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Analysis Curriculum 2013 Science Textbooks based on Concept Accuracy and Feasibility of Living Material Contents

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Abstrak

Tujuan dari penelitian ini adalah untuk mengetahui relevansi isi, ketepatan konsep materi. Dari hasil analisis relevansi isi materi terhadap silabus pembelajaran Kurikulum 2013 pada materi Makhluk Hidup ditemukan 10 indikator pembelajaran dengan 8 indikator pembelajaran tertampung dan 2 indikator pembelajaran tidak terakomodir atau 80% materi tergolong baik. Ketepatan konsep materi ditemukan 12 konsep materi dengan 66,7% materi memadai, 33,3% materi kurang atribut dan 0% materi tidak dituntut dalam indikator pembelajaran, hal ini menunjukkan konsep materi dalam buku ajar sama-sama relevan. Analisis wacana materi menghasilkan representasi pengajaran dengan kedalaman materi elaborasi level 4 sehingga cakupan materi tergolong baik untuk digunakan dalam proses pembelajaran kurikulum 2013.

Kata Kunci: *Relevansi Isi, Ketepatan Konsep, Analisis Wacana Buku Teks, Klasifikasi Makhluk Hidup*

Abstract

The purpose of this study was to determine the relevance of the content, the accuracy of the material concept. From the results of the analysis of the relevance of the content of the material to the 2013 curriculum learning syllabus on the Living Creatures material, it was found 10 learning indicators with 8 accommodated learning indicators and 2 unaccommodated learning indicators or 80% of the material was classified as good. The accuracy of the material concepts found 12 material concepts with 66.7% adequate material, 33.3% material lacking attributes and 0% material not being demanded in learning indicators, this shows the material concepts in the textbook are both relevant. The material discourse analysis produces teaching representations with a depth of level 4 elaboration material so that the material coverage is classified as good for use in the 2013.

Keywords: *Content relevance, Concept accuracy, Texbook Discourse Analysis, Clasification of Living Things*

INTRODUCTION

According to Tarigan and Tarigan (1984) textbooks are textbooks in certain fields, which are standard books compiled by experts. In that case, it is for instructional purposes that are equipped with suitabe teaching facilities and are easily understood by the users in schools and universities so that they can support a teaching program.According to BSNP (in Muslich, 2016) quality textbooks must meet four eligibility elements, namely content feasibility, presentation feasibility, linguistic feasibility, and graphic feasibility. But when there is news that contains the inappropriateness of student textbooks. The results of focused group discussions (DKT) with elementary, middle, and high school teachers in several regions in Indonesia found that textbook still have several weaknesses, including: first, the sentences in some textbooks are not suitable for students abilities. Second, there are book contents which is less precise in the use of the concept because it is not in accordance with scientific rules. Third, there is the same material at every level so that it is less effetive an efficient. Fourth, in addition to the quality must also be considered considering that the 2013 curriculum books will be used again for the next graders. Fifth, the limited number of textbooks (Center for Research and Culture Balitbang, Kemendikbud, 2017) Based on a survey conducted at SMP Negeri 2 Kedungreja with science teacher that the main source of learning that has implemented the 2013 curriculum is using textbooks as the main source of learning to achieve competence.

The data obtained show that textbooks are the main source that is most widely used, meaning that textbooks play an important role in the learning porcess and it is obtained data that the low learning outcomes of some students who do not reach the KKM (Minimum Completeness Criteria) are caused by several factors including : teachers, students, environment, textbooks, and so on. From these several factors, researchers are interested in analyzing the textbooks/teaching materials used in the school, especially the science textbooks published by the Ministry of Education and Culture which are used in learning media. With the title “Analysis of the Accuracy of the Concept and the Feasibility of the Content Material Based On Core Competencies and Basic Competencies in the 2013 Curiculum Science Texbook for Class VII Classification of Living Things” to describe the chapter using text structure analysis by organizing macro-micro which is the unit of analysis derved based on Frederiken’s (1987) criteria and Kintsch & van dijk (1987). These criteria explain the interrelationship of text units anda the appropriateness of knowledge structures at various levels. This study aims to describe the level of appropriateness ofthe content and accuracy of the material based on KI and KD in the 2013 curriculum science textbooks for Class VII, Classification of living things.

METHODS

The study, entitled Analysis of the Accuracy of the Concept and the Feasibility of the Content Material Based On Core Competencies and Basic Competencies in the 2013 Curiculum Science Texbook for Class VII Classification of Living Things used a qualitative descriptive approach with the aspects of the study studied, namely content relevance, concept accuracy level analysis and analysis results. According Lexy J Moleong (2017) stated that qualitative research is reasearh the produces descpritive data in the form of written or spoken words from people and observed behavior. So the data analyzed is not to accept or reject the hypothesis, but in the form of a description of the symtoms experienced. The instrumen used in the research was the 2013 curriculum IPA syllabus, 2013 curriculum science textbooks on class VII Classification of living things published by the center for Research and Development, Ministry of Education and Culture, and discourse analysis of science book subject matter accompanied by a text representation module in the form of an outline. The syllabus is used to measue the level of accuracy of the content of the science textbooks on the indicators, while the seventh grade science textbooks

and text discourse analysis are used to determine the level of accuracy of the concept of the book material through the dept level of macro propotions and micro propositions as well as the completeness of the presentation of motives in the form of inforing, eliciting, and directing.

Data Colection Instrumen

Discourse Analysis of Science Student Textbooks Curriculum 2013 on Class VII Living Creatures in the Following table:

Table 1. Instrumen of Discourse Analysis of Subjek Material

Pedagogical Content (Textboo)		Micro Proposition	Macro Proposition 3	Macro Proposition 2	Macro Proposition 1
Indicator	Concept Description				

(Source : Siregar et.all.2017)

Discourse analysis of science student textbooks 2013 curriculum material clasification things class VII based on the presentation of motifs in the following table:

Table. 2 Presentation of text discourse motifs

Chapter	Text Description (sub-chapter material)	Presentation of motifs		
		Informing	Eliciting	Directing

(Source : Siregar et.all.2017)

The results of this discourse analysis are made in a teaching representation model by showing two dimensions, namely the dimension of progression and the dimension of elaboration. The progression dimension is directed from top to bottom to show the level/development of material that will be presented in a complete and continuous manner. The elaboration dimension is directed from the left to the right to show the level of depth of the material.Analysis of Concept Accuracy in Science Student Textbooks Curriculum 2013 on Class VII Material for Classiffication of Living Things is Shown in the Follong table:

Table 3. Concept Acuracy Instrument

No	Concept label	Acuracy Concept		
		Adequate	Lack of Attributes	Not demand in the learning indicator
1.				
2.				
Etc.				
	Sum			

(Source : Siregar et.all.2017)

The level of accuraccy of the concept is then added up to make it easier to describe. The percentage of accuracy of the concept is formulated as follows:

$$\text{Adequate} = \frac{\text{sufficent number of concept}}{\text{sum of all concept}} \text{ x } 100\%$$

$$\text{Lack of Attributes} = \frac{\text{number of concept lacking attributes}}{\text{sum of all concept}} \text{ x } 100\%$$

$$\text{Not demand} = \frac{\text{number of concept not required}}{\text{sum of all concept}} \text{ x } 100\%$$

Analysis of the Level of Relavance of the Contents of Science Textbooks Curriculum 2013 Material Classification of Living Things Against Science Syllabus Based on Learning Proces Indicators is Shown in the Following table:

Table 4. Content Relavance Level Instrumen

No	Indicator of standard learning process	Level of relavance	
		Acommodated	Not accommodated
1.			
2.			
Etc.			
	Sum		

(Source : Siregar et.all.2017)

The level of relevance of the contents is then added up to make it easier to describe. The percentage of accuracy of the concept is formulated as follows:

$$\text{Accomodated} = \frac{\text{number of indicator accomodated}}{\text{sum of all indicators}} \text{ x } 100\%$$

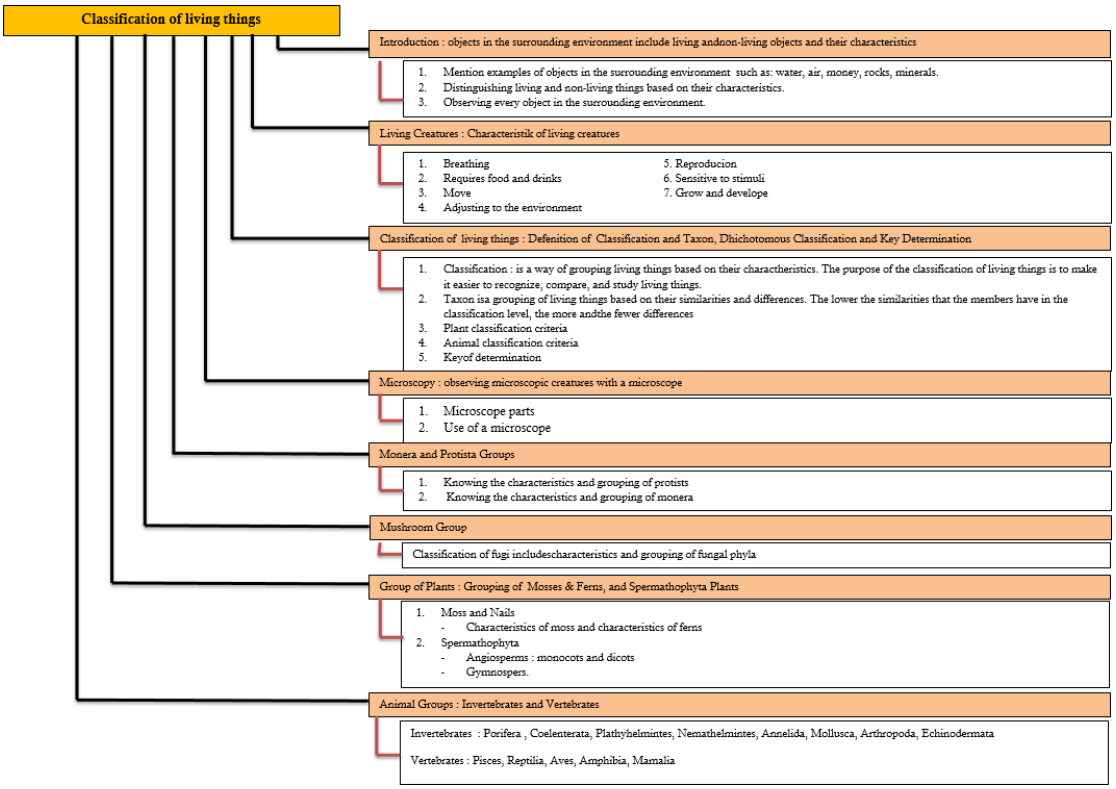
$$\text{Not Accomodated} = \frac{\text{number of indicators not accomodated}}{\text{sum of all indicators}} \text{ x } 100\%$$

RESULTS AND DISCUSSION

Structure of Discourse Analysis of Science Student textbooks Curriculum 2013 on Class VII Classification of Living Things

The result of the text book discourse structure analysis are made in the outline of discourse analysis by identifying the basic text structure inti micro-macro proportion. The formation of this proportion is carried out with macro rules consisting of delation, generalization, an construction processes so as to form an outline table for discourse analysis. The discourse analysis outline is then made a teaching representation model, the taching representation model is used to see the level of pedagogical dept of textbook content in the classification of living things, which show two dimension namely the dimension of elaboration and the dimension of progression. The overal teaching representation model is presented in a global structure.

Figure 1. Global structure of Classification of living things.



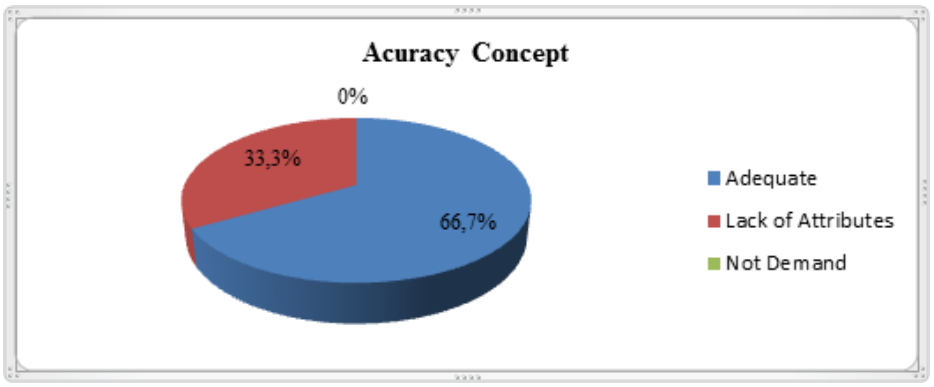
Based on figure 1, it can seen that the analysis of the dept of the material based on the macro proportion of the text show the dept level of each material content in the Classification of Living things, the material level is influenced by the level of dept and diffuculty of the material in that chapter. Based on the overall level of depth of the material for the Classification of living things chapter, the average content of each sub-chapter show level four, so that the depth of the level of elaboration has given good complexity to the chapter, so the chapter on the classification of livingthings in student textbooks is clssified as good used in the learning process if it is referred to from text discourse content analysis.

The Accuracy Concept of Material Content from the 2013 Curriculum Science student Textbooks on the Classification of Living Things Viewed from the Knowledge Structure Displayed.

Conceptual accuracy is a study of the systematic study of the grammatical language of a setence, text, and context, so that the meaning contained in the sentece can be interpreted. As discourse content, the subject matter component serves as a reference for truth values. The term content here takes a generel sense, namely material not in the context of knowledge structures) for the ongoing teaching and learning activities. In detail, the accuracy of the concepts found to have a level of concept accuracy, such as adequate concepts, lack of attribute, and the absence of concepts in learning indicators. The assesment of the accuracy of the concept is adequate, meaning that there is an accuracy of the concept or the similarity of the concept in the science student textbook on the classification of living things with conept analysis in term of critical attributes. For concept lacking attributes, namely concepts that have incomplete critical attributes in concept analysis, while concept that are not required in learning indicators, namely material in textbooks are not require on indicators and learning syllabus. The concept found 12 concept, with 8 adequate concept, 3 concept lacking attributes, and 1 concept not required in the learning indicators. The level of accuracy of the concept is adequate, 8 adequate concept are

found, namely in the concept of introduction material, with material content of objects around the environment and their characteritics as well as living and non-living objects, adequate concept accuracy in material concept because the core description used is appropriate and easy to understand as content. Learning subjects, adequate material content is found in the characteristics of living things, microscopic, fungi, mosses, ferns, spermatophytes, invertebrata, 3 concept are found, namely in the content of the dichotomous classification, monera and protista as well as the content of vertebrates. The level of cncept accuracy is not required in the learning indicators, one concept is found, namely the content of the taxon level material and the dual nomenclature system. The percentage found in the accuracy of the material concept in science textbooks for class VII student in the classification of living things chpater with adequate content is 70%, content lacking attributes is 26%, and content is not required in the 4% indicator. The following are the results of the percentage accuracy of concepts found in science student textbooks in the classification of living things chapter.

Figure 2. Percentage of Accuracy of Concept in student Textbooks on Classification of Living Things



The Relevance of the Content of the 2013 Curriculum science Student Textbooks on Class VII Semester 1 Classification of Living Things to the Science Syllabus Based on Standard Indicators of the Learning Process.

According to Yani (2014) the steps or syntax for learning scince process skills in the 2013 curriculum are five stages : obsersing, asking, experimenting, associating and communicating. To support the learning syntax of the 2013 curriculum, it must contain material content that contains the five learnng syntaxes. The results of the level of relevance of the 2013 curriculum science student textbooks to the 2013 curriculum science syllabus, that in the classification of living things found 10 learning indicators, 8 accomodated indicators and 2 unnaccommodated indicators.

Basic competence 3.2 is describing the classification of living things and objects in the environment based on the observed characteristics which were developed into 7 indicators of competency achievment with 5 accomodated indicators namely regarding the characteristics of objects in the surrounding environment, characteristics of living things, observatins of living things and non-living things, conclusions of living things, and the classification of living things based on the classification principle.

Observing : The book present observations of various objects in th surrounding environment, observations of image of humans playing ball and robots, observations of bags, car tires, balls, helicopters plans orangutans, and birds. Students read and see pictures about the characteristics of living things.

Asking : Doing questions and answers to the questions contained in the book.

1. What are the shapes, sizes, colors, surface conditions of objects, and the materials that make up the observed objects.
2. Are there differences in objects that have the same characteritics?

Association :

1. Determine the characteristics of object in the surrounding environment (observation of images of humans playing ball and robots, observations of bags, car tires, balls, helicopters, plants, orangutans, and birds) by observing directly or looking for information from books or references others, then compare the similarities and differences.
2. Make conclusions regarding the activities carried out regarding the characteristics of objects around the environment.

Communication :

1. Group discussion to discuss the results of the work form observation activities.
2. Delivering the results of observations on determining the characteristics of objects in the surrounding environment in the form of a written report.

Basic competence 4.2 is to describe the presentation of the results of the classification of living things in the surrounding environment based on the observed characteristics. There are indicators that are accmodated eith competency indicators:

Observe:

1. Read and see various pictures about human activities, plants, and objects in the environment. Konw the parts of a microscope and how to use them.
2. Look at the picture of the grouping of protists which is accompanied by a descriptipn of the explanation.
3. See the picture of the difference between mushrooms on bread and stale rice that has been overgrown eith mushrooms.
4. Observe carefully the surrounding environment for mosses, ferns, and mangoes.
5. See the difference between mlinjo and citrus plants.
6. observing the differences between invertebrates and vertebrates through pictures that are already available in textbooks.

Ask :

1. what are the charateristics of living things in the surrounding evironment according to observations?
2. What are the microscopic creature that can be observed under a microscope?
3. How do mushrooms look like?
4. Is there a diffrence between mosses, ferns and mango tress?
5. What is the difference between closed seed plants and open seed plants?
6. What is the difference between invertebrates and vertebrates?

Experiment :

1. Practical observation of microscopic living things in green water with the aid a microscope.
2. Observations were made by observing living things in a drop of pond water a microscope starting from weak amgnification to strong magnification.
3. Observing fungi, mosses, ferns, and spermathophytes, monocotyledonous and dicotyledonous plants, invertebrates and vertebrates.

Association :

1. Find microcopic living things in a drop of pond water.
2. Grouping the types of microscopic living things found using literature sources in books and other sources.
3. Discoussion of the results of research on mushroom shape observations with group friends through direct observation and looking at books or other references.
4. Discuss and draw conclusions with group friends regarding the results of comparative research on mosses, ferns, and mangoes based on the shape of their roots, stems, leaves, flowers, fruits, seeds, and habitats.

Communication :

1. Delivering the results of observations delivered in the form of written reports and presentations in front of the class.

Overall, there are 2 indicators that are not accommoated in the classification of living things, namely the explanation of objects that are natural and artificial and objects around the environment that are complex and simple. The text book does not explain in detail about these 2 indicators. So that in total there are 8 accomodated indicators and 2 non-accomodated indicators with a percentage calculation of 80% accomodated and 20% not-accomodated.

CONCLUSIONS

Based on the results of the research analysis and discussion of pedagogical discourse analysis, the accuracy of the material concepts, and the feasibility of the content of the material in the science textbooks for class VII science students on Classification of Living Things, the following conclusions were obtained: Pedagogical discourse analysis based on the teaching representation model on the subject material of the 2013 Curicculum Science student textbooks on Classification of Living Things produce teaching representation with a depth level of unit material reaching level four indicated by the level of material elaboration and the dimension of progression shown by the eight material found. This means that the greater the level of proportion found in the material, the more concept found in the textbook, so that the dept of the material presented has met the learning standards. The accuracy of the material concepts in the textbooks of science students curriculum 2013 class VII materila Classification on living Things found 12 material concept with 8 adequate material, 3 material lacking attributes and 1 material not required in the learning indicators. The concept of the material is classified as good in the learning but there is material that does not need to be included in the book because it is not listed in the learning indicators. And The relevane of the content of the of the textbook for science students in the 2013 curriculum for class VII material on classificaton of living things found 10 learning indicators. The percentage level of the relevance of the contents of the students textbooks for classification material accomodated 80% of the material content of supporting materials in the textbooks, so that the textbooks are classified as good for use in learning.

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