

## Development of Socio-scientific Issues-Based Teaching Materials on Ecosystem Materials in Elementary School

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### Abstract

Using social scientific issues that occur in the environment around students as material content for learning makes the learning process more meaningful. These issues can be involved in learning through the Socio-scientific Issues framework. The existence of issues in around students that can be raised in learning, the author is interested in developing SSI-based teaching material integrated with HOTS. The research was conducted in three elementary schools, namely UPT SD Negeri Ngadirenggo 02, UPT SD Negeri Ngadirenggo 04, and UPT SD Negeri Ngadirenggo 05 which have similar backgrounds and environmental conditions. This research is R&D using the ADDIE model, but it is still limited to the development stage. This research, aims to produce a printed teaching material that is practical and effective to use. After the development process and validated by expert, this teaching material received the "very valid" category. Meanwhile, the results of small group trials, teaching materials are considered practical to use. Based on the validity and practicality test, this teaching material is declared eligible for research at the implementation stage.

**Keywords:** Socio-scientific Issues, learning material, development



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## Introduction

Environmental issues are interesting topics for learning materials in the classroom. However, the selection of environmental issues must be appropriate because each environmental problem has different characteristics depending on the situation in the area (Genisa et al., 2020). Environmental issues or problems can be adapted to a socio-scientific framework.

The development of teaching materials based on socio-scientific issues has been successful in helping students. Unfortunately, the use of SSI in Indonesia is still limited (Genisa et al., 2020). However, subsequent studies found that research on SSI in Indonesia has increased significantly. Indonesia is the tenth country to contribute to SSI research, with the United States ranking first (Yokhebed et al., 2023).

Events that occur in the surrounding environment can provide context for learning and make the learning process more meaningful. At the beginning of the learning process, explanations of environmental problems are expected to stimulate students' ability to think from various points of view and explore their existing knowledge (Mashfufah et al., 2020). Perwitasari et al. (2018) explain that teaching materials developed according to the circumstances of the surrounding environment can provide students with a more meaningful learning experience. Additionally, teaching materials developed using the Socioscientific Issues framework, adapted to local realities, can improve students' environmental awareness and attitude (Ma'rufah et al., 2021).

Teaching materials developed based on the SSI framework have several advantages. They can improve science literacy (Dalaila et al., 2022; Kartika et al., 2019; Rohmah et al., 2021), cognitive abilities, and

environmental awareness (Ma'rufah et al., 2021). They can also improve analytical skills (Adumiranti & Widyaningrum, 2022) and increase learning independence (Laksono et al., 2023).

In the school environment, social issues can be studied scientifically. Additionally, students' teaching materials are not considered to integrate high-level thinking skills. Therefore, the author is interested in developing teaching materials based on HOTS-integrated Socioscientific Issues with Ecosystem materials for fifth grade. The issues to be addressed are river pollution from livestock waste and forest fires around the school. However, the studies in this article are limited to the development stage. It is hoped that, with the development of this teaching material, students' high-level thinking skills will improve.

## Method

This study employs the research and development (R&D) method with the ADDIE (Analyze, Design, Develop, Implement, and Evaluate) model, which was initiated by Branch (2009). In this study, however, the focus remains on the development stage. The products developed are teaching materials consisting of modules, materials, and worksheets.

The subjects of the study were fifth-grade elementary school students, amounts 38 students. Three elementary schools in the Wlingi district, regency of Blitar were used as research locations: UPT SD Negeri Ngadirenggo 02 with 15 students, UPT SD Negeri Ngadirenggo 04 with 15 students, and UPT SD Negeri Ngadirenggo 05 with eight students. The developed teaching materials contain material from the Ecosystem chapter with three subchapters: (1) "What is an Ecosystem?"; (2) "How are the Interactions in the Ecosystem?"; and (3) "What is a Harmonious Ecosystem?". The stages of research conducted in accordance with the ADDIE model are as follows:

### 1. Analyze

The preliminary study was carried out as an initial analysis of the teaching materials owned by students, namely (1) document analysis of student worksheets, and (2) learning observations. Document analysis of Student's Worksheet (LKS) was conducted to determine the advantages and disadvantages of teaching materials and their impact on learning. The results will be used as a reference for the development of teaching materials based on *Socioscientific Issues*. Learning observation was carried out to find out the interaction between teachers and students as well as the learning environment, as well as how learning can affect student learning outcomes. This allows the teaching materials to be adjusted to the appropriate learning model.

### 2. Design

This stage includes creating a lesson *plan*, teaching materials, and a worksheet. The design of the teaching material is still adjusted according to the Learning Outcomes of the Kurikulum Merdeka of science subjects, which reads "Students understand the relationship between biotic and abiotic components and their influence on the ecosystem." This Learning Outcome is contained in the Decree of the Head of Education Standards, Curriculum and Assesment Agency Number 32/H/KR/2024. Learning Outcomes were then broked down into nine learning objectives and divided into three meetings. Each meeting contains three learning objectives.

Teaching materials are developed by integrating HOTS in them. Each learning objective contains one activity that supports students to develop higher order thinking skills. The learning is designed by following the syntax of the Problem Based Learning (PBL) model. The combination of SSI with PBL can improve critical thinking skills in students (Utami et al., 2024). For example, in the first meeting there are three learning objectives that read: (1) Through reading news about pollution in the river, learners are able to analyze the definition of ecosystem [C4]; (2) Through observing pictures, learners are able to specify the components that make up the ecosystem in detail [C4]; and (3) Through observing pictures, learners are able to project the role of ecosystem components appropriately [C5].

The implementation of the learning plan contained in the teaching module is shown in the figure below.

Kegiatan Inti	Sintaks	Kegiatan Pembelajaran
Orientasi pada Masalah		1. Guru menyajikan berita tentang pencemaran yang terjadi pada aliran sungai Genjong akibat limbah kotoran sapi 2. Guru mengajak peserta didik untuk kondisi sungai pada gambar.
Mengorganisasikan Peserta Didik		3. Guru mengajak siswa untuk menganalisis kondisi hewan-hewan yang berada di sungai atas yang masih bersih dan sungai bawah yang telah tercemar. 4. Guru menyampaikan cerita dari warga sekitar aliran sungai bawah, bahwa mereka sudah tidak lagi bisa menemukan ikan dan udang di sungai, serta air sungai yang kotor tidak dapat lagi digunakan untuk MCK. 5. Peserta didik diarahkan untuk berdiskusi dengan teman satu bangku untuk menganalisis permasalahan tersebut
Membimbing Penyelidikan		6. Peserta didik mulai mengerjakan LKPD 7. Peserta didik membandingkan kehidupan air dan kebermanfaatan sungai pada sungai atas dan kehidupan air serta kebermanfaatan sungai pada sungai bawah 8. Peserta didik menggeneralisasikan interaksi dan kebermanfaatan sungai bagi manusia dan makhluk hidup lain

Figure 1. teaching module (as a lesson plan)

1 Perhatikan kutipan berita di bawah ini!

**Memontum Blitar** - Sumber mata air di Desa Tegalasri, Kecamatan Wlingi, Kabupaten Blitar, diduga tercemar limbah dari peternakan sapi milik PT Greenfields, limbah yang diduga dibuang ke lokasi Perkebunan Sengon di Desa Ngadirengo, Kecamatan Wlingi, mencemari sehingga mengakibatkan puluhan kepala Keluarga (KK) di Desa Modong dan Bonsinyo, Desa Tegalasri, menjadi kesulitan air bersih untuk konsumsi sehari-hari. Kinan, seorang penggiat lingkungan hidup yang juga warga desa setempat mengatakan bahwa peristiwa ini sudah terjadi sekitar seminggu terakhir. Sumber air warga kondisinya keruh berwarna kecoklatan dan berbau kotoran sapi. Hal ini menunjukkan adanya resapan limbah yang mencemari sumber mata air bersih warga. Kinan mengungkapkan bahwa kondisi seperti ini tidak terjadi terus-menerus. Peristiwa seperti ini terjadi ketika Greenfields mengalirkan limbahnya ke Perkebunan Sengon dan saat terjadi hujan. Ia menambahkan, meskipun air terlihat bersih, tidak berwarna dan tidak berbau, siapa yang bisa menjamin bahwa air tidak mengandung bakteri yang berbahaya bagi masyarakat sekitar?

Berdasarkan kutipan berita di atas bagaimanakah akibatnya terhadap hubungan antara makhluk hidup dengan sumber air itu?

Jawab:

Figure 2. Pre-test question

The picture above is a pre-test question. The problem is presented in a news article, then students are asked to analyze the consequences of the problems that arise. In this one question, learners are led to have the skills to analyze a problem, where analyzing skills are at cognitive level C4 in Bloom's taxonomy, which means they are at a higher level of thinking. In PBL syntax, this problem represents the syntax of orientation to the problem, and learners are invited to analyze it. Meanwhile, the news articles presented discuss social scientific issues (SSI) that occur in the students' environment.

Meanwhile, its implementation on the worksheet is shown in the picture below:

"Meskipun terlihat bersih, tidak berwarna dan berbau, siapa yang bisa menjamin tidak mengandung bakteri berbahaya bagi kesehatan warga yang mengonsumsinya?" Ujar Kinan.

Terkait kejadian ini, Kinan mendesak agar Pemerintah Kabupaten Blitar bertindak sesuai dengan hasil keputusan pengadilan dan sanksi dari Kementerian Lingkungan Hidup dan Kehutanan (KLHK).

Kepala Dinas Lingkungan Hidup (DLH) Kabupaten Blitar membenarkan adanya dugaan pencemaran sumber air di Perkebunan Sengon Desa Ngadirengo. Ia mengatakan bahwa cara pengaliran limbah dari Greenfields yang dialirkan ke Perkebunan Sengon semacam ini sudah tidak diperbolehkan.

Diadaptasi dari : <https://shorturl.at/1qz929>

**AYO BERDISKUSI**

Kalian telah mengetahui permasalahan yang dihadapi masyarakat di sekitar aliran Sungai Genjong, tepatnya di Dusun Modong dan Bonsinyo. Diskusikan dengan teman sebangku tentang permasalahan yang dihadapi oleh masyarakat, dan bagaimana mengatasinya!

Hasil diskusi kami, permasalahan yang dihadapi oleh masyarakat desa genjong adalah:

Solusi untuk mengatasinya adalah

Figure 3. Worksheet activity

1 Perhatikan kutipan berita di bawah ini!

**Memontum Blitar** - Sumber mata air di Desa Tegalasri, Kecamatan Wlingi, Kabupaten Blitar, diduga tercemar limbah dari peternakan sapi milik PT Greenfields. Limbah yang diduga dibuang ke lokasi perkebunan Sengon di Desa Ngadirengo, Kecamatan Wlingi, mencemari sehingga mengakibatkan puluhan Kepala Kelyarga (KK) di Desa Modong dan Bonsinyo, Desa Tegalasri, menjadi kesulitan air bersih untuk konsumsi sehari-hari. Kinan, seorang penggiat lingkungan hidup yang juga warga desa setempat mengatakan bahwa peristiwa ini sudah terjadi sekitar seminggu terakhir. Sumber air warga kondisinya keruh berwarna kecoklatan dan berbau kotoran sapi. Hal ini menunjukkan adanya resapan limbah yang mencemari sumber mata air bersih warga. Kinan mengungkapkan bahwa kondisi seperti ini tidak terjadi terus-menerus. Peristiwa seperti ini terjadi ketika Greenfields mengalirkan limbahnya ke Perkebunan Sengon dan saat terjadi hujan. Ia menambahkan, meskipun air terlihat bersih, tidak berwarna dan tidak berbau, siapa yang bisa menjamin bahwa air tidak mengandung bakteri yang berbahaya bagi masyarakat sekitar?

Berdasarkan kutipan berita di atas, bagaimanakah hubungan antara pencemaran sungai dengan ekosistem yang ideal?

Jawab:

Figure 4. Post-test question

As an orientation to the problem, students are presented with news about environmental pollution where news articles for pretest questions and worksheet activities are made the same. In the worksheet, learners are invited to discuss with their peers to analyze the problem and find a solution. Discussion and argumentation activities are needed in the SSI framework and represent the characteristics of the PBL model. Then the learning activities are continued by paying attention to activities that support HOTS and still refer to the PBL syntax which consists of 6 steps; orientation to the problem, organizing students, guiding investigations, developing and presenting results, and analyzing and evaluating the learning process which is realized in the form of post-tests. The post-test questions are shown in the figure below.

Teaching materials are designed as printed products with A4-sized paper. This allows students to use this teaching material without depending on the internet or electricity. This is because internet and electricity

access in the student environment is dependent on the weather and is unpredictable. Fonts, font sizes, and color combinations were carefully selected to be easy on students' eyes. Worksheets and teaching materials are created with the help of the Canva.com website.

### 3. Develop

Several actions are taken during the development phase, including development, editing, validation, and testing. During the development stage, teaching modules (lesson plans) are prepared, materials for the teaching material book are developed, and worksheets for student activities are developed.

During the editing stage, the reviewer provided several revisions to improve the quality of the teaching materials. These revisions included improvements to the preparation of learning objectives, alignment of work steps with learning objectives, alignment of the material context with the SSI framework, alignment of work steps with the SSI framework, correction of writing errors, and display of teaching materials. Based on the reviewers' feedback, improvements were made to the teaching materials so that the process could continue to the next stage.

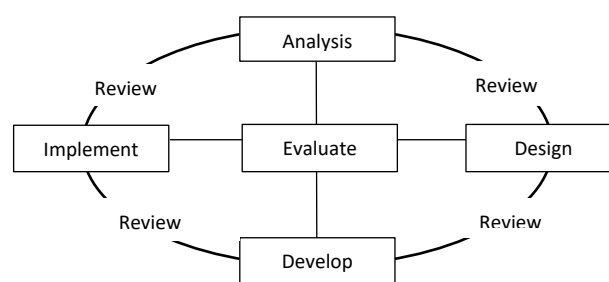
At the validation stage, expert lecturer carry out content validation, which includes assessing the feasibility of the teaching materials and the accuracy of the concepts they contain. The validation instrument is a questionnaire with a rating scale.

Quantitative methods were used to analyze the data. Data obtained from the validation instrument was then used to calculate the percentage of validity of the teaching materials. Once the percentage is determined, the validity criteria for the teaching materials will be established. This determines whether the teaching materials are suitable for use.

After the materials were deemed feasible, a trial was conducted with eight student participants in small groups. The trial took place in Class V at UPT SD Negeri Ngadirenggo 05. Some corrections were obtained from the test in this class. These results were used as a reference for making final revisions to the teaching materials before they were used for data collection in larger classes, specifically classes V at UPT SD Negeri Ngadirenggo 02 and UPT SD Negeri Ngadirenggo 04.

## Results and Discussion

This research aims to develop teaching materials based on *Socio-scientific Issues*, but still focuses on the development stage. The ADDIE method was chosen because it has stages that are in accordance with the work steps of developing printed teaching materials. The work steps owned by ADDIE are illustrated in figure. 5 below.



**Figure 5.** ADDIE Research and Development Stages (Branch, 2009)

### 1. Analyze

At the analysis stage, a preliminary study was conducted to determine the students' needs for a teaching material. Students' needs for teaching materials are shown in table 1 below.

**Table 1. Table of Student Needs**

No.	Students' Needs for Teaching Materials	Details
1.	Question Level	HOTS questions with difficulty: easy, medium, and hard Student activities that support high-level thinking skills

No.	Students' Needs for Teaching Materials	Details
2.	Suitability of the Material to the Student's Environment	Using the surrounding environment as an example in the material Raising social and scientific issues that occur in the surrounding environment
3.	Availability of images or illustrations	Display interesting and realistic illustrations or images (photos) to make it easier for students to learn and identify the material Use color images to make them more attractive

### Question Level

Students need stimulation to train a higher way of thinking, one of which is to solve formative and summative evaluation questions. Meanwhile, the questions available so far are still dominated by questions with low cognitive levels in the range of C1, C2, and C3 levels.

To support a high-level way of thinking, student activities must also be considered. The process of high-level thinking invites students to develop ideas using certain ways to find new meanings in learning and its implications (Mardhatillah et al., 2023). Therefore, worksheet contains activities that support high-level thinking activities that have *Range* levels C4, C5, and C6 correspond to Bloom's Taxonomy. Worksheet is structured according to PBL syntax (*Problem Based Learning*) because PBL can be used to develop higher-level thinking skills in learning (Kusumadani et al., n.d.).

### Suitability of the Material to the Student's Environment

The subject matter taken from the environment around the students makes the lesson more meaningful. Contextual textbooks can help students achieve learning goals (Perwitasari et al., 2018). In the student environment, there are problems that can be studied scientifically and socially, namely the issue of river pollution and forest fires. Both of these issues can be raised as material in the subject of Ecosystems according to the framework Socio-scientific Issues (SSI). This is strengthened by research conducted by (Eastwood et al., 2012), which resulted in the conclusion that an SSI-based learning environment can provide an effective context to enhance students' conception of the Essence of Natural Sciences

### Availability of Images or Illustrations

Teaching materials are presented by presenting pictures of organisms in the surrounding environment, with the aim of making students feel close to the material. Pictures also serve to help students know things that students rarely encounter. In his research, (Fajri et al., 2022) found that the use of realistic images can arouse curiosity, focus, and encourage learning through activities and consequences. The hope is that the use of images can attract students' attention and motivation when learning using these teaching materials.

The conclusions obtained from the preliminary study show that educators need teaching materials based on *Socio-scientific Issues* (SSI) integrated HOTS in learning. In the previous teaching materials, the material developed was not too close to the student's environment, so it felt a little abstract. In fact, teaching materials that are contextual or close to the student's environment are believed to be able to bring the real world into the classroom and motivate students to connect the knowledge they have with its application in daily life (Perwitasari et al., 2018).

### 2. Design

The first step in designing teaching materials is to break down the Learning Outcomes into 9 learning objectives that will be distributed into 3 subchapters, where each chapter is allocated for one meeting. After that, a learning framework is prepared in accordance with the PBL syntax to be developed into a teaching module.

Teaching modules can be developed according to the characteristics and needs of students, such as regional characteristics or the background of the students (Murti et al., n.d., 2023). After the learning outcomes are divided into learning objectives, the next step is to determine the form of formative tests that will be given to students in each learning. At this stage, a grid of pretest and postes questions was developed. Pretest and postes questions refer to the cognitive level between C4 to C6 with a context relevant to the social



issues studied (Kusumadani et al., n.d., 2023). The final step is to develop a lesson plan by following the syntax of the PBL model with the context of SSI. The learning plan is systematically compiled into a teaching module. The design stage is continued by compiling worksheet and Teaching Materials.

Worksheet and teaching materials are designed by presenting a variety of attractive images and colors. In his research on the influence of *Background* on teaching materials for Chinese characters, (Cai & Wang, 2024) Recommend to teachers to choose colors that are appropriate to the context of the material, because color selection can affect students' emotions and feelings. So in this teaching material, green color was chosen which represents the color of nature. In order to facilitate the design of worksheet and teaching materials, the author chose Canva.com..

At this stage, several revisions are needed to the design of the worksheet and the teaching material book. This revision is related to student activities, presentation of teaching materials, cover display, and coloring.

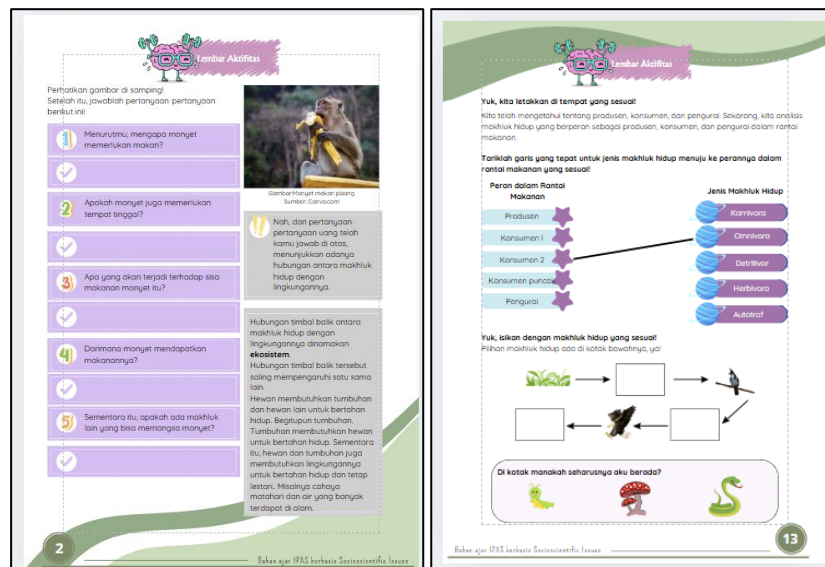


Figure 6. Display of students worksheet and student activities in the initial design of students worksheet

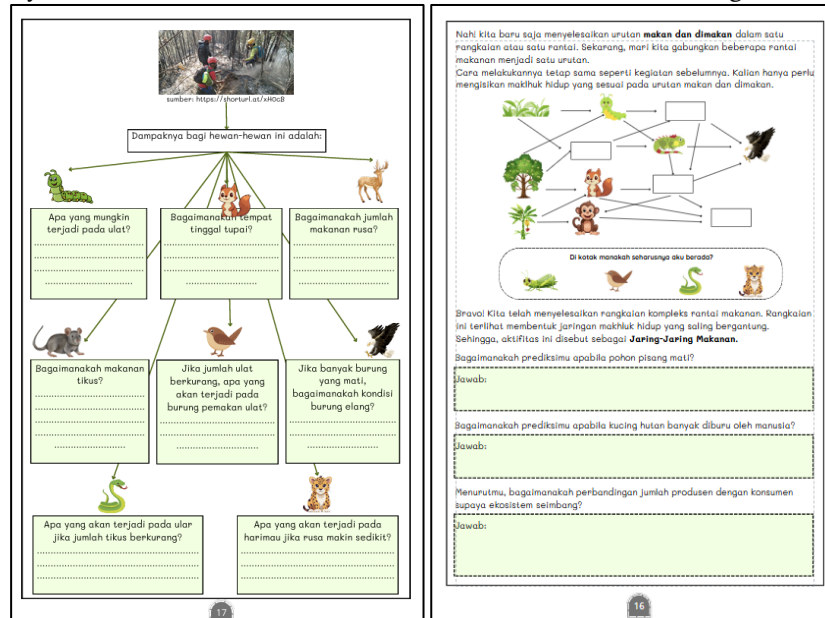


Figure 7. Results of revision of the students worksheet display and student activities in the students worksheet.

### 3. Develop

The teaching materials developed in this study include teaching modules, teaching materials, and worksheet. Teaching materials are developed with reference to the syntax of *Problem Based Learning* (PBL)

model. PBL can be integrated with the SSI framework by raising contemporary issues, where in learning it will invite students to use conversations or discussions about these issues to find answers (Kusumadani et al., n.d.). SSI-based learning using the PBL model can significantly improve critical thinking skills (Aisy et al., 2024; Fita et al., 2021; Utami et al., 2024).

Before the teaching materials are used by students, the teaching materials are first validated by validators, namely expert lecturers in the field of science education. The validity of teaching materials is seen from the feasibility of content, language feasibility, and graphic feasibility (Wahyuni, 2022:19). Validity instrument using questionnaires with *Rating Scale* 1 – 2 – 3 – 4, with the criteria Highly Invalid – Invalid – Valid – Highly Valid. The calculation of validity results refers to (Sugiyono, 2023:152) shown in the formula below:

$$\text{Value} = \text{Criterion score} \times \text{number of instrument items}$$

The validation criteria are shown in the table 2 below.

**Table 2. Validation Categories**

Value Range	Category
188.6 - 232	Highly Valid (SV)
146 – 188.5	Valid (V)
101.6 - 145	Invalid (TV)
58 – 101.5	Very Invalid (STV)

**Adapted from: Widoyoko, 2022:111**

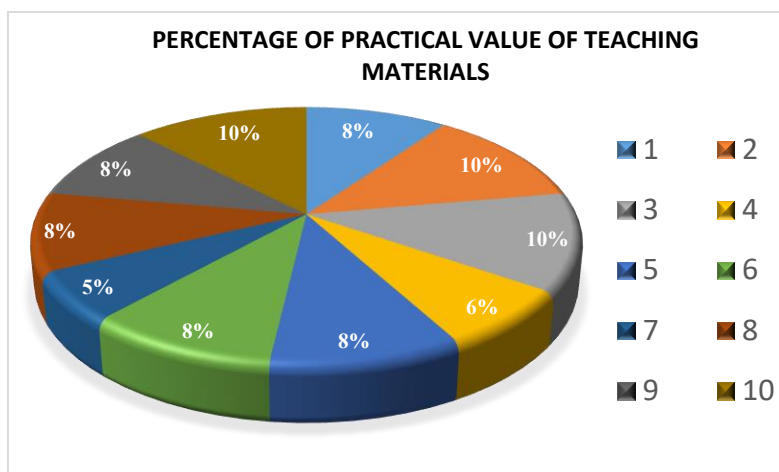
The results of the content eligibility validation are shown in the table below.

**Table 3. Content Validation**

Content Validation Recap	Value	Percentage per point	Overall percentage
a Grammar	36	100%	16%
b Content Eligibility	36	100%	16%
c Presentation eligibility	36	100%	16%
Conformity of Teaching Materials with HOTS			
d indicators	72	100%	31%
e The Truth of the Teaching Material Concept	52	100%	22%
Total	232		100%

Based on the table 3 it is known that the teaching material received a score of 232 with a very valid category. With the results of the validation, the teaching materials can be piloted into small groups.

The trial was carried out in a small group, namely students of UPT SD Negeri Ngadirenggo 05 with a total of 8 students. Based on the trials that have been carried out, it is known that this teaching material **is practical** to use, namely with a practicality value of **254** with a percentage of 79%. Details of the practicality of the teaching materials are illustrated in the diagram below.



**Figure 4 /** Diagram of Practicality of Teaching Materials

#### Diagram Description

- 1 Language is easy to understand
- 2 No typos
- 3 Clear image
- 4 Easy-to-read font style
- 5 Font size to suit
- 6 Fun colors
- 7 Materials are available around
- 8 Easy to read anywhere
- 9 Be able to understand the material well
- 10 Full teaching materials section

The aspect of no writing errors; clear images; and complete teaching material parts scored 10% out of 100% indicate that the physical feasibility aspects of teaching materials are very feasible to present, meaning that these teaching materials do not require improvement in language processing, images, and parts of teaching materials, because students have rated them very perfect. Teaching materials are presented with various images taken from the environment around the school, so they are easily recognized by students. Images role as a communication tool that can be understood visually (Magdalena et al., n.d.).

The easy-to-understand language aspect scored 8% out of 100%, meaning that language use is acceptable for most students. Minor improvements are needed in the use of language before the teaching materials are finally presented to large groups. Teaching materials still use standard language, but in some parts they must adjust to the age and mother tongue used by students, so that the message contained can be conveyed.

The font size aspect scored 8%, so minor revisions are needed in the writing. The font size used is 12 pt for the body of the text, 9 pt for image captions, and 4 to 18 pt for writing subheadings or titles. The revision made is to improve the spacing and maintain the font size.

The color aspect score is 8%, so the revisions made were to add color to the student answer box and change the color to be softer. The selection of soft colors aims to make student answers that may be written in pencil still legible, and soft colors have a calming impression. Choosing the right color for the background can affect learners' feelings (Cai & Wang, 2024).

The aspect of being easy to read anywhere and being able to understand well scored 8%. The easy-to-read aspect is related to the dimensions of teaching materials that are bound using A4 paper. Printed teaching materials with the right dimensions can indeed be used anywhere, in the sense that they do not require an electricity source or internet network. Printed teaching materials are presented in paper form for information distribution (Magdalena et al., n.d). So this teaching material greatly supports the mobility of students in mountainous areas where access to electricity and the internet is not like in urban areas.

The letterstyle aspect scored 6%. The improvements made are the selection of other font styles, with specifications; The shape of the letter is not rigid but still meets the standard of letter shapes, the shape of the letter is contrasting between one letter and another, and the dimensions of the letter are balanced between width and height.



Based on the test results, the authors made improvements to get good teaching materials and can be done by students optimally. The importance of the level of practicality of teaching materials must be understood by teachers in developing teaching materials. There are many considerations that can be understood to develop teaching materials, including how to organize abstract material concepts into a form that is easy to understand, as well as adding photos, images, or graphics to facilitate student understanding (Magdalena et al., n.d). The improved teaching materials were then distributed to a large group for research data collection.

The researcher obtained field records while conducting the trial. There is one child who is not fluent in reading, and two children who need assistance when working. Assistance is needed so that students have the motivation to read and can maintain their concentration in class. The ability to read and maintain concentration affects learning outcomes. What is done is to accompany students to work on the worksheet and when filling out the questionnaire of practicality instruments. At certain times, the researcher also helps to read the readings or provide explanations of sentences in the teaching materials and practical questionnaires.

Seeing the results of the evaluation of the feasibility of teaching materials and the practicality of teaching materials, these teaching materials are eligible to be used at the next stage of research, namely the *Implementation stage*. After the teaching materials are implemented in large groups, an evaluation will be carried out on the effectiveness of the teaching materials in improving students' high-level thinking

## Conclusion

Teaching materials that developed is in the form of teaching modules, material books, and worksheets based on Socio-Scientific Issues with Ecosystem material for grade V elementary school level. This teaching material has received an assessment from expert lecturers with the predicate "very valid". This teaching material has also received an assessment from students about the value of practicality, with the predicate "practical" to use. Thus, this teaching material has met the requirements for use in research at the Implementation stage. As a development of this research, this teaching material can also be developed into digital forms, such as electronic worksheet and flipbooks or interactive videos for teaching materials. In its implementation, assistance from teachers is needed to serve class discussions; and encourage students to be more active in reading.

## Acknowledgment

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