Analysis of teachers need in developing integrated science text book IPA adaptation system human body to temperature change using integrated 21st century learning

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Abstract. In science learning there needs to be a learning resource that is an integrated IPA text book that in accordance with 21st century learning. The propose of this study is to find out the needs of science teachers in junior high school in the face of 21st century learning. The method used in this research is descriptive method. Data analysis qualitatively and quantitatively. The result of the research show that the problem of integrated science learning in SMP Pasaman wets is, 1). The implementation in integrated type integrated science learning is not optimal yet at west Pasaman, 2). Have not been able to provide integrated science learning materials that are integrated with 21st century learning abilities, 3). The absence of science teacher books developed in accordance with 21st century skills. Based on the result of research is very important to do the development of integrated science text book with the theme. The adaptation system of the human body to temperature changes using integrated integration type 21st century learning to deliver learners have 21st century learning abilities.

1. Introduction

The 21st century is a century of knowledge and technology, especially communication and information technology. 21st century learning is a learning that integrates literation skills, knowledge, skills and attitude and mastery of technology education plays an important role in preparing graduates to be able to face the 21st century. Four skills that must be owned by 21st century education graduates namely critical thinking in problem solving, communication skill, creative and innovative collaboration. For that reason, teachers should be able to equip learners in learning to face the 21st century [1][2]. In addition, skill becomes a primary need in sustaining life in the 21st job: digital capabilities, discovery thinking, communication skills and being productive. To meet the desires of the 21st century, knowledge must be supported by ability of critical and creative thinking, character and ability to apply information technology[3].

According to Partnership for 21st century skills the factors that exist within the organization is to focus on materials that match the content of the material and features; focus on learning using technology for information, skills, skills and performance, skills and use of information technology; principally concepts based on examples and real-world experiences; break knowledge, experience, and skills; and use appropriate and effective measuring tools to assess skills[3].
Literacy becomes an important part in a learning process learners who can carry literacy activities with the maximum of course get more learning to experience compared with other students. The learning process will start from on easy going to a difficult one with a low evaluation of thinking will be a ladder for learners to improve competence toward someone who has a critical mind set. Learners who are critical, creative, collaborative and able to communicative well will also increase their character to be responsible, hardworking honest in their lives. Learners who experience the learning process by carrying out learning literacy activities and teachers to strengthen the character in the learning process in the face of the 21st century [2].

In addition to integrating 21st century learning skills, teacher roles and teaching materials are important to facilitate learners learning both at school and home study one of the teaching materials is an integrated science teacher book. Integrated learning makes learning more relevant, effective efficient, and varies in teaching style [4]. In this research using model of integration [5][6]. Alignment model is an integrated learning model that uses approaches between fields of study theme taken in this research is adaptation system of human body to temperature change. This theme is a composite off two subject matter of physics and biology. Matter of physics that is science (IPA) object and it’s observation, temperature and heat while. Biological matter is system of life organization with the existence of the complaint learners will acquire knowledge and skills intact so that learning is more understood according to the concept learned needs analysis is an important step when planning is really expected to fit the real situation.

Needs analysis should not be done or ignored originally [7]. Needs analysis involves identifying the needs to place them in order of priority and choosing the most important. For optimal integration of 21st century learning abilities should be analyzed the needs of teachers in the book type of integrated teachers are used in the learning process.

But the problems faced by the teachers, especially in the field of integrated science is the background of education greatly affect the learning process. Many integrated (IPA) teachers are in experienced, untrained and unqualified for work they do with all the problems encountered during the learning process in he school used teaching materials in the form of teachers books used as a support the demands of 21st century learning. Based on existing problems then this study analyzes the need of teachers in developing integrated science books with the theme of human body adaptation system to temperature change using integrated type integrated learning 21st century.

2. Methods
This research uses survey research design and need assessment. The main target of this stage of research is the need of teachers in the development of integrated science teacher book integrated 21st century learning. The population of this study is a teacher member of MGMP IPA junior high school (SMP) West Pasaman. In this study the research serves assessment a key instrument assisted by questionnaires and interview guides data analysis is done qualitatively and quantitatively with liker scale. On the liker scale with five scale there are five alternative answers that are very agrees, agree natural, disagree and strongly disagree. On the liker scale of the five scales then strongly agree must be higher than agreed the neutral certainly higher than the disagreeing while the disagree must be higher than the strongly disagree. While scoring way that strongly agree 5, agree 4, neutral 3, disagree 2 and strongly disagree 1. Just a code only to know which one is higher and which is lower [8]. Form the way of scoring is we can not mean that strongly agree is neutral plus agree. That research aims to see how for the need of integrated science teacher to book with them of adaptation system of human body of change of temperature of type integrated in integration of 21st century learning.

3. Results and Discussion

3.1 Result
The first result of preliminary research begins in the implementation of science learning integrated with interview technique with interview instrument that is 1) View of Science teachers on integrated
type integrated science learning, 2) Integrated learning process of integrated type of integrated, 3) Techniques of integrated type integrated IPA in learning, 4) Use of integrated type integrated science learning, 4) Factors of problems in the application of integrated type of integrated science learning in learning.

The result of the interview analysis the first result of 64.78% science teachers stated that integrated IPA learning is interesting, while 35.22% teachers said integrated science learning is difficult to implement, the second result of all science teachers stated that integrated science learning has implemented integrated science lesson, but the implementation is not good enough. Third result 43.26% teachers stated that they al ready use the type of integrated learning, the result of the five factors causing problem in applying integrated science learning is the lack of integrated IPA reference the lack. Of mastery on integrated science learning as well as in appropriate educational background. Can be see from picture 1.

![Figure 1. Implementation of integrated type integrated science learning.](image)

The second result of analysis to do analysis of teaching materials, teachers must have on understanding of. Standard of graduation competence content standard, book and teacher, student book and assessment sheet . Based on the result of data analysis of research result there are 14.80% teachers are very capable of analyzing the material in accordance with size century learning, 40.30% teachers are able to analyze teaching materials based on 21st century learning, 3,.90% teacher have not been able to analyze the teaching materials according to 21st century learning, this can be in picture 2.
Figure 2. Teachers understanding of material analysis in accordance with 21st century learning

Figure 2 shows that the picture of teachers ability in analyzing teaching materials in 21st century learning is still not maximal the majority of teachers are still in the knowing stage of conducting material analysis as for the reason teachers have not bee able to analyze the material is 1) Still do not understanding how to use KD, 2) Still do not Understanding learning speaker learning system, 3) Have not teachers reference book, 4) In depth learning 21st century learning.

From the analysis obtained the picture that things required teachers to be able to do the analysis of teaching materials is 1) Training for teachers who have not receiv ed training, 2) In depth training on how analyze teaching materials, 3) Training a How to Integrated teacher Book and Training on 21st Century Learning.

The third analysis of the integration of 21st century learning in teachers includes four aspects is 1) Critical thinking skills and problem solving, 2) Communication skills, 3) Creativity and innovation, collaboration, can be seen in Figure 3.

Figure 3. Integration of 21st century learning on teacher books with the theme of body adaptation system to temperature change.
Figure 3 shows that critical thinking skills are 47.60%, communication skills 50.4%, creativity and innovation 42.7% and collaboration 52.82%. Seen from the aspects of integrating 21st century learning is still low means texts books are not optimal in integrating 21st century learning skills and not yet a character for learners.

3.2 Discussion
The result of teachers need obtained indicate that integrated type integrated science learning has not been maximally implemented property. This is because IPA teachers are still having difficulties in applying integrated science type learning integration. There are several factors that have difficult among others, lock of reference to the learning of integrated science, less mastering the material of integrated science and education background.

Analysis alternative solution of this problem is the teacher using integrated science teaching materials in the form of teachers book assessment a medium of learning in science learning. While the teaching material analysis is training for teachers who have not received training, training on combining teachers books analysis training on the development of learning evaluation, while for the integration aspects of 21st century learning is still less than optimal in integrating 21st century learning skills analysis has not become a character habituation for learners in 21st century learning.

4. Summary
After analyzing the needs of teachers can be expressed three preliminary research result that is the first requirement of teachers in integration type integrated science learning has not been implemented assessment expected science teachers are still having difficult in applying integrated type integrated science learning. Secondly, analysis integrated science teachers should received special training in analyzing materials according to 21st century learning. Third, teachers are still less than optimal in integrating 21st century learning in integration science learning. Based on this is very important to do the development of integrated science teachers books with the theme of human adaptation system to changes in temperature integration type integrated learning 21st century.

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