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The Development of "Macromedia Flash" Interactive Media For Subject Matter of Nature and Changes In The Subjects of Science For Students of Fourth Graders At Primary School 4 Selong

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Abstract: This study aims to produce interactive learning media using "Macromedia Flash" on the subject matter of the nature and changes in the shape of objects. The subjects were students of fourth graders of elementary school. Data collection instruments included validation sheets, achievement test, and student response questionnaire. The data analysis technique was a calculation using a five scale for analyzing the results of the validation and scoring of values (1) and no value (0) for student questionnaire responses. The results of validation from media experts showed good qualifications and the results of validation from material experts showed good qualifications as well with the total score for media experts was 61 with an average of 4.0 while the value of material experts amounted to 58 with an average of 3.8. The results of the questionnaire responses of students in the field test total overall value of 173 with a percentage of 91.0%. The value was conversion table which the response of students was to the media included in both categories. The number of students who completed was 16 out of 19 students, and the highest number was 90 and the lowest score was 55 with KKM 70, so the percentage of student's completeness learning classically was 84.20%.

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Introduction

The Science of Natural Education (IPA) is one of the most needed branches of science in everyday life and an integral part of national education. Therefore SCIENCE subjects are studied in almost all levels of education. Especially education level of elementary school. SCIENCE education is very necessary to be studied by elementary school students, because IPA is related to how to find out about nature systematically, so that SCIENCE learning is not only a collection of knowledge in the form of facts, concepts, or Principles but also as a process of discovery. IPA education is expected to be a vehicle for students to study themselves and the environment, as well as the prospect of further development in applying it in daily life. The process of learning emphasizes the direct understanding to develop potential, in order to explore and understand the natural environment scientifically (Depdiknas, 2003:484).

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IPA education is beneficial for elementary school students to study themselves and the environment. SCIENCE Education emphasizes the provision of live experience to develop the potential for students to be able to explore and understand the natural environment scientifically. IPA education is geared to "find out" and "do", thus helping students to gain a deeper understanding of the environment.

Media learning is identical meaning with the sense of agate derived from the word "body" is a form that can be palpable, seen, heard and observed through the five senses (Hujair AH Sanaky, 2013:4). The substance of the Learning Media is: (1) The form of the channel is used to transmit messages, information or material subjects of the message or learner; (2) Various types of components in the learning environment that can stimulate learners to learn; (3) The form of physical tools that can present messages and can stimulate learners to learn; and (4) forms of communication and methods that can stimulate learners to learn, both printing and audio (listening), visual (Viewing) and audio-visual (listening or viewing).

The purpose of using multimedia in education is to involve learners in experience. Multimedia is an interactive activity by inviting students to the learning process to select and control the screen between the information window in the media presentation. Nowadays, it's useful and various resources and learning methods, achievement of learning outcomes is expected to increase. Multimedia uses the computer to compile the information stored and presented in various forms such as text, motion pictures (animations), graphics, video and sound (Sri Anitah, 2012:53-54).

Based on observation results in elementary school, information that teachers in the learning process rarely implements learning methods with the use of learning media such as interactive multimedia. This is because teachers are less motivated to utilize and develop learning media. This is due to lack of awareness of teachers ' importance on the use of media for improved learning quality, as well as the presence of media that is less usable by teachers, especially in media that uses more complex and Special skills or require training in their use. Just as the teacher relies solely on media that exists in schools that are mostly media-media or media given by the government.

The obstacles faced by grade IV students at Primary School 4 Selong are as follows: (a) The lack of use of learning media leads to low student learning interest; (b) Lack of participatory students in learning; (c) The lack of attention of students to the teacher's explanation because students are circumcifying themselves with playing activities unrelated to learning; (4) The unavailability of learning media that is suitable to be seen from its cognitive, affective and psychomotor aspects, thus causing a lack of student understanding of the material being taught includes material that requires visualization of concepts such as Material nature and changes in the form of objects in the class IV SCIENCE subjects that are still difficult to understand by most students if taught only by oral course.

As an effort to overcome these problems, a learning media is needed that supports the achievement of the learning objectives, especially on SCIENCE learning. One of the media that will be developed by researchers is the interactive media "Macromedia Flash", which can help teachers in delivering learning content/materials in the learning process with a variety of teaching, interesting and pleasant atmosphere.

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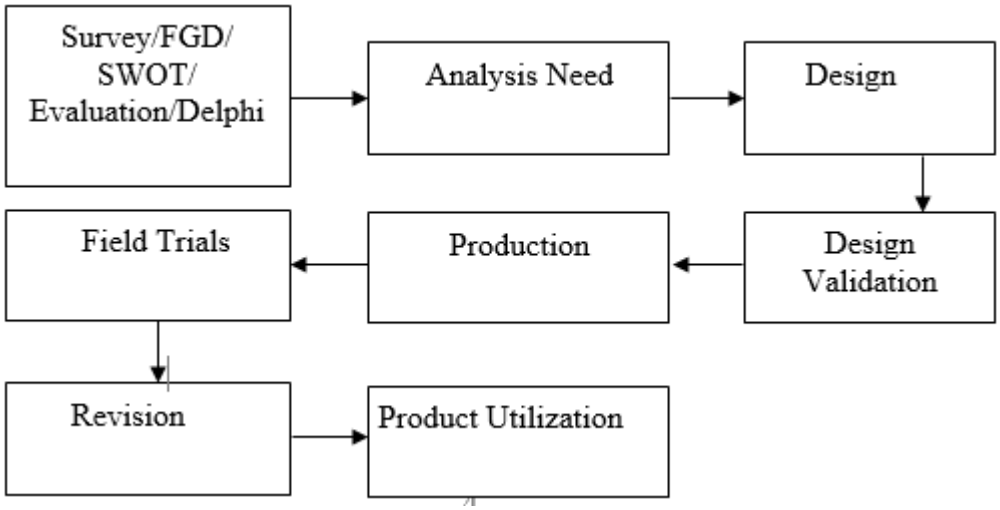
In connection with the needs of the learning AIDS or media, in this research researchers wrote the title "Interactive Media Development" Macromedia Flash "for the subject of nature and change of objects in the study of IPA class IV at Primary School 4 Selong.

Research Method

The type of research used in this research is research and Development development (R&D), which is oriented to produce and test a product that is interactive media "Macromedia Flash". The development model used in this research was the development model of Borg and Gall which was then simplified and modified to align with the purpose and condition of the researcher.

Based on the research questions previously stated. This development study adopted the Borg and Gall development model by adopting 10 (ten) stages then simplified to 7 (seven) stages. The 7 (seven) stages are simplified/modified: (1) need analysis, (2) design, (3) design validation, (4) production, (5) field COA test, (6) revision, (7) Product utilization.

The research uses development procedures with the schemes of the Borg and Gall development model research. In this study, researchers compiled and modified the development model into the following 7 (seven) stages:



Drawings of the Borg Model development stage Scheme & Gall

The test subject of this interactive media development research "Macromedia Flash" is in grade IV students at Primary School 4 Selong. Total test subjects were 19 students.

Data that will be obtained by researchers in the development of interactive media "Macromedia Flash" is the first obtained from the validation team (material experts and media experts), while the second data is obtained from the field trials. There are two types of data obtained in this development research, namely as follows:

a) Quantitative Data
   The most worrying Data gained from field trials is the outcome of learning learners after the use of interactive media "Macromedia Flash" on the learning process in the classroom.
b) Qualitative Data

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Quantitative data is derived from the validation team (material members and media experts) to assess the content aspect and media display as well as the observation result of the response or response provided by the student to the product developed interactive media " Macromedia Flash ".

Instruments of data collection that is Data in the development of learning Media Interactive Media "Macromedia Flash" that researchers do this requires a data collection instrument, therefore in the collection of data required validation sheet from the team (Expert and media experts), student response poll sheets and study results tests.

Technical data analysis to knowing data obtained analyzed and directed to answer the questions whether interactive learning media "Macromedia Flash" and instruments that are developed meet the criteria of validity and effectiveness of Or not. Data obtained from media experts and materials to answer the question of whether the interactive media "Macromedia Flash" developed can be said to be valid reviewed from a theoretical basis. While the trial data in the field (in Class) is used to answer whether the media developed is effective or not.

Result and Discussion

Development process

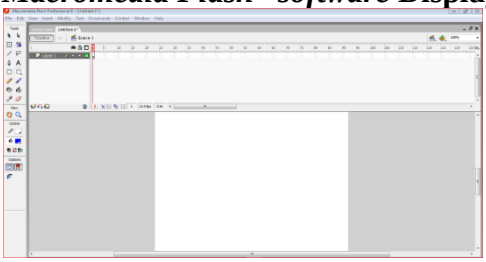
Description of Needs Analysis

This stage is conducted by researchers with observations to collect data and information by observing learning activities in the classroom to obtain student learning conditions. In addition to observation, researchers conducted alternative media analysis to be developed that can be used in SCIENCE learning, one of which is the interactive media "Macromedia Flash".

Interactive Media Design "Macromedia Flash"

Media developed in this research is the interactive media "Macromedia Flash". The objective of using this product is Grade IV students. Interactive Media "Macromedia Flash" is developed through the design stages, including: 1) The design of media development, the collection of theories, the collection of concepts on the subject of nature and changes in the form of objects based on KI and KD. 2) Selection of student activities and interests according to developed media. 3) The selection of suitable images is specific to the subject of nature and the form of change of objects. 4) Creation of storyboards and sotware setup for creating interactive media "Macromedia Flash". The display of such software is presented in the following image 1:

Drawings of the
"*Macromedia Flash*" *software* Display



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Interactive Media Design Validation "Macromedia Flash"

Instruments and data collection tools are used by researchers to collect information during media implementation in the form of Media validation poll, student response poll and test result learning against the use of Macromedia Flash media.

Produksi media interaktif "Macromedia Flash"

Assessment or validation is then done after the interactive media product "Macromedia Flash" is completed.

Field trials

Further trials are carried out in the learning activities. This is done to find out the student's response to the developed media. In addition, trials are conducted to determine the suitability and effectiveness of interactive media "Macromedia Flash" against its use in learning activities. To acquire data on field trials, researchers use student response polls and study results tests.

Test result study and student response poll is given after learning process done using interactive media "Macromedia Flash". The test category used in this case is a double-choice test with the number of questions 10 grains. For scoring on this test is the score of one (10) correct answer option and a score of zero (0) for the wrong answer.

This interactive media development research "Macromedia Flash" uses Borg development model & Gall Yaing simplified to 7 stages namely need analysis, design, design validation, production, field trial, product revision and utilization of Products. Before testing, the media was first validated by two experts, namely material experts and media experts. The validation result of the expert team is analyzed so that it is inserted into five-scale conversion formula. From the results of the analysis of data validation expert research materials acquire the actual score of 58 with an average of 3.8 being on the score range $51 < X \leq 63$ with the category "good". While media expert validation data with actual score 61 with an average of 4.0 interactive "Macromedia Flash" Meet the Criteria "good" which is in the score range $51 < X \leq 63$ shows that in terms of display of interactive media development products "Macromedia Flash "worth using.

As for the students ' responses in the learning process, using the "Macromedia Flash" interactive media can be found from field trial data using student response polls. The final result obtained by the data that 91.0% of students respond very well to the use of interactive media "Macromedia Flash". After seeing the student's response, researchers also saw student learning outcomes after using the interactive media "Macromedia Flash", which was developed by the classical student reach 84.2%, this shows that more students are complete than the incomplete.

Based on the criteria, the development of interactive media "Macromedia Flash" of the material experts and experts of the display experts have fulfilled good criteria, so it can be used for students of grade IV at Primary School 4 Selong. But even so undenied this development product has its shortcomings and limitations, both in its development that determine product eligibility standards only limited through the validation of material experts and media experts. While on its application, trials have not reached several schools and involve large numbers of students.

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Conclusion

From the results of the research and discussion in the previous chapter, can be concluded: 1) Research conducted is a development study done through 7 stages of development. The development stage in this study includes the need for analysis stage, design, design validation, production, field trials, revision and utilization of the product. 2) The product quality of the material and media expert validation results in the "good" category with each obtaining an actual score of 58 with an average of 3.8 by the material expert, as well as by the media experts acquired actual score 61 with an average of 4.0 by the media experts. 3) Product Eligibility Interactive Media "Macromedia Flash" for students Kleas IV Elementary School was reviewed after the study was conducted using the interactive media "Macromedia Flash". The student response to this medium is very high with a 91.0% component percentage that responds very well. Then based on data of learning outcomes, classify the average value obtained by 84.2 students with a classical dictancy of 84.2%. This percentage has reached the KKM (Minimal submission criteria) determined by the school that is 70. The interactive media products "Macromedia Flash" proved effective.

Recommendation

Based on the research conclusion, the researchers recommend the following suggestions: 1) Teacher is advised to utilize the excellence of Macromedia Flash Professional 8 software by developing other learning materials as a form of interactive learning media. 2) The products developed can be used as a source of student learning independently.

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