

Analysis of Teaching Materials and Learning Science Based On Curriculum 2013

Ramlan Silaban, Mahmud, Gaung Atmaja, Rabiatal Adawiyah

^{1,2}(Lecturer in Department of Chemistry Education on Post Graduate Program, Universitas Negeri Medan, Jl. Willem Iskandar Pasar V Medan Estate, Medan 20221)

³(Alumni Department of Chemistry Education on Post Graduate Program, Universitas Negeri Medan, Indonesia)

⁴(Teacher SMP Negeri 2 Lubuk Pakam, Kabupaten Deli Serdang, North Sumatera, Indonesia)
Corresponding Author: Ramlan Silaban

Abstract : *This study aims to analyze the science teaching materials related to chemistry, student learning activities, book eligibility and labor eligibility. This research is done by descriptive method, by applying observation technique. The location of research at junior high school 2 Lubuk Pakam and the subject of trial as many as 30 students. Technique of collecting data using instrument of national education service board (BSNP), activity observation sheet and questionnaire. Data analysis technique is descriptive qualitative and quantitative descriptive form percentage. The results of this study indicate that: (1) Learning materials analyzed related to the chemistry of additives and addictive substances. The material taught relate to daily life and student practicum activities conducted by using food and beverage, (2) The result of analysis of student activity learning activity based on observer I that is 78,03 and 77,12 with good criterion. (3). The result of feasibility assessment of book based on BSNP is feasibility of content 3,70 and feasibility of presentation 3,73 with eligible criteria, (4) Result of student laboratory feasibility analysis is 3,24 with eligible criteria*

Keywords - *Teaching materials, curriculum 2013, student learning activities.*

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I. Introduction

Science learning emphasizes the provision of direct learning experiences through the use and development of process skills and scientific attitudes so that the goals of science learning can be achieved optimally [1]. Teachers and students as the main actors play an important role in the field of education. The teacher is responsible for the transmission of knowledge to the students being taught. The act of teaching done is related to the mental representation of the students in order to find an input to develop the theory. Students who understand the theory in teaching teachers are able to apply useful science science and appropriate [2].

The curriculum standards concerning science are introduced in three sequences, among others; structure, reactivity, and quantitative. The curriculum serves as a guideline for student learning, which the teacher will explain the learning materials of science [3]. In relation to learning facilities, textbooks are one of the important educational access in conducting national education. This is stated as one of the efforts to improve the quality of education is through the procurement of quality learning materials. Quality education capable of producing good generation and noble character [4]. However, the results showed there are problems faced by students in the learning process is less interesting learning and media that have not been innovating resulting in less effective learning or not maximal [5].

To achieve good learning outcomes can be done by training students to develop their skills (listening, saying, reading, and writing) as well as critical thinking [6]. Students' thinking is more extensive with group discussions. The approach is done in a specific way to analyze the difficulty of learning [7]. The attitude of scientific thinking is also needed to orient and stimulate systematic ways of thinking. The student's most important scientific attitude is to dare to argue, to dare to ask questions, to be curious, to care about the environment, to work hard, to be meticulous, to be innovative, to be honest, to be disciplined and to have a high-level work ethic [8].

With the motivation of learning in the students activities become more interesting and involve the positive [9]. As large students find motivation during school, the activities of the students understand as well as the usefulness of the science teaching they get in school [10]. One of the efforts made with science learning innovation is poured in a module. The innovating module should be packaged in interesting forms such as the use of color, the style of the language according to the subject, complemented by drawings, illustrations, and sample questions to support the learning process of science creating character education [11].

Skills are expected to develop cooperation to achieve better results. The lesson is an educational science that provides the experience and skills of learning chemistry correctly [12]. One of them with the teaching of chemistry (science) preparing for improvement, but the attention of students to prepare for coping with changes and challenges around the environment. Chemistry typically centers on mastery of content with less emphasis on developing scientific attitudes and skills. Teacher as an introduction to the material as well as moderator of learning mediator [13].

II. Literature

The Nature of Learning

Learning is an aid provided by educators in order to occur the process of acquiring knowledge and knowledge, mastery of skills and character, and the formation of attitudes and beliefs in students. With the efforts of teachers to make students learn, capable of changing behavior in self-learning students, where the change is with the acquisition of new capabilities that apply in a relatively long time and because of the effort [14].

Learning Science

Learning science is one way to know the state of the universe systematically with the knowledge, facts, concepts, principles, process of discovery, and have a scientific attitude. The study of science serves to study itself as; analyze and observe the environment so as to create a formulation to develop the life to be faced. Science learning can be done with skills approach both insight and physical ability. Ability to observe, hypothesize, plan research and make conclusions [15].

Learning process

Learning is an activity of mental/Physic that take place in an active interaction with the environment that result in change of knowledge, understanding, skill attitude and value. In term of the change of behavior is limited and properly characterizes the learning process. It process whereby knowledge that created through transformation of experience. The change learning is a process attempts person to obtain a new behavior changes as a whole, as a result of their own experience in interaction with environment. Based on some opinion above can conclude that learning is a process to build behavior change either by training or experience regarding the cognitive, affective and psychomotor to obtain a particular purpose [16].

Learning Outcomes

Learning outcomes are direct statement that describes the essential and enduring disciplinary knowledge and abilities that student's should process and the depth of learning that is expected upon completion of program or course. They focuses on transferable knowledge, skill and behaviors that can be observe, assess, and reflect of disciplinary content moreover, learning outcomes are statement of what a learner is expected to know, understand or able to demonstrate after completion of a process of learning [17].

III. Research Methodology

This research is done by descriptive method, by applying observation technique. Descriptive method is used to describe and analyze student learning activities, feasibility books used and the feasibility of the laboratory. Technique done in this research is observing process of learning which go on in school. This research was conducted in Junior high school Negeri 2 Lubuk Pakam. Subjects in this study are teachers who teach Science in Class VIII in Junior high school Negeri 2 Lubuk Pakam. The sample in this research is 30 students of class VIII.

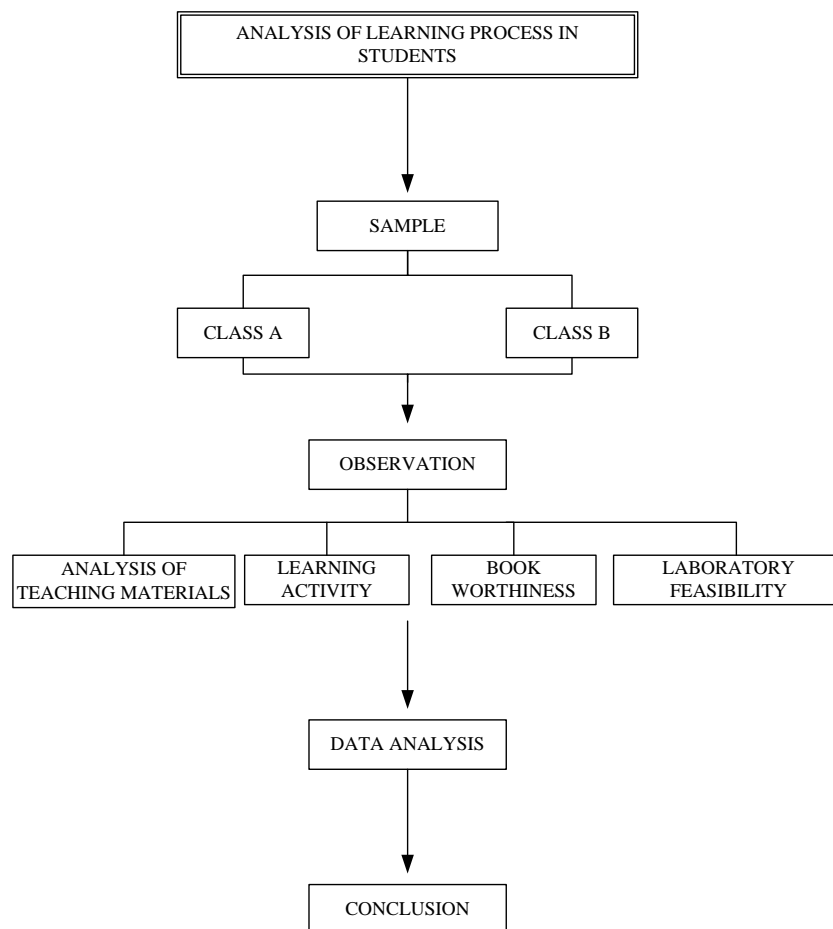


Figure 1. Research Design

IV. Results and Discussion

This research has been carried out and obtained the results of research in the form of analysis of teaching materials in school, observation sheet of student learning activities, feasibility books book sheet in school and laboratory feasibility observation sheet in Junior high school Negeri 2 Lubuk Pakam. The initial phase of this research started by analyzing science learning in Junior high school Negeri 2 Lubuk Pakam. After observation, there are some science lessons, among others: (1) Movement of Things and Beings in Our Neighborhood (2) Simple Enterprises and Plane in Daily Lives (3) Plant Structure and Function (4) Human Digestive System (5) Additives and Addictive Substances (6) Human Circulatory System.

The learning materials analyzed are chemically additive and addictive substances. This Class VIII Semester 1 textbook covers food and beverages that taste good, attractive colors, appealing aromas and charming packaging. Learning about additives is applied in the form of the image that appears on the book. Meanwhile, learning addictive substances to know the impact and benefits of food and beverages consumed.

The additive is concerned with the types of additives and the effects of the use of additives for health. Akitivitas student learning is done by practicum activities that Identify various additives in food and beverages. Practicum activities conducted by students with five types of food and beverage packaging. The results of student lab activities explain the identification of five types of food and beverage packaging regarding dyes, sweeteners, preservatives, flavorings and other additives.

The addictive substances in question about the types of addictive substances, the way of addictive substances and the effects of the use of addictive substances. Activities students' learning is done by practicum activities is Make model about the dangers of smoking for health. Practical activities conducted by students by bringing cigarettes and supporting tools. The results of the students practical activities explain the dangers of cigarettes and their effects on the health of the users and surrounding areas.

The result of the observation sheets observation of student learning activities during the learning activities conducted by first observer Class A are: group I with an average value of 89,01 with very good category; group II with an average value of 74,16 with good category; group III with an average value of 73,56 with good enough category; group IV with average value of 75,03 with good category; group V with an average

value of 78,43 with good category and group VI with an average value of 78,03 with good category can be seen in the graphs in Figure 2.

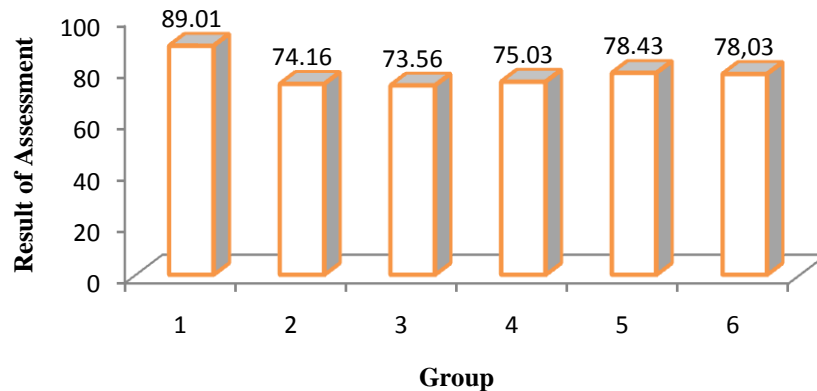


Figure 2. The result of the evaluation of activity observation sheet of class A by observer I at the time of the learning took place.

The result of the observation sheets observation of student learning activities during the learning activities conducted by the second observer Class A among them: group I with an average value of 89,28 with very good category; group II with an average score of 64,28 with poor category; group III with an average score of 67,85 with good enough category; group IV with an average value of 75 with good category; group V with an average value of 78,57 with good category and group VI with an average value of 74,99 with good category can be seen on the graphic shown in Figure 3.

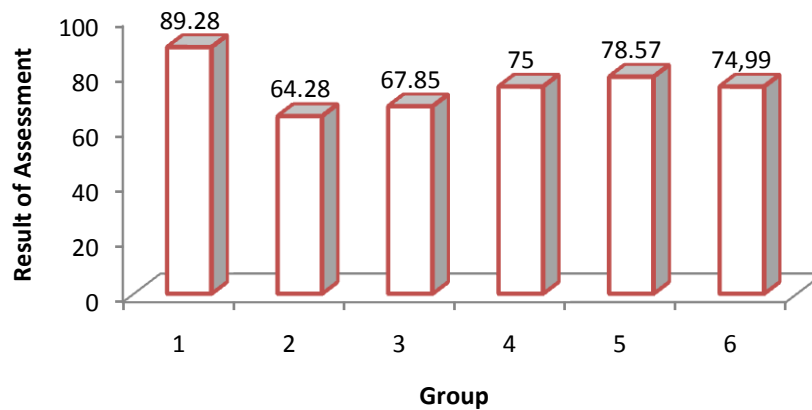


Figure 2. The result of the evaluation of activity observation sheet of class A by observer II at the time of the learning.

The result of the observation sheet observation of student learning activities during the learning activities conducted by first observer Class B among others: group I with an average value of 88,19 with very good category; group II with an average score of 71,12 with good enough category; group III with average value equal to 74,04 with good enough category; group IV with average value equal to 74,6 with good enough category; group V with an average score of 77,67 with good category and group VI with an average score of 77,12 with good category can be seen on the graphic shown in Figure 3.

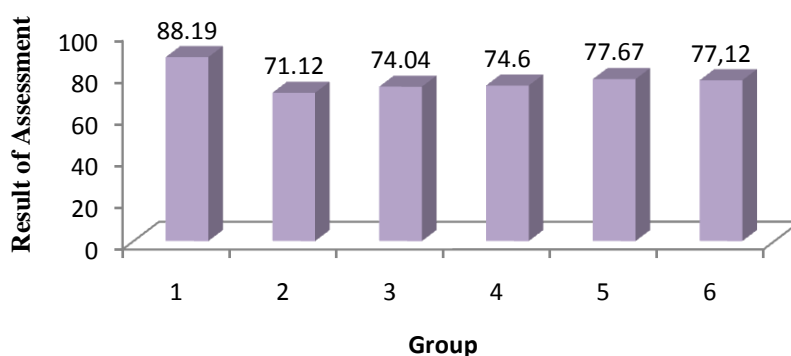


Figure 3. The result of the observation observation activity sheet of class B students by observer I at the time of the learning took place.

The result of the observation sheet observation of student learning activities during the learning activities conducted by the second observer Class B among others: group I with an average value of 89,28 with very good category; group II with an average score of 64,28 with poor category; group III with an average score of 67,85 with good enough category; group IV with an average value of 75 with good category; group V with an average value of 78,57 with good category and group VI with an average value of 74,99 with good category can be seen on the graphic shown in figure 4.

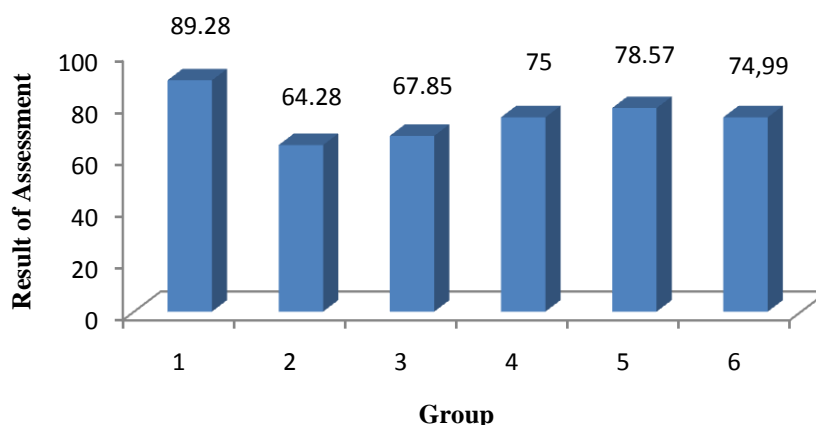


Figure 4. The result of the evaluation of activity observation sheet of class B by observer II at the time of the learning.

The analysis of the book carried out specifically the material of addictive substances and additives. the book in the analysis describes chemistry-related science materials in different order. There are sub-items that are described in detail and some are described briefly. Each chapter is also a practical activity that helps learning activities. Description of the book based on the sub-subject and the number of pages can be seen in Table 1.

Table 1. Description of science book analysis used by students

No	Book Code	Number of Pages	Material of Science Additives and Addictive Substances
1	A	344	1. Dyes 2. Sweetener 3. Preservatives 4. Flavoring 5. Aroma Giver 6. Thickener 7. Emulsifiers 8. Types of Addictive Substances 9. Effects of Addictive Substances for Health 10. Prevention Efforts from Drug Dangers

Furthermore, based on the composition of the material Table 1 analysis of the existing science books in Junior high school Negeri 2 Lubuk Pakam. The feasibility analysis of science books is adjusted to the National Education Service (BSNP) instrument with limited election eligibility that is the feasibility of content and language feasibility. The data obtained in the form of check list list, where the researchers provide a check list (√) on the appropriate column.

The results of the data analysis obtained are tabulated to determine the feasibility of the content, and the feasibility of the language of the book analyzed. The results of the content feasibility analysis include Material Coverage, Material Accuracy, Updates, Contains productivity insight, Stimulates Curiosity and Life skill averaged based on the component of assessment performed can be seen in figure 5.



Figure 5. The result of the assessment of the analysis of the content of the textbook of science.

The next data analysis is to determine the language feasibility of the book analyzed. The results of language feasibility analysis include in accordance with the development of learners, communicative, dialogical and interactive, straightforward and Suitability with the correct Indonesian language can be seen in Figure 6.

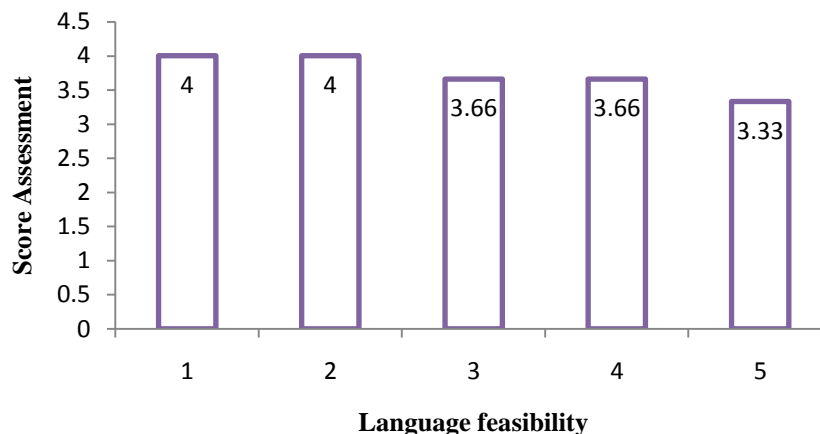


Figure 6. The results of the assessment of the analysis of the language of textbook textbooks.

Assessment of the completeness of the science laboratory is also measured by a questionnaire instrument in the form of assessment observation sheet. This observation sheet consists of 9 items used to see the completeness of the school to do the lab. Assessment results are presented in figure 7.

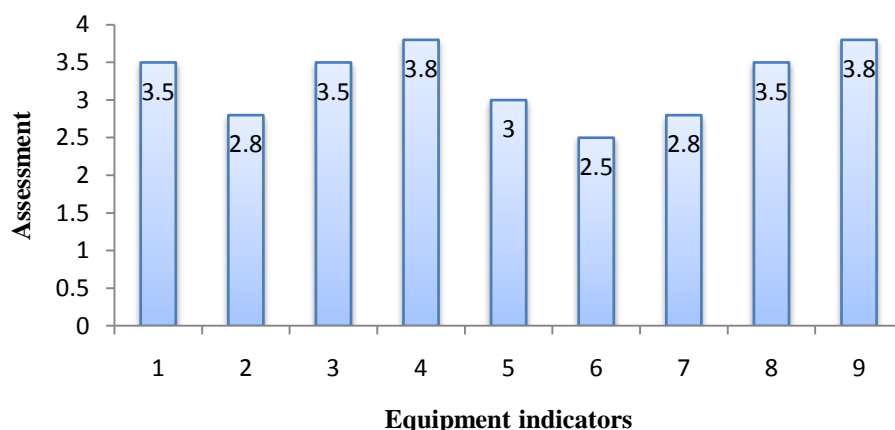


Figure 7. The feasibility of laboratory science equipment.

V. Conclusion

Based on the results and discussion of research that has been done, it can be concluded as follows: 1. Learning materials are analyzed related to chemicals namely Additives and Addictive Substances. Learning additives and addictive substances include food and beverages that taste good, attractive colors, appealing aroma and charming packaging. 2. The results of the analysis of student learning activity based on observer I that is 78,03 and 77,12 with good criteria. 3. The result of the feasibility assessment of the book based on BSNP is the feasibility of the content of 3,70 and the feasibility of presentation of 3,73 with the eligible criteria. 4. The result of student laboratory feasibility analysis is 3,24 with eligible criterion.

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