ANALYSIS OF SCIENCE TEXTBOOKS K-13 AND KTSP GRADE IX FROM THE RELEVANCE AND PRESENTATION ASPECTS

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Abstract

The world of education is one of the means to support the continuity of an individual's learning process. The availability of textbooks is a means that can support the teaching and learning process in schools. Therefore, textbooks become a reference in teaching various concepts and theories related to the subjects being studied. The purpose of this study is to examine the suitability of the content and presentation of the material to the applicable KD, as well as to see or find the comparison of the K-13 textbooks with the KTSP. The method used in this research is descriptive qualitative with analyzed content as well as conducting a study of books and reference sources as well as conducting observations to collect supporting data. The instrument used in data collection was a textbook assessment sheet and the data were analyzed using a textbook feasibility scale. The results of this study were obtained which were 0.86 and 0.8 respectively with the predicate very feasible/appropriate in terms of content relevance, then 0.8 and 0.76 with the predicate very feasible/appropriate in terms of feasibility and/or the suitability of presenting science textbooks, both the K-13 and KTSP in the inheritance of grade IX grades for SMP and MTs to KD (Basic Competence) so that they can be used as a source of reference for student learning at the education unit level.

Keywords: *textbooks, K-13, KTSP, KD*

Abstrak

Dunia pendidikan merupakan salah satu sarana untuk menunjang keberlangsungan proses belajar seorang individu. Tersedianya buku teks pelajaran menjadi sarana yang dapat mendukung proses belajar mengajar di sekolah. Karenanya buku teks menjadi acuan dalam mengajarkan berbagai konsep dan teori yang berkaitan dengan mata pelajaran yang sedang dipelajari. Tujuan penelitian ini adalah untuk menelaah terkait dengan kesesuaian isi dan penyajian materi terhadap kompetensi dasar yang berlaku, serta melihat atau menemukan perbandingan dari buku teks K-13 dengan KTSP. Metode yang digunakan dalam penelitian ini adalah deskriptif kualitatif dengan analisis konten serta melakukan kajian terhadap buku dan sumber referensi serta melakukan observasi untuk mengambil data pendukung. Instrumen yang digunakan dalam pengambilan data adalah lembar penilaian buku teks dan data dianalisis dengan menggunakan skala kelayakan buku teks. Hasil dari penelitian ini diperoleh yakni secara berturut-turut sebesar 0,86 dan 0,8 dengan predikat sangat layak/sesuai dari segi relevansi isi, kemudian sebesar 0,8 dan 0,76 dengan predikat sangat layak/sesuai dari segi kelayakan dan/atau kesesuaian penyajian buku teks IPA baik K-13 dan KTSP dalam materi pewarisan sifat kelas IX jenjang SMP dan MTs terhadap Kompetensi Dasar (KD) sehingga dapat dijadikan sebagai sumber acuan belajar peserta didik di tingkat satuan pendidikan.

Kata kunci: *buku teks, K-13, KTSP, kompetensi dasar*

Introduction

The world of education is a place where a person gets knowledge for the provision in the future. Armed with education, a person will be able to rule the world according to his interests and talents. In order to support educational activities, we need a material that will be taught to students. From the teaching materials, a person will be able to understand a science that is categorized according to the sub-discussion. The teaching material itself is part of the elaboration of a competency in a particular material. It can be seen that each material has a reference or basis on which these abilities will be used as benchmarks to be learned by students. Every level of education cannot be separated from the subject of Natural Sciences (IPA). Starting from the elementary, middle, and high school levels, there are science subjects.

In order to support teaching and learning activities in the education unit, it is necessary to have books supporting relevant material to make it easier for students to understand the material. With the existence of textbooks or teaching materials that are used as references in learning, it will be easier for teachers to convey or transfer material to their students. Teaching materials in the form of textbooks must comply with certain standard criteria that have been set to be able to support learning. Because basically a book must be in accordance with the circumstances and the curriculum imposed by the government, which must be adjusted and aligned with the K-13. This study aims to analyze one of the materials, namely "Inheritance of Traits" in science material for class IX SMP/MTs, namely the relevance content and suitability of presentation to KD as well as knowing the comparison between KTSP and K-13 textbooks.

Enforcement of standardization of textbooks will make a textbook to be accepted and used nationally by users in the world of education. The credibility and accuracy of the published materials are the fulcrum in the use of textbooks in schools. This is because so that students or students can understand the material explained by the teacher and will be in harmony with the *output* or goals of the results of studying one of the materials that can be achieved to the maximum and can facilitate students in learning and add sources of reference in learning. In addition, a textbook must be appropriate and in harmony with the applicable curriculum. The curriculum itself in UU No 20 Tahun 2003 concerning the National Education System is a set of plans and arrangements related to lesson materials, objectives, content and steps in organizing teaching and learning activities in order to achieve certain goals of education. The curriculum in Indonesia has undergone various periodization changes in order to improve the curriculum that has been used previously. So that the curriculum in Indonesia is not only one but more than that.

This research focuses on the Education Unit Level Curriculum or KTSP and the 2013 Curriculum or K-13. These two curricula are the curriculum used at the school level in Indonesia. Starting from elementary school to middle school. The Education Unit Level Curriculum or known as the KTSP 2006 is the curriculum used before the launch of the Curriculum 2013 (K-13). These two curricula have different characteristics and implementations along with the development of science and technology in this modern era.

Method

This research was conducted using a qualitative method with analysis descriptive supported by literature review by utilizing reliable sources in the form of texts that have been recognized for their accuracy. Data collection techniques using documentation and observation. According to Sugiyono (2015) document study is one to complements the data collection techniques in the form of observation or interview. Then in data analysis used descriptive statistical analysis steps. In this study, researchers will examine the relevance of the content contained in the K-13 and KTSP science textbooks as well as the presentation of

the material in the textbook on the material "Inheritance of Traits" for class IX SMP/MTs to the competency content in each of these curriculums. The instrument used in this study was a textbook assessment sheet that involved a validator, namely a science teacher at Junior High School 2 of Jetis Ponorogo.

Data Collection Instrument

The instrument used in data collection is by using an assessment instrument as follows;

Table 1. Textbook assessment instruments

No.	Aspect	Aspect Items	Indicator	Score				
				1	2	3	4	5

Source: National Education Standards Agency (2006)

Table 2. Criteria Scale

Scale	Information
0.75 - 1	Very Worthy/Very Appropriate
0.5 - 0.75	Worthy /Appropriate
0.25 – 0.5	Quite Worthy/Quite Appropriate
>0.25	Not Worthy/Not Appropriate

Source: researcher (2022)

Data analysis

The data analysis technique in this study used the equation (1) formula as follows;

$$\text{Percentage} = \frac{\text{answer score}}{\text{total score}} \times 100\%$$

Result and Discussion

Etymologically the curriculum according to Idi (2007: 183) in Hermawan et al. is a word that has its roots in ancient Greek, namely *curir* which means runner and *curare* which means a place to race. In addition, in terms of terminology, the curriculum has a meaning, namely the curriculum has a broad meaning, not only in terms of planning the teaching and learning process but also providing a change in the experiential learning process for the environment for children. On the other hand, the notion of curriculum is not only centered on a learning that includes teaching and learning activities but also relates to the influence of developing and forming an individual who is in harmony and in line with the educational goals to be fulfilled in order to make education more quality.

A curriculum contains several components which include aspects of the objectives rather than the curriculum itself. The curriculum used must contain objectives, content, and strategies.

a. Curriculum goals
   Curriculum goals are all things that will be achieved after studying a theory or concept from a curriculum. This goal is divided into 2 objectives, namely, first, the curriculum objectives to be achieved by educational institutions/agencies as a whole and second, the curriculum objectives to be achieved in a subject area/subject. So in this case the curriculum becomes a reference in which to focus on the goals to be achieved and mastered by students.
b. Curriculum content
   What is meant by curriculum content is the scope of material/concepts that are loaded and planned in accordance with the objectives of the curriculum. So that in relation to learning objectives, curriculum content must be in accordance with the scope and extent of the material discussed. This is useful to make it easier for students to learn and understand the theory/material being discussed.
c. Curriculum strategy
   The curriculum strategy is intended as a form of approach to be used or the method used for learning to be delivered to students. In addition, curriculum strategies are in the form of techniques used in delivering learning materials to students as well.

Then there is the opinion expressed by Hasan Langgulung which is related to the curriculum component containing 4 main components, namely;

a. There are goals to be achieved and realized by education
b. There are elements of cognitive (knowledge), information and data, as well as experience in the formation of a curriculum.
c. Methods or techniques in teaching to students
d. Evaluation methods or techniques to determine the extent of students' understanding (Nurmadiah, 2018)

Currently in Indonesia there is a curriculum that applies, namely the curriculum 2013 or commonly known as K-13. This curriculum is a curriculum that was initiated as the latest breakthrough by adjusting the developments and demands of the current era. The K-13 is a complex curriculum. The K-13 contains many new things that did not exist in the previous curriculum. The use of a new term in the K-13, namely SKL (Graduate Competency Standards) in which there are Core Competencies or known as KI. KI begins with the grouping of aspects of knowledge, attitudes, and skills. With the implementation of the K-13, the competency aspects of attitude are divided into two, namely aspects of spiritual and social attitudes. While in the discussion of the Education Unit Level Curriculum or known as KTSP, the structure in the curriculum is still very simple compared to the K-13.

The Education Unit Level Curriculum is a curriculum that was initiated as a form of reform from the curriculum that was previously applicable in Indonesia. This curriculum is a curriculum that emphasizes the pattern and order of subjects that must be achieved by students. The level of deepening of the material is contained in the competencies that must be taken which are adjusted to the learning dependents listed in the curriculum structure. This competency contains competency standards and KD that are developed with reference to graduate competency standards. While in the K-13, the structure of this curriculum is described in the conceptualization of curriculum content in the form of lessons, subject positions, distribution of subjects in each semester, as well as the learning load and study hours for each individual. In general, the concept of the 2013 curriculum structure is to emphasize the application of organized concepts to the system and the learning load of students or students.

In the implementation of learning in schools or educational units, a curriculum needs to be developed by taking into account the applicable competencies. Development of the Education Unit Level Curriculum or KTSP which consists of;

a. Centralized
   That is, the curriculum is developed centrally in accordance with the achievements in the material.
b. decentralized
   Delegated to each region, so that the learning process of the material is adjusted to the area of each educational unit.
c. Deconcentration
   The basic framework was developed by the national education center and developed by the respective regions.

From the development above, it is clear that the existence of KTSP in integrating learning in natural science material inheritance is centered on a detailed understanding and is broadly described, because all forms of development in textbooks are longer and denser with theories intended by the education center for existing educational units. in every area. However, despite this, the existence of a science textbook based on the KTSP curriculum is a basic reference in learning, especially in science learning by schools in inheritance material.

Meanwhile, if the K-13 textbook contains the main development principles, namely:

a. Relevance, which in this case science textbooks in inheritance material must be relevant to the outside and inside of the needs in the competencies to be achieved.
b. Flexibility, namely the presentation of the textbook will provide flexibility and flexibility in its use according to the competence to be achieved.
c. Continuity, namely the continuity between the content and the competencies to be achieved after studying the material.
d. Practical/efficient, namely the content of the K-13 science textbooks prioritizes things that are easy for students to implement.
e. Effectiveness, namely in this case science textbooks prioritize material content that is able to see the success of the teaching and learning process in education units.

From some of the principles above, it is known that in the KTSP curriculum text books and the K-13, the content raised in the material is as in the inheritance material, which depicts specific and general comparisons.

As a support for the continuity of learning in schools, it is necessary to provide teaching materials that are in accordance with the desired competencies to be achieved and fulfilled. The use of teaching materials in the form of textbooks is very important in the process or teaching and learning activities in every educational unit. In this case, when students want to deepen and add breadth to their understanding of the material, they can use textbooks as their main learning resource. Teaching materials are various kinds of materials needed to help facilitators/teachers in the implementation of a lesson. In the teaching material in the form of a text book, it contains a set of material that becomes material to be taught to students according to competence.

Competence is one of the components that make up a teaching material in the form of a textbook. This competency is one that must be mastered by the teacher. The competencies contained in the textbook include competency standards and KD. According to the National Education Standards Agency or BSNP, textbooks can be used as good teaching materials if they are able to cover the entire SKL (Graduate Competency Standards), are presented in an attractive manner, and have interesting content suitability. The juridical basis of the provisions of a good textbook according to BSNP is about books, namely Permendiknas Number 11 of 2005 article 1: "Textbooks are mandatory reference books to be used in primary and secondary education units or universities that contain learning materials in the context of increasing faith, piety , noble character and personality, mastery of science and technology, improvement of aesthetic sensitivity and ability, improvement of kinesthetic ability and health which are arranged based on national education standards". In addition, the juridical

basis used is PP No. 19 of 2005 concerning National Education Standards, article 43 paragraph (5), which states that the appropriateness of the content, presentation of language, and graphics of textbooks is assessed by BSNP and determined by a Ministerial Decree.

The feasibility of textbooks used as a reference for the use of textbooks in learning is as follows as determined by the National Education Standards Agency including:

1. Eligibility of content/material
2. Serving eligibility
3. Language eligibility
4. Graphical eligibility

So that in the preparation of textbooks to support learning, they must follow the criteria or rules that meet the eligibility of textbooks to be used in educational units as a means for teachers and students to carry out teaching and learning activities in educational units. Eligibility criteria for content or materials include the suitability of the contents of the book with Competency Standards (SK) and Basic Competence (KD) and the accuracy of the material. Then in terms of presentation feasibility, it is seen in the presentation technique and also in the presentation support.

The relationship with the preparation of the book, it contains the existence of SKL, KI, and KD so that the three components must be interrelated and in harmony. Thus, the basis to be achieved boils down to the SKL to be achieved. According to Law Number 20 of 2016 concerning Competency Standards for Elementary and Secondary Education Graduates, it is stated that SKL is a criterion regarding the qualifications of graduates' abilities which includes attitudes, knowledge, and skills and is used as the main reference for developing content standards (SI), process standards, educational assessment standards. , standards of educators and education personnel, standards of facilities and infrastructure, standards of management, and standards of financing. Then what is meant by KI itself is a Core Competence, namely the operational form of Graduate Competency Standards in the qualities that must be possessed by those who have completed education with competencies that prioritize *hard skills* and *soft skills* contained in the attitude, knowledge, and skills groups.

KI itself contains several competencies that are grouped more specifically, namely KI 1 is an aspect of spiritual attitude, KI 2 is an aspect of social attitude, KI 3 is an aspect of knowledge, and KI 4 is a psychomotor aspect or skill. Meanwhile, Basic Competence or known as KD is an integral component of SKL and KI. KD are all forms of competence derived from the KI of each subject. This KD is a content consisting of aspects of attitude (KI 1 and KI 2), aspects of knowledge (KI 3) and aspects of skills (KI 4) which will later become a reference for teachers in providing understanding and developing learning to their students in class.

In this study, is to analyze the comparison between science textbooks K-13 and KTSP for grade 9 SMP/MTs on the inheritance of traits seen in the relevance of content and suitability of presentation to KD. The books used in the analysis are books from the Ministry of Education and Culture for the K-13 and books from the authors of science textbooks/text books for KTSP. The following is the identity of the book analyzed by the researcher;

Book title	: Natural Science Class IX
Author	: Siti Zubaidah et al
Publisher	: Ministry of Education and Culture RI
Year of publication	: 2018 (Revised Edition)

Book title	: Natural Sciences for Junior High School and MTs Class IX
Author	: Wasis and Sugeng Yuli I
Publisher	: Book Center of the Ministry of National Education
Year of publication	: 2009

From the two books, there are several things that are different, first in terms of appearance or the cover of the K-13 IPA student textbook on the outside or the cover is more elegant and attractive to look at and read, the design used is also minimalist and does not interfere with vision. with components that make up the overall appearance of the book. While the KTSP Science book in general is still simple and seems monotonous, so reading interest is sometimes low so that students are less able to understand and appreciate from textbooks, especially science material which emphasizes the concepts in the material discussed. If we look at the comparison of competency standards and KD, there are differences in the systematics of writing KD codes between the two curricula in interpreting the achievements of a material. The comparison between the two SK and KD presentations from the two curricula can be seen in the following table.

Table 3. Presentation of SK and KD in the K-13

SK	KD
Attitude Dimension Have behavior that reflects the attitude of: 1. believe and fear God Almighty, 2. character, honest, and caring, 3. responsible, 4. true lifelong learner, and 5. healthy in accordance with the development of children in the family, school, community and natural environment, nation, state and regional area. **Knowledge Dimension** Have factual, conceptual, procedural, and metacognitive knowledge at a simple technical and specific level with regard to: 1. Science, 2. technology, 3. art, and 4. culture . Able to relate the above knowledge in the context of oneself, family, school, community and the surrounding natural environment, nation, state, and regional area. **Skill Dimension** Have the skills to think and act: 1. creative, 2. productive, 3. critical, 4. independent, 5. collaborative, and 6. communicative educational units and other sources independently.	3.3 Apply the concept of inheritance in the breeding and survival of living things. 4.3 Presenting the results of searching information from various related sources about plant and animal breeding results

Source: Permendikbud (2016)

Table 4. Presentation of SK and KD in the KTSP Curriculum

SK		KD	
2.	Understanding continuity living creatures.	2.1	Identify the survival of living things through adaptation, natural selection, and reproduction
		2.2	Describe the concept of inheritance of traits in living things
		2.3	Describe the process of inheritance and the results of inheritance and its application.
		2.4	Describe the application of biotechnology in supporting human survival through food production.

Source: Permendiknas (2006)

From the table above, it can be seen that in the preparation and presentation of SK and KD in the K-13 and the KTSP curriculum are different. In the K-13, the grouping of SK and KD looks detailed and specific compared to the KTSP curriculum. In the KTSP curriculum, the presentation of SK and KD is not integrated in certain and specific points as in the K-13. From the table above, it can be seen that the formulation of SK in the K-13 and KTSP has specific differences. So that it affects the formulation of the material in the book. If in the K-13, the SK or Competency Standards are presented in detail on the dimensions of the attitudes, knowledge and skills of students, so that the presentation of the material in the science textbook is more specific. Then in the KTSP curriculum textbooks, the existence of SK is described more generally and in the review or content of the material in the textbook, it places more emphasis on a more detailed and clearly illustrated understanding. So there is more elaboration of the concept. If you look at the substance of the material presented in KD, it is clear that the K-13 focuses on the discussion of the concept of inheritance, the impact of inheritance and technology developed from inheritance. Meanwhile, in books that use the KTSP curriculum, the material covered is broader and impressively diverse and integrated between one material and another in one sub-discussion or topic of discussion in each chapter. Namely, in the book, materials related to the process of an individual's survival are discussed, then the discussion is directed to the inheritance of traits and their application, then added with biotechnology material, but it is already in the scope of a separate chapter or separately in the preparation in the book.

In the KTSP book, there are no adjustments to the dimensions or aspects of detailed attitudes, knowledge and psychomotor. So that we can know that the KTSP curriculum prioritizes the development of potential, the developmental interests of students towards their environment. Then in the K-13 Science textbook there are details of points which are discussed in a concise and concise manner in order to train students to be able to think and prioritize the *student center* so that students are the center of attention or students can synthesize themselves by looking for relevant related sources. In principle, the KTSP curriculum is the result of improving the previous curriculum as well as the K-13 which is currently still being used and developing along with the times.

Table 5. Results of Assessment of Science Textbooks

No.	Category	K-13	Predicate	KTSP	Predicate
1.	Eligibility/Relevance of Science Textbook Content	0.86	Very Worthy/Appropriate	0.8	Very Worthy/Appropriate
2.	Eligibility/Fitness of Presentation of Science Textbooks	0.8	Very Worthy/Appropriate	0.76	Very Worthy/Appropriate

Source: Researcher (2022)

The feasibility of the contents of the book is seen in the relevance that is raised and presented that can be accepted and understood by students and teachers in learning. The main part is that the compilers of textbooks, especially science, must be adapted to concepts and developments that lead to science or science. Based on the results of the research that has been carried out, the results of an assessment of the level of feasibility/relevance of the contents of the SK and KD that have been determined are 0.86 for class IX science textbooks that use the K-13 and 0.8 for class IX science textbooks that use KTSP curriculum. So from these results, science textbooks, both the K-13 and the KTSP curriculum, meet the predicate very worthy to be used as a source of reference for student learning at school. After knowing the results of the assessment of science textbooks, these results indicate that the two books are relevant to the integration of KD to be achieved in each applicable curriculum in the book.

Based on the results of the assessment in terms of the feasibility of presenting the book, which book is considered suitable for use so that it can be in accordance with the directions and objectives of the KD which is a reference in carrying out learning so that it is directed and has meaning. The results of the assessment from the validation expert were 0.8 for science textbooks using the K-13 and 0.76 for science textbooks using the KTSP curriculum with the predicate very feasible/appropriate. So from these results it can be categorized that the two books have feasibility and or suitability in presenting the KD. Thus, science textbooks, both the K-13 and the KTSP curriculum, can fulfill learning activities in schools by integrating them into activities capable of generating student understanding in learning a science material.

Conclusion

The curriculum is an important component or part of education and is inseparable from learning activities in schools. The implementation of the curriculum in learning in schools is integrated in the Graduate Competency Standards (SKL) which in the SKL will be described in the form of Core Competencies (KI) and will then be translated into more detail in Basic Competence (KD). In order to achieve the expected competence, a teaching material in the form of a science learning textbook is needed that is able to encourage students to easily understand the scope of the material in learning. Textbooks used must be appropriate and appropriate by paying attention to KD in each material studied. In this analysis, it was found that both science textbooks using the K-13 and KTSP were both very appropriate/suitable presentation and very relevance for teaching materials or in accordance with the integration of the KD. So that it can be used as material for learning and supporting teaching and learning activities in educational units.

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