Learning media analysis in the development of integrated science teacher book with theme the energy in the life using type integrated of 21st century learning

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Abstract. Need analysis is done to determine the needs of teachers and contextual influences that encourage or hinder the learning process. This study aimed to analyze the needs in developing Integrated Science teacher book of Integrated models with them the energy in the life of 21st century integrates learning. The research was conducted by using qualitative method. This study was conducted at SMPN 1 Sijunjung. The data used are primary data collected through questionnaires and interviews. The result of this research is the books of Integrated Science teacher schools used are still not in accordance with the character of 21st century education that can improve the competence and performance of teachers in managing learning that educate and facilitate learners in mastering the 21st century character / skills. Additionally, Integrated Science teacher books used has not been based on learning by competence and context that should spur the students to have the skills simple think (LOTS) which leads to the higher-level thinking processes (HOTS). The conclusion of the research, the Integrated Science teacher book is that needed can improve the competence and professionalism of teachers to meet the demands of the development of skills / character of 21st century. The design of Integrated Science teacher book needed is an integrated teacher book of 21st century learning can help students to think a high level (HOTS).

1. Introduction
Nowadays education has entered the 21st century that is opening opportunities in the widest breadth of global competition. 21st century learning is learning that requires students to have skills, knowledges and abilities in the field of technology, media and information, learning and innovation skills as well as life skills and career. The skills that become focus in the 21st century learning competence for media literacy skills and information technology [1]. In addition, the 21st century learning lessons change is the paradigm from the teacher centered system to student centered system which requires students to learn and build their own knowledge as well as putting the teacher becomes a facilitator of learning. This learning requires thinking skills of learners that requires students to be able to find solutions to solve the problem through the knowledge he had. The 21st century learning will lay the foundation and competence, competence measurement with Low Order Thinking Skills (LOTS)
towards Order Thinking Higher Skills (HOTS), is learning that will start from a simple matter to the difficult thing.

Natural Sciences (IPA) education is one kind of education that discusses natural phenomenon systematically. Learning science or Science is the concept of learning natural science and has a very broad relationship associated with human life. The learning science has an effort to generate interest and the human is ability to develop Science and Technology (Science and Technology). Learning science is supporting the delivery of the development of the information and communication technology. Way of learning that is needed today to prepare students to be literate science and technology, personal character development or human, to optimize its development into a better and ready to face the challenges of the future in the 21st Century.

Generally, IPA at junior high school (SMP / MTs), covering the fields of energy assessment and amendments, earth space, living things and life processes, and material and it is actually very instrumental in helping learners to understand natural phenomena. So, learning science very helping students to understand all kinds of natural phenomena. Today, the science teaching in SMP/MTs has undergone several changes, among which the scope of learning science previously separated by respective disciplines now developed into a discipline that will be able to broaden the students are integrated IPA. Integrated science teaching is preferable implementation at SMP / MTs, as it has several objectives: improve the efficiency and effectiveness of learning as well as increasing interest and motivation. This will be good for the development of competencies, not only the competence of knowledge but also social and spiritual competence will also be developed with an excellent [2] [3]. The concept of integrity in science teaching contained in the Basic Competence Core Competence and learning science. In the Basic Competence already integrated the concepts science of biological sciences, physics, and earth and space science (IPBA). The concept of integrity in science teaching contained in the Basic Competence Core Competence and learning science. In the Basic Competence already integrated the concepts science of biological sciences, physics, and earth and space science (IPBA). The concept of integrity in science teaching contained in the Basic Competence Core Competence and learning science. In the Basic Competence already integrated the concepts science of biological sciences, physics, and earth and space science (IPBA).

The 21st century is marked by the increasing development of science and technology in various fields of public life. Technology enhanced demand for innovative and creative teachers in the media that will be used in the learning process [4]. Learning media is very necessary to prepare teachers to support the delivery of learning materials. It means teachers need the media aide to effectively communicate with students in the learning process [5]. One study used media teacher in the 21st Century is a book that teachers have been provided the central government as a handbook teacher who became a textbook of learning resources in the school. The book is a learning resource teacher provides materials and learning scenarios. Therefore, teachers should use this book while other learning resources of its supplements [6].

Books existing integrated science teacher should use one of three types of learning appropriate to be developed in the Integrated Sciences in Indonesia's education level, the type of integrated (coherence). Integrated learning can be packaged with the theme or topic of a discourse that discussed various aspects of the field of study that is easy to understand learners [7]. The theme is taken in this study is about the theme of Energy in Life may be discussed in terms of energy and sources of energy (physics), digestion (biology), the material and its nature (chemistry).

Designing and developing a valid teacher books, practical and effective as required, it is necessary to study the introduction or the so-called development model Plom Preliminary Research. At this stage has been carried out a preliminary study with analysis of the needs and context. This needs analysis was conducted to see how important books are teachers who will be developed and developed teacher book can contribute to both enhancing existing components on 21st Century learning addition, the results of field observations there are several problems found related to learning and teaching materials to use them:
In the implementation of the Integrated science teaching, teachers have started to run well but in certain parts of the material teachers can not apply in accordance with the demands of the book the teacher.

In integrated science teaching materials used by teachers are still not optimal because more teachers lecture in presenting the material.

Material provided by the teacher to the students in an integrated yet still fragmented between matter physics, chemistry and biology, in other words when teaching a theme, teachers tend to explain the substance of the matter in accordance with the understanding and background of teacher education itself.

In the learning process, teachers are guided by the handbook other than teachers books that have been provided.

Teacher used the book still does not meet 21st century educational character (4C).

The importance of teacher in the book has not become a serious concern that the implementation of an integrated science teaching has not done the maximum. With so many problems are found, it is necessary to develop an Integrated Science teacher guide that uses the type integrated of 21st century learning, so that can help improve the competence and performance of teachers to plan and manage learning that educate and facilitate learners, especially in the 21st century skills to master the most interesting themes to be taken in the development of integrated science teacher's book is the theme of energy in life. Therefore, before development, instructional media analysis is needed in the development of integrated science teacher book with theme the energy in life using type integrated of 21st century learning.

2. Research Methods
The case study of this research is a descriptive study with qualitative approach. Descriptive research not intended to test specific hypotheses. Descriptive research is a form of studies aimed to describe phenomena that exist, whether a natural phenomenon or man-made phenomenon. The phenomenon can be a form of activity, characteristics, changes, relationships, similarities, and differences between the phenomena with each other phenomena. Descriptive research can produce a picture of the phenomenon under study, describes the processes that occur and present a variety of important information about the variable.

The study population was the students of class VII SMPN 1 Sijunjung. Number of subjects calculated by the proportion or statistical approaches that are appropriate to the prevailing rules. Sampling was done by using sampling non probability accidental sampling, in which subjects are those who met the criteria and in accordance with the purpose of research. Samples are learners class VII SMPN 1 Sijunjung. The data used in this study are primary data obtained through a questionnaire. Data collection techniques such as questionnaires. The questionnaire used to analyze the assessment that teachers do.

The data analysis technique used is a Likert scale. Likert scale can be used to measure the opinion or perception of a person or group of events or social phenomena by using a questionnaire. Weights and measures is to give a question to a respondent and then asked to give an answer of choice answers, where the value of the answers have values different answer [8]. Answer options starting from never, sometimes, often and at all times. The questionnaire results obtained by calculating the scores given by the respondents.

3. Results and Discussion
Results from the study were obtained from the analysis of research using instruments developed are:

3.1. Analysis Competency Standards of Graduates
Competency Standards Graduates are qualified graduate capabilities that include attitudes, knowledge, and skills of learners who must be fulfilled or the achievement of an educational unit on elementary and secondary education. Graduation Standards Analysis SMPN 1 Sijunjung shown in Figure 1.
Figure 1. Graduation Standards Analysis SMPN 1 Sijunjung

Figure 1 shows that the dimensions of knowledge have a very high graphics compared to the dimensions of the skills and attitudes. This suggests that the learning process only requires the achievement of competence of knowledge alone, resulting in the formation of learning is still lacking in character.

3.2. Learning Activity Analysis

Implementation of the learning activity is the implementation of a lesson plan that had been developed. Learning activities include preliminary activities, core activities and closing activity. Analysis of learning activities done in class VII SMPN 1 Sijunjung shown in Figure 2.

Figure 2. Learning Activity Analysis in class VII SMPN 1 Sijunjung

Figure 2. Shows that there is an indicator on the analysis of the learning activities of students of class VII SMPN 1 Sijunjung still in enough categories, namely on its core activities with a percentage of 79.30%, While the introductory and concluding activities in the learning process of students of class VII SMPN 1 Sijunjung contained in the very good category. This is because in the learning process, especially on core activities, more teachers lecture in presenting the material than students who are active in learning. Based on the interview that was done on one of the teachers teaching science at SMPN 1 Sijunjung, in the learning process, especially on core activities, students are not accustomed to working groups, discussions and use of equipment / materials lab to lab activities are not carried out.
on some practical matter. In addition, the majority of science teachers skills in using the tools / specific material is still limited. This is due to the understanding and background of different science teacher education. For example, on some practical tools Physics, less able to be used by the science teacher education background Biology, and vice versa. It also resulted partly practical learning materials are not implemented.

Another factor that led to the low indicators of its core activities on the analysis of learning activities is the material provided by the teacher to the students yet integrated manner is still fragmented between matter physics, chemistry and biology, in other words when teaching a theme, teachers tend to explain the substance of the matter in accordance with understanding and background of teacher education itself. In addition, teachers use learning resources such as books teachers are not presented in an integrated materials and have led teachers on learning the characteristics of the 21st Century.

3.3. Assessment Analysis
Assessment is an integral part in a learning process. Assessment is a collection of information that is valid, reliable, and aims to improve the appearance. Ratings need good information and good information that should be valid and reliable. Assessment in education is the process to get information about the performance or the performance of learners. Analysis of assessment made in SMP Negeri 1 Sijunjung shown in Figure 3.

Figure 3. Assessment Analysis SMPN 1 Sijunjung

Figure 3. Shows that there is one indicator that is still in the category enough that the performance indicators. Implementation of learning undertaken in SMPN 1 Sijunjung not comparable with the planning and reporting process, this happens because teachers are too focused on planning and reporting of learning in the classroom, so that the implementation process was not optimal learning.

3.4. Character Analysis of Students
The conditions and characteristics of learners is one of the considerations that must be considered before making a learning tool, both related to interests and talents of learners, learning styles and abilities tendency possessed basic learners. Learners who is considered to have good basic skills will be different with learners who have little or no ability basis. Character Analysis of Students Grade VII SMPN 1 Sijunjung can be seen in Figure 4.
Figure 4. Analysis of Students VII SMPN 1 Sijunjung

Figure 4. Can be seen that the indicator analysis of learners Grade VII SMPN 1 Sijunjung there is a significant result, where the spiritual attitude indicator to get a value of 92.00 by the excellent category, social attitude value of 82.30 by the good category, knowledge of the value of 77.50 by both categories, the ability of students' initial value of 84.30 with both categories, learning styles to get a value of 77.50 by the good category, and motivation to get a value of 84.10 with both categories. Based on the analysis, there are two indicators that have low values such as knowledge and learning styles with a value of 77.50. This is because general science teaching is still visible or not Integrated Sciences. The material contained in the book used by teachers of teachers still lack the specifications of a theme that teachers are guided by the book in explaining the material was separated between the respective disciplines. This has resulted in lack of understanding learners with good learning materials,

3.5. Analysis a Instructional Media

The instructional media helps teachers in the learning process. With the media, learning will be more attention to motivate students to learn and learning will be more obvious meaning. In a medium of learning, the problem presented must be related to the material covered and close to the student environment. The language presented in the media can help direct students to construct their own knowledge, and problems designed to help students apply the knowledge they have built [9]. By doing so, learning materials can be better understood by the students and lets them take control and achieve learning objectives. Analysis of instructional media used in SMPN 1 Sijunjung seen in Figure 5.

Figure 5. Analysis of learning media use of Class VII SMPN 1 Sijunjung
Figure 5. Indicates that there is a gap in the use of instructional media used for the indicators of the quality of schools where learning and technical quality obtain the highest value that is equal to 83.30, while the quality of the content scores now significantly low at 70.80. It can be seen that the quality of the contents used in the instructional media used by teachers in schools is still low and does not correspond to the demands of the current learning.

Instructional media analyzed here is the book that the teacher has been provided by the school. In addition to the results of the questionnaire, to analyze the learning and teacher's guide also conducted interviews with subject teachers. From interviews obtained results, that:

- Some basic competencies in teachers used books need additional indicators and learning objectives that can be achieved basic competencies well.
- The material in the book the teacher used still somewhat shallow and needs to be developed further, as a result of teachers are still guided by another handbook. In addition, the material and learning step also lacking the specifications of a theme, so the explanation is still divided over their respective disciplines.
- Learning steps the teacher used the book has not been able to drive teachers to stimulate learners have the skills of simple think (LOTS) which leads to the higher-level thinking processes (HOTS).
- Examples of questions and discussion about that in the book the teacher is very little and there are some questions and discussion are not in accordance with the material contained in the book the teacher.
- Constraints teachers find material enrichment for certain basic competencies have not been written in the book of teachers.

So, there are still many shortcomings of teachers use instructional media that teachers books that have been provided in the school. The shortages are very visible, especially on the quality of the content and purpose.

Based on the analysis performed on the 5 aspects of the above, it is clear that learning is done in class VII SMPN 1 Sijunjung on Integrated science teaching has not done optimally in accordance with the purpose of education one is responding to global challenges. Today's global challenges can be faced when learning is done in accordance with the 21st Century learning, where learning that integrate literacy, skills knowledge, skills and attitudes, as well as mastery of technology. Skills needed in the 21st century is the higher order thinking skills (HOTS), which is indispensable in preparing students to face the global challenges. Besides the teachers should have the competence and performance improved in managing the learning that educates, and facility of learn in mastering the 21st century character/skills.

The 21st Century Learning will be implemented properly if it is integrated with a good learning media as well as Master's books, where in the book the teacher will contain learning steps that must be done by the teacher in the learning skills of the 21st century, however, Integrated Science teacher books used at SMPN 1 Sijunjung still not consistent with the character of the 21st century education to upgrade the competence and performance of teachers in managing learning that educate and facilitate learners in mastering the 21st century character /skills. Additionally, integrated science teacher book used not provide an integrated materials and has been based on learning by competence and context that should spur the students to have the skills of simple think (LOTS) which leads to the higher-level thinking processes (HOTS).

4. Conclusion
There are five aspects of the analysis carried out in SMPN 1 Sijunjung. First, the analysis competency standards showed that the learning process only requires the achievement of competence of knowledge alone, resulting in the formation of learning is still lacking in character. Second, the analysis of learning activities, indicators of its core activities is still classified sufficient criteria because teachers are more lectures in presenting the material. Furthermore, the materials given to students in an
integrated yet still fragmented between matter physics, chemistry and biology, in other words when teaching a theme, teachers tend to explain the substance of the matter in accordance with the understanding and background of teacher education itself. In addition, teachers use learning resources such as books teachers are not presented in an integrated materials and have led teachers on learning the characteristics of the 21st Century. Third, the analysis of the implementation of learning done in school is not comparable with the planning and reporting process, this happens because teachers are too focused on learning in the classroom planning and reporting, so that the implementation process was not optimal learning. Fourth, the analysis of the character of the students, there are two indicators that have low values such as knowledge and learning styles. This is because general science teaching is still visible, the material in the book used by teachers of teachers still lack the specifications of a theme so that the explanation was separated between each discipline that resulted in the learning process of students do not understand the lesson well. Fifth, the media analysis of learning in content quality scores much lower. It can be seen that the quality of the contents used in the instructional media used by teachers in schools is still low and does not correspond to global challenges. Therefore, it takes the book Integrated Science teacher to improve the competence and professionalism of teachers to meet the demands of the development of skills / character of 21st century. The design of Integrated Science teacher book that is needed is an integrated teacher book of 21st century learning can help students to think a high level (HOTS).

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