *Ilmu Pengetahuan Alam/Kementerian Pendidikan dan Kebudayaan Edisi Revisi*, 3rd ed., vol. 42, no. 4. 2016.
 - [28] Y. H. Adisendjaja, "Analisis Buku Ajar Biologi SMA Kelas X di Kota Bandung Berdasarkan Literasi Sains," *J. BIO-UPI*, pp. 1–13, 2010.
 - [29] B. Hayat and S. Yusuf, "Benchmark Internasional Mutu Pendidikan." p. 446, 2011.
 - [30] U. Udeani, "Quantitative Analysis of Secondary School Biology Textbooks for Scientific Literacy Themes," *Res. J. Organ. Psychol. Educ. Stud.*, vol. 2, no. 1, pp. 39–43, 2013.
 - [31] N. Cintang, "Kajian Pengembangan Bahan Ajar Dalam Meningkatkan Kemampuan Berpikir Tingkat Tinggi (Higher Order Thingking Skills) Pada Kurikulum 2013," no. 1, pp. 339–349, 2013.
 - [32] I. Z. Ichsan, D. V. Sigit, and M. Miarsyah, "Supplementary Book of Green Consumerism: An Innovation of Environmental Learning based on HOTS," *Tadris J. Kegur. dan Ilmu Tarb.*, vol. 4, no. 2, pp. 135–144, 2019.
 - [33] A. K. van den Ham and A. Heinze, "Does the textbook matter? Longitudinal effects of textbook choice on primary school students' achievement in mathematics," *Stud. Educ. Eval.*, vol. 59, no. July, pp. 133–140, 2018.
 - [34] H. Retnawati, H. Djidu, Kartianom, E. Apino, and R. D. Anazifa, "Teachers' knowledge about higher-order thinking skills and its learning strategy," *Probl. Educ. 21st Century*, vol. 76, no. 2, pp. 215–230, 2018.
 - [35] B. Piper, S. Simmons Zuilkowski, M. Dubeck, E. Jepkemei, and S. J. King, "Identifying the essential ingredients to literacy and numeracy improvement: Teacher professional development and coaching, student textbooks, and structured teachers' guides," *World Dev.*, vol. 106, pp. 324–336, 2018.
 - [36] S. Prasetya, "The effect of textbooks on learning outcome viewed from different learning motivation," vol. 173, no. Icei 2017, pp. 316–318, 2018.

- [37] Y. M. Heong, W. B. Othman, J. B. M. Yunus, T. T. Kiong, R. Bin Hassan, and M. M. B. Mohamad, "The Level of Marzano Higher Order Thinking Skills among Technical Education Students," *Int. J. Soc. Sci. Humanit.*, vol. 1, no. 2, pp. 121–125, 2011.
- [38] M. R. Simsek, "Adapting a Turkish Middle School Textbook to Develop Cultural Awareness," *Procedia - Soc. Behav. Sci.*, vol. 152, pp. 199–204, 2014.
- [39] S. A. Karim, "Developing an Indonesian textbook for non-native learners of Indonesian at elementary," *Indones. J. English Lang. Teach.*, vol. 10, no. 2, pp. 52–68, 2015.
- [40] V. Seftari, B. Milama, and N. Saridewi, "The Development of Chemistry Textbook Based on Scientific Literacy the Concept of Colloid System," vol. 115, no. 95, pp. 208–214, 2018.
- [41] J. Mukundan, V. Nimehchisalem, and R. Hajimohammadi, "Developing an English Language Textbook Evaluation Checklist: A Focus Group Study," *Int. J. Humanit. Soc. Sci.*, vol. 1, no. 12, pp. 100–106, 2011.