Validity of integrated science teacher’s book on junior high school based on character with the theme of cohesion and adhesion on living with shared model

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Abstract. This research was motivated by many obstacles faced by teachers in the use of teachers books processed learning, ideally teacher book that refer to the curriculum 2013 can facilitate teachers in the learning process as well as showing the reference points that will be developed by competency standard of graduates, competency indicators and basic competencies of each subject are then put together in one theme, but actually many teacher books that have not fully facilitated the teacher for the learning process activities, one of which is the material presented has not shown integration between physics, biology and chemistry, the content of the material presented is also concise, making it difficult for the teacher if the material being taught is not the basis. Seeing these conditions, the researchers are interested in developing integrated science teacher books containing character based on shared models, the development of the teachers book is done so that the teacher is assisted in the learning process especially in theme cohesion and adhesion material in the class one on Junior High School. The purpose of this development is to produce integrated science teacher books containing characters with the theme of cohesion and adhesion on living with shared model with valid criteria. This type of research is development research using reeves model with stage analysis of practical problems, design and development the prototype, Iterative cycles of testing and refinement and implementation phase. The result of the development stage was produced by a valid teacher books with a criteria (≥0,6) and used in the implementation stage.

1. Introduction

Education in essence cannot be separated from human life, because education can create superior, independent, noble and pious human beings. The development of the education system has been carried out in the education process. The one of the developments is making changes and developing the curriculum, K13 requires the implementation of Natural Sciences (IPA) learning for elementary and junior secondary education to be carried out in an integrated learning[1].

The factors supported in learning to be more focused is the existence of a guidebook, both in the form of a teacher's book and a student's book. Teacher's book is a guide for teachers in carrying out learning in class, Teacher's book is a book used by educators as a handle in the learning process. This book is a "living document" that is constantly being improved, updated and updated in accordance with the dynamics of needs and changing times. The teacher's book talks about problems in the classroom process and the teacher's book is also used as a guide for the use of the student's book, therefore educators...
must first learn information from the teacher's book, which is the order of reference of subject matter developed from graduate competency standards, core competencies, and competencies the basis of each lesson content, which is then combined or integrated in one particular theme[2].

The majority of the teacher's books are used by educators in SMP Padang, including SMP 6 Padang and SMP Baiturrahmah Padang, which are published by division curriculum and books of the Ministry of Education and Culture. The result of observation at school it was found that the teacher's book at the junior secondary level had been compiled in an integrated manner based on the 2013 curriculum, but there were still some shortcomings that were obstacles in the field, especially in terms of delivering subject matter, which was difficult for educators with a physics background when explaining the material biology, and vice versa biology educators will experience difficulties when explaining physics material, this is due to the revised edition of the seventh grade teacher's book for the seventh edition of the government explanation of the material for educators is too concise, so educators have minimal information that causes expected competencies difficult to achieve.

The problems in government-issued teacher books attract researchers to develop integrated science teacher books that are in accordance with the curriculum, characterized by the theme of cohesion and adhesion to the environment. The obtain information about existing problems and the possibility of needing improvement and innovation needs analysis is done, researchers are interested in developing a textbook with reeves development model, in the development model there are 4 phases to be done by researchers, problem analysis phase, design phase and prototype development, the repetitive testing and repair phase and the implementation phase. The four phases in the reeves development model are considered to be researchers who can assist in the process of making textbooks, because in the initial phase of the reeves development model, an initial analysis is carried out, namely conducting a needs analysis aimed at identifying problems, causes of problems and possible solutions that can be taken to solve problems the. Analysis of needs is carried out including among educators (initial initial analysis, analysis of learning activities, media analysis, and assessment analysis). The development of this teachers’ book aims to produce a character-based integrated science teacher book with the theme of cohesion and adhesion to living things based on a shared model is valid.

2. Method
Research carried out in development research used to produce certain products and test the effective of these product[3]. Development of research design reeves that will steps of development to carried out analysis of practical problems, design and development the prototype,Iterative cycles of testing and refinement and implementation phase. The starting point of development research is the identification of educational problems obtained through previous research information. The evaluation design analysis and revision activities are repeated until formed is a valid teachers book. Data collection techniques conducted in this study were interviews (questionnaires), questionnaires, observations and a combination of the three[4].

| Table 1. Stages of data collection |
|-----------------------------------|
| **Activity**                      | **Data collection technique**                                      | **Respondents**      |
| Preliminary Research (Needs Analysis) | The selection from development of the type of teaching material is teachers book. | Research team         |
| Expert validation                 | Questionnaire media feasibility (To find out the feasibility of the product according to media experts and material experts) | Media experts and material experts |
| Limited Trial                     | User response questionnaire (To find out the initial response of the teachers assessment of the product) | Teacher               |
3. Results and Discussion
The summary of the validation values of all validators for each component of validation concluded that teacher books on junior high school based on character with the theme cohesion and adhesion on living with shared model is presented in Table 2.

Table 2. Data from validation by media experts

| Aspect               | Presentation | Category |
|----------------------|--------------|----------|
| Content Aspects     | 0.76         | Valid    |
| Construction Aspects| 0.82         | Valid    |
| Language Aspects    | 0.75         | Valid    |
| Graphic Aspects     | 0.81         | Valid    |

Based on the results of the validation that has been done, it can be concluded that teacher books on junior high school based on character with the theme cohesion and adhesion on living with shared model is in the valid category. This is evidenced by the value of each aspect at a value $\geq 0.6$.

4. Conclusion
Based on the results of research and development carried out starting from the analysis phase, design stage, development stage, implementation stage, and evaluation stage obtained Teacher’s Books on junior high School based on character with the theme cohesion and adhesion on living with shared model is valid.

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