



Analysis of Middle School Science Books About Classification of Materials and Its Changes to See Existing Character Education

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Abstract. Problems of life in society always come and go. The role of the teacher in preparing students plays an important role so that when students are in the community they can provide solutions to problems that are happening in the community. This study was conducted to determine whether there is character education in the content of the seventh grade junior high school science book. Then, knowing the long-term and short-term impact of the existing characters. This study uses a qualitative approach with the method of document analysis. Based on the results of the content analysis conducted by the researcher on the teacher's manual for science learning junior high school class VII semester I regarding the classification of material and its changes, it was found that many characters had been taught. Such as hardworking characters, socially caring characters, friendly communicative characters, creative characters, etc. So it can be concluded that character education is very important to be taught from an early age in order to form students who have noble character and are able to behave well in their environment.

Keywords: Book Analysis · Character Building · Natural science

1 Introduction

Education is a step for someone to get a better self quality. Education is very necessary to make it easier for someone to live life [1]–[3]. The reason education is an important factor in life is so that a person can develop his knowledge and skills and creativity [4]–[6]. In addition, with education, the world is able to develop more rapidly with well-designed and manufactured technology [7]–[9]. Various fields of education that must be studied by humans in order to become a unit to improve self-quality, one of which is by learning all the time.

Learning is a process that occurs in education that aims to increase insight. In the learning process, students will interact with friends, teachers, family or the community with the interaction between response and stimulus [10]–[12]. Students will learn something if there is a change in behavior that tends to be positive or negative depending on

the response of students. Science is the science that discusses the processes that occur in the universe and life. As happens in the universe where science explains how rain occurs and how snow is formed [13]–[15]. This shows that science is an important factor for students to understand the content of the material in the field of science. The material used in this study is CHAPTER three of the first semester material on the classification of material and its changes. In this book, the researcher looks at the values of existing character education.

Character education is a necessary thing in the world of education in Indonesia today. Character education is very important for the formation of student character so that the character of students can develop both in the school environment and outside the school environment [16]–[18]. Through character education, students can form good personalities to be able to choose actions, associations, and actions that are in accordance with applicable norms. So it can be said that the world of education is able to develop the character that every student must possess [19]–[21]. The purpose of character education is as a forum to explore the potential of students to develop the habits or behavior of each student and to create an environmental atmosphere that forms a nation that is strong, competitive, noble, tolerant, moral, and oriented to science and technology. [22]–[24]. From the statements described above, it is known that character education is a way to grow good character so that it becomes a good habit for students.

There are 18 character education that must be applied to the personality of students, namely religious, honest, disciplined, hard working, creative, independent, democratic, curiosity, national spirit, love for the homeland, respect for achievement, friendly/communicative, love peace, love to read., care for the environment, care for social, and responsibility [25]–[27]. Existing character education has different characteristics that form the basis of character education itself. All fields of character education must be opened as wide as possible for women and men without limits, the assessment of the teaching and learning process and the behavior/character of students must be considered by the teacher [28]–[30]. The cultivation of good character values can be started from the family environment, school environment and community environment. So that good character is formed for students at school, to their peers, teachers and parents at home and to the surrounding environment.

The importance of this research is because by analyzing the contents of the science manual, junior high school students in grade VII semester one can find out what character education is contained in it. Knowing this can be a reference for teachers to improve character education for students outside of the manual. So that the character education embedded in the book can be given to students and what is not in the book can be carried out learning activities so that students get the whole of the existing character education. Therefore, the urgency of the formation of human resources with character will be beneficial for himself and others and even for the outside community.

This research is in line with research conducted [31]–[33] on the analysis of learning media. Previous research did not conduct a content analysis of the manuals owned by seventh grade junior high school students. In the research that the researcher conducted, the researcher used content analysis from the student manual of class VII SMP on the material Classification of Materials and Its Changes. The content analysis was conducted

to find out whether there was character education in learning?; long-term and short-term impact of the characters in the book and those not in the book?.

2 Method

This research uses a qualitative approach with the document analysis method. Document analysis is a systematic procedure used to review or evaluate a printed or electronic document (Farisi, 2013; Nilamsari, 2014). This type of document analysis method is often used in combination with qualitative methods with triangular combinations. So the results obtained using this method will come from empirical observations and most of the research reports are carried out in descriptive form and get a variety of problems related to the field of education. So that analytical research using documents has authentic and relevant sources and is supported by complete data.

This study uses data collection techniques in the form of documentation analysis. Where the documents collected are selected according to the purpose and focus on the problem. Because the problem in this study was focused on evaluating junior high school science teacher books, the researchers used junior high school science teacher manuals as information data material. Document analysis is usually carried out to collect data sourced from archives and documents such as curriculum center archives (Fadli, 2021; Rijali, 2018).

Qualitative data analysis is the process of systematically searching and compiling data obtained from notes, interviews or other materials. In this study, the data analysis process began by reviewing the junior high school science teacher's book which had been written down in the notes. This process is used to reduce data, display data, verify and draw conclusions. The diagram of the data analysis technique used is as follows (Fig. 1).

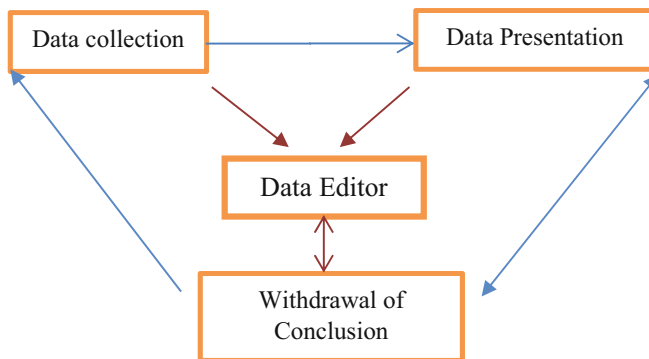


Fig. 1. Data Analysis Diagram

3 Result and Discussion

Result

Based on the observations that the researchers have made, the following is a table of the results of content analysis on the seventh grade science book for SMP material "Classification of Materials and Its Changes" (Table 1).

Through the results of content analysis in the material section of the book, it can be seen that most of the character education that must be included in the book as a learning medium has been contained in the seventh grade science book for SMP. However, several other equally important character educations are still not in the book that the researcher analyzes. Furthermore, the researcher will describe the results of the analysis in this study in the discussion or discussion section.

Discussion

The researcher conducted a content analysis in the open IPA SMP class VII with the aim of seeing whether or not there was character education in the book. The content analysis was carried out in chapter 3 of the seventh grade junior high school science book with the material in that chapter is the classification of the material and its changes. Researchers conducted an analysis of the material described in the junior high school science book. The material in the book that the researcher analyzed is divided into sub-chapters with the title of the first sub-chapter namely the characteristics of matter, elements, compounds, and mixtures. The title in the second sub-chapter is a mixture of properties of acid, base, and salt solutions. The third and fourth sub-chapters have the same discussion, namely the separation of mixtures. The title of the fifth sub-chapter is physical and chemical properties as well as physical and chemical changes.

In proper learning, there are 18 character education taught to students. The 18 characters are religious, honest, tolerance, disciplined, cooperative, creative, independent, democratic, curiosity, national spirit, love for the homeland, respect for achievement, friendly, love peace, love to read, care for the environment, care about social, and responsibility. Therefore, it is important that a book as a learning medium must have 18 character education. Therefore, the researcher conducted a content analysis on the seventh grade science book for junior high school with the material "Classification of Materials and Its Changes". Through the results of the analysis carried out by the researchers, in the book there have been several character educations that should exist. This proves that the book is indeed worthy to be given as a learning medium for educators and students.

In addition, this book also has several advantages including: 1) the appearance of the contents of the material that is interesting for students to learn; 2) have exercises and practices that can be done by students; 3) learning materials are explained in detail. However, the junior high school science book which the researcher analyzed still has several shortcomings including: 1) some character education is not contained in the book including religious character, discipline, love for the homeland, and character who cares for the environment; 2) the cover of the book is less attractive.

This research is in line with research conducted (Ainia, 2020; Miftah Nurul Annisa, 2020; Rohmah, Hidayat, & Nulhakim, 2021) on the analysis of learning media. Previous research did not conduct a content analysis of the manuals owned by seventh grade junior

Table 1. Content Analysis of Middle School Science Books for Class VII Material “Classification of Materials and Its Changes”

NO	Character	Theory				
		Meeting I: Characteristics of Matter, Elements, Compounds, and Mixtures	Meeting II: Mixture of Properties of Acid, Base and Salt Solutions	Meeting III: Mixed Separation	Meeting IV: Mixed Separation	Meeting V: Physical and Chemical Properties and Physical and Chemical Changes
1	Religious	-	-	-	-	-
2	Honest	Page 69	Page 72	Page 74	Page 75	Page 78 & 79
3	Tolerance	Page 69	Page 72	Page 74	Page 75	Page 78 & 79
4	Discipline	-	-	-	-	-
5	Cooperation	Page 69	Page 72	Page 74	Page 75	Page 78 & 79
6	Creative	Page 69	Page 72	Page 74	Page 75	Page 78 & 79
7	Independent	Page 69	Page 72	Page 74	Page 75	Page 78 & 79
8	Democratic	Page 69	Page 72	Page 74	Page 75	Page 78 & 79
9	Curiosity	Page 69	Page 72	Page 74	Page 75	Page 78 & 79
10	Spirit of nationality	Page 69	Page 72	Page 74	Page 75	Page 78 & 79
11	Love the Motherland	-	-	-	-	-
12	Appreciating Achievements	Page 69	Page 72	Page 74	Page 75	Page 78 & 79
13	friendly	Page 69	Page 72	Page 74	Page 75	Page 78 & 79
14	Love peace	Page 69	Page 72	Page 74	Page 75	Page 78 & 79

(continued)

Table 1. (continued)

NO	Character	Theory				
		Meeting I: Characteristics of Matter, Elements, Compounds, and Mixtures	Meeting II: Mixture of Properties of Acid, Base and Salt Solutions	Meeting III: Mixed Separation	Meeting IV: Mixed Separation	Meeting V: Physical and Chemical Properties and Physical and Chemical Changes
15	Like to read	Page 69	Page 72	Page 74	Page 75	Page 78 & 79
16	Environmental care	-	-	-	-	-
17	Social care	Page 69	Page 72	Page 74	Page 75	Page 78 & 79
18	Responsibility	Page 69	Page 72	Page 74	Page 75	Page 78 & 79

high school students. In the research that the researcher conducted, the researcher used content analysis from the manual owned by the seventh grade junior high school students.

The importance of this research is because by analyzing the contents of the science manual, junior high school students in grade VII semester one can find out what character education is contained in it. Knowing this can be a reference for teachers to improve character education for students outside of the manual. So that the character education embedded in the book can be given to students and what is not in the book can be carried out learning activities so that students get the whole of the existing character education. Therefore, the urgency of the formation of human resources with character will be beneficial for himself and others and even for the outside community.

4 Conclusion

Based on the results of the content analysis in the seventh grade science book for junior high school, the material "Classification of Materials and Its Changes" as a learning medium used by educators and students, it can be concluded that the book is quite good in highlighting the characters that must be learned by students. In the book there are several characters that are highlighted including honest character, tolerance character, cooperation character, creative character, independent character, democratic character, curiosity character, national spirit character, character appreciating achievement, friendly character, peace-loving character, fond character. Reading, the character of social care,

and the character of responsibility. However, the seventh grade junior high school science book material “Classification of Materials and Its Changes” still has shortcomings including the absence of several characters that should be in the junior high school science book as a learning medium for students. These characters are religious character, discipline character, patriotism character, and environmental care character.

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