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Development of an Ethnographic-Based IPAS Learning Supplement Book on the Independent Curriculum for Elementary School

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ABSTRACT

The development of teaching materials is an important part of education, especially with current curriculum changes. Teaching materials are part of learning that teachers use to deliver learning material to suit learning objectives. This research aims to develop an ethnography-based supplement book product in the Independent Curriculum science and science learning to improve student learning outcomes on the influence of force on objects. This research was carried out in Class IV of an elementary school. This type of research is Research and Development (RnD) research using the ADDIE (Analysis, Design, Development, Implementation, Evaluation) development method. The sampling technique in research uses purposive sampling technique. The results of the validation instruments in the research included media expert validation showing 86.11%, language expert validation showing 97.2%, and material expert validation showing 96.16%. Based on the research results, there are differences in the learning outcomes before and after using the ethnography-based science and science learning supplement book. The ethnography-based science and science learning supplement book contains material on science and social studies in everyday life. So, it is hoped that the supplement book for science and science subjects based on ethnography can help class IV students understand the influence of forces in the environment on objects.

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A. INTRODUCTION

Education is an important part of introducing local wisdom into the learning process. With the development of scientific technology, there is a need for changes in curriculum development which have an impact on the development of teaching materials that can increase understanding of the learning environment (Mustoip, 2018),(Nugroho, 2022). Curriculum development results in changes to the teaching materials used(Row & Sathasivam, 2022). The curriculum that is currently used is an independent curriculum with a learning implementation plan that is replaced by a teaching module resulting in students experiencing difficulties in understanding the learning material. According to (Pradhana, A.W.A, Rofian, Mushafanah, 2022) students have difficulty understanding the material because the adaptation process is still short and they lack motivation

given by the teacher, The teacher is not ready to change teaching styles so they still tend to use the lecture method in the learning process.

The problem that is commonly experienced by teachers is the problem of learning outcomes that are less than optimal. This can be seen from the indicators of the duration of learning activities, the level of inspiration, skills, knowledge, and attitudes towards the objectives of the activities to be achieved. Teaching also needs to be improved and must include new forms of competency learning, so that students not only memorize, but can digest concepts through the use of technology and teaching materials (A. Syahid Robbani, 2021). Therefore the teacher's ability to motivate students can affect learning outcomes. besides that, the problem that arises is the lack of teacher preparation in designing and developing teaching materials related to the preparation of learning tools, this case the teacher needs to be supported by learning resources, references, and facilities that support students. Good learning resources can help students understand the content of the material in each lesson. In learning resources, especially the teaching materials used, the teacher should be able to provide instructions for use that are adapted to the learning objectives (Pranata et al., 2021).

Based on the results of observations made at SDN 2 Sengon,and SDN 1 Karanganyar, Trenggalek Regency, which were included in the driving school, it was found that combined science and social studies learning or what is called IPAS was implemented according to the program provided by the government and according to the latest curriculum for meet optimal learning outcomes. Social studies subjects aim to facilitate students in forming the character of citizens who are socially capable and have physical and social strength in carrying out their own lives (Sulfemi, 2018), while science subjects are implemented as skills in helping students grow the ability to think, be scientific and work continuously and communicate in the form of important aspects of life skills (Widiana, G. & Wardani, I., 2017). The learning that is carried out in the latest curriculum gives more problems forstudents to solve in groups to encourage students to add skills and explore information as a source of knowledge gain. In addition, in the interview session at school, the researcher received information that science learning is an alternative in encouraging efforts to improve learning outcomes so that students get support from the sources of learning materials used, literacy as habituation, parental supervision, and support to optimize fun learning. In this case, Science is a learning activity that includes basic knowledge of the 21st century with critical and creative thinking skills (Febrianti et al., 2022).

The science learning process requires sufficient time for students to apply it in the form of practical material provided by the teacher. Students must have initiative, discipline, responsibility, confidence, motivation for independent learning, and the ability to think critically about the problems presented (Siritheeratharadol et al., 2023). The material used is the effect of force on objects in class IV sub-chapter utilizing style to help humans overcome challenges in everyday life which make students experience difficulties due to the lack of development of ethnographic-based teaching materials based on student experience, in the learning process a supplementary book is needed assist in explaining the material in detail, interesting and effective in completing the lack of material from the main book. The existence of teaching material supplement books in the form of complementary books for the learning process used by teachers and students can provide material reinforcement according to the needs and problems faced by teachers to find sources of teaching materials used from the environment around the school (Nugroho et al., 2021). If the main teaching material sources available do not meet learning needs, then further development can be carried out. One of these developments can be realized in the form of teaching material supplements.

The ethnographic-based science learning supplement book itself is still being developed because the implementation of the Merdeka curriculum has just started in the new 2022/2023 school year. The education curriculum often experiences changes and updates (Setiawan et al., 2023). The term ethnography comes from the word ethnos which means tribe and graphein/graphic which means picture or painting. So, ethnography is a description of an ethnic group or society (Abdussamad, 2021) (Abduh et al., 2023). The development of ethnographic-based teaching materials is the preparation of teaching materials in which a cultural work is described by a group of socially good people who are integrated with social and environmental interactions (Sari.et.al, 2023). In this case, ethnography is one of the applied research methods in finding sociocultural relevance by exploring models of everyday life and the interactions of certain socio-cultural groups (cultural divisions) in a particular space or context (Abdussamad, 2021).

One of the needs for supplemental teaching materials is to overcome the problems commonly experienced by teachers, namely the problem of learning outcomes that are less than optimal. This can be seen from indicators of the length of learning activities, level of inspiration, skills, knowledge and attitudes towards the activity goals to be achieved (Yasin et al., 2023). Ethnography-based supplement books contain social and cultural-cultural, researchers are interested in developing supplement books considering the problems above including the lack of learning reference sources that use only worksheet books. Ernography-based supplementary books contain social, environmental, and cultural aspects that are integrated with the environment around the student's school. Social aspects about society and the need for communication. Judging from the meaning of society, then social means everything related to it together with the system of life or life in the community of a person or group of people with structure, organization to life values to achieve certain goals. (Yanuarita & Haryati, 2021). Meanwhile, culture is a habit, an attitude that appears in humans whose use is as a reciprocal relationship with nature, their living environment, which includes everything from creativity, taste, intention, and work, both viewed physically in the form of material, psychological, and spiritual. (Yanuarita & Haryati, 2021). From this understanding, it can be concluded that social culture is everything that is created by humans with all the their thoughts, and consciences in living in society. Or, it can also be said that socio-culture is a way of life in society.

This ethnographic-based science learning supplement book is very helpful for students in understanding material about the effect of force on objects around their environment. In the development of this supplementary book, there is socio-cultural diversity in the style material around us in chapter 4 which is about the diversity of traits and personalities of each individual. Therefore, an attitude of mutual respect for each other must be developed so that social interactions can run well and make the school environment comfortable. Differences in nature and character can be complementary strengths. In developing complementary books using the Canva application. By using this method, the process of developing science learning supplement books is ethnographic-based.

Based on the problems discussed above, the researcher developed an ethnographic-based supplementary book, With the development of an ethnographic-based science learning supplement book, it is hoped that it will be able to complement the main book in improving learning outcomes in science subjects effectively for students and getting to know the potential of the surrounding environment in effective learning. contextual by existing local wisdom, especially in grade IV elementary school.

B. METHODS

This fourth-gradeThe research was conducted on science subjects. The research was carried out in the even semester of 2022/2023. The object of research is printed teaching materials in the form of supplementary science learning books. The subjects in this research were elementary school students with a total of 33 grade IV students from Sengon 2 State Elementary School and Karanganayar 1 State Elementary School. At state elementary school 2 Sengon there were 13 students and at state elementary school 1 Karanganyar there were 20 students. The reason researchers chose to use the ADDIE development method is because this development model has the advantage of sequential and systematic stages and is very suitable for product development. (Zulkarnaini et al., 2022). The ADDIE model is a learning model that is very appropriate for use in the classroom because when it is used in learning, the stages of the ADDIE model are sequential but interactive, where the results of the evaluation of each stage can lead to the development of learning at the previous stage. The design development carried out is as shown in Figure 1.

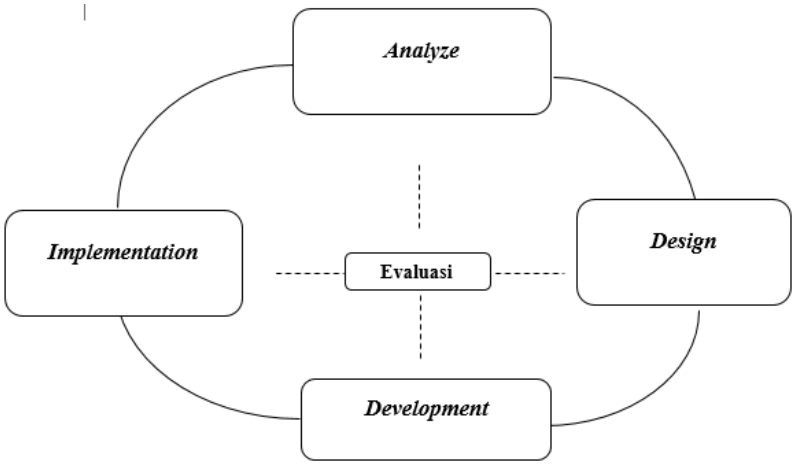

Figure 1. ADDIE Development Model

1. Analysis Stage

The analysis stage is the stage of identifying problems that exist in the school environment, including curriculum analysis, student characteristics, and material analysis. Curriculum analysis was carried out by identifying the school curriculum with basic knowledge and the goals to be achieved in the science and learning activities of material descriptions for fourth-grade and fourth-grade elementary school students. Characteristics of students were analyzed by identifying the needs problems and for students, aspects of knowledge.

2. Design Stage

This stage includes supplementary book schemes, form schemes, material validation and media schemes, and student and teacher questionnaires. The supplement book scheme is carried out with the material design and product appearance developed. The validation form scheme that is applied compiles the assessment indicators given to the validation lecturer to find out about the validity of the supplementary book being developed. A questionnaire scheme was also carried out to develop evaluation indicators given to find out students and teachers on the practicality of the supplementary books that were developed.

3. Development Stage

This stage includes making a supplement book product and following validation. The development of additional books, of course, with the competencies and goals to be achieved in the description of writing materials for students in class IV of elementary school. The validation testst carried out twice, which includes media and material validation tests by submitting a validation form that is ready for the validator lecturer so that an assessment is given to determine the feasibility of the product to be developed. Experiments can be carried out from small-scale test trials.

4. Implementation Stage

This research is in the development stage for product testing for fourth-grade and fourth-grade elementary school students. The large-scale trial phase was carried out at two elementary schools, namely Sengon Elementary School and Karanganyar Elementary School, while the small group test was carried out at Suhur Elementary School in Trenggalek Regency. so the focus of the field test was on two schools. The total number of students studied by researchers was 33 students. At this stage, the researcher gave a questionnaire to the students to fill out or answer which was then to see the students' responses after using the supplement book. Furthermore, at the large-scale field test stage, a questionnaire was given to determine the achievement of students after using ethnographic-based supplementary books.

5. Evaluation Stage

At this stage, the researcher conducted an effectiveness test. The purpose of testing the effectiveness of products developed is to test the effectiveness of the learning process. In carrying out this effectiveness test, namely by looking at the assessment questionnaire sheet which aims to determine the success rate of applying ethnographic-based science learning supplement books to find out the differences before and after using ethnography-based science learning supplement books. Assessment evaluation with the teacher's response questionnaire sheet and student response questionnaire sheet. Different tests using the help of the SPSS 21.0. Analysis of the data obtained from the results of media, material, and language validation, then analyzed using quantitative data to determine the feasibility and effectiveness of learning using supplementary books which can be measured using a Likert scale rating score can be seen in the following Table 1.

Table 1. Data Analysis Scores

No.	Score	Information
1	4	Very good/ very agree/ very positive/ very appropriate/very useful/ very effective/very efficient
2	3	Good/ agree/ positive/ proper/ useful/ effective/ efficient
3	2	Undecided/sometimes/neutral/good enough/fairly appropriate/interesting enough/reasonable enough/fairly useful
4	1	Disagree/rarely /negative/disagree/less good/less attractive/less feasible/less effective/less efficient

Source : (Sugiyono, 2019)

The expert validation questionnaire test with the validator is carried out by comparing the total score of the respondents with the total ideal score. The formula is as follows.

$$p = \frac{\Sigma R}{N} \times 100\%$$

The validation criteria used in the validity of media research, materials, and supplement book videos are presented in Table 2.

Table 2. Validation Criteria

No.	Percentage Score(%)	Validation Criteria	Information
1.	80% - 100%	Very valid	It very and Valid, can be used without repair Fairly
2.	60% - 80%	Fairly valid	Fairly valid, andusable but needs minor improvements
3.	40% - 60%	Invalid	Invalid, needs major improvement
4.	20% - 40%	Invalid	Invalid, unusable Totally

Source: (Akbar, 2013)

C. RESULT AND DISCUSSION

The research results in the ADDIE development model include Analysis, Design, Development, Implementation, evaluation as follows.

1. Analysis

Based on field studies and interviews with elementary school teachers, it shows that there are no supplement books that support students' learning of material in natural science and social science subjects in elementary schools. The interview results also showed low student scores in natural science and social science subjects as well as low student understanding of the environment and local wisdom in elementary schools. So there is a need for ethnography-based supplement books to support learning and introduce students to culture.

2. Design

Expert validation is carried out by providing book supplement teaching material media to 3 validators who are experts in their fields, namely linguists, material experts, and media experts (Febrianti et al., 2022). In the analysis phase, interviews were conducted with teacher informants from 3 different schools. The conclusion from the interview results is that learning outcomes are still relatively low, media development in the form of supplementary books is not yet available in elementary schools, and there are no complementary books or teaching materials for students. Based on these problems, researchers will develop an ethnographic-based science learning supplement book for chapters. While the material in the book supplement also needs to contain instructional material, it is recommended that it be included in many subjects, especially in science (Yu & Sumayao, 2022).

Drawing sketches are arranged according to the storyline and material in the book Supplements made using the Canva application. Next is material that has been edited and sorted then printed and printed using A3 glossy paper is bound and then cut to A4 book size. Material

the various styles and influences obtained by reference researchers from the internet and science learning teacher books.

3. Development

The third stage of the ADDIE model is the development stage. At this stage, researchers carry out media development according to the design in stages design, namely an ethnographic-based supplementary book. In this step, the researcher chooses Power point, teaching materials, and science teacher books that will be integrated into an ethnographic-based supplementary book. The material in the form of text is the about influences muscle force, pushing force, tensile force, magnetic force, spring force, and gravitational force in everyday life.

After the media was developed, the researcher validated it media to media, material, and language experts. After the researcher finishes finished product, then the next stage is the teacher response questionnaire and expert practitioners. Validation of results in these media shows the percentage of 86.11%. The results of the material vialidation show a percentage of 96.15%. The results of the language validation show a percentage of 97.2%, Results of teacher response questionnaire validation showed a percentage of 88.8%, and practitioners show a percentage of 88.3%. At this stage, the researcher conducted a product trial small scale. In a small-scale trial conducted on 10 students who conducted at SDN 2 Sengon. The following is the summary data from the validation results of material experts, linguists, and media experts, as shown in Table 3.

Table 3. Validation results

Validation results	Score	criteria
Validation results by material experts Aspect	86,11%	Very Valid
Validation results by linguists	97,2%	
Validation results by media experts	86,11%	
Average	93,54%	

4. Implementation

The fourth stage of the ADDIE model is implementation. At this stage, the researcher is testing field-scale products. While field-scale trials were conducted on 33 students consisting of the control class and the experimental class. The field-scale test in Sengon 2 state elementary school and Karangayars 1 state elementary school.

5. Evaluation

At the last stage of this evaluation, the researcher tested the effectiveness by looking Student response questionnaire sheet which aims to determine the level successful application of ethnographic-based science science learning supplement books to find out the difference before and after the use of supplement books on ethnographic-based science learning. Test the difference using the help of the program SPSS 21.0. The average difference test is also known as the t-test. Concept of test The average difference is comparing the average value along with the confidence interval certain (confidence interval) of two populations. There are 2 ways to determine the test The difference is the paired sample t-test and the independent sample t-test. Paired test sample t-test is a method of analyzing differences to find out whether there is the difference in the means of 2 paired samples. Independent sample t-test is difference test analysis method to determine the significant average difference between 2 samples free or unpaired.

The product validation stage is the stage of evaluating supplementary books by media, material, and language validators. At this stage there is also a product revision to obtain input from several validators to obtain improvements to the ethnographic-based science learning supplement book. The purpose of validation is to check the correctness of the material, appropriate grammar, and the effectiveness of supplementary books in achieving the learning objectives targeted in the media. The results of the validation instruments in the study included media expert validation showing 86.11%, linguist validation showing 97.2%, and material expert validation validation showing 96.16%. Suggestions and comments provided by several validators were used to improve the ethnographic-based science learning supplement book that was developed, as shown in Table 4.

Table 4. Results *Pre-Test/Post-Test*

Criteria	Formula	Rentan score	Frequency	Percentage
High	M + 1 SD ≤ X 70,5 +6,16 ≤ X	76,6 ≤ X	3	30
Medium	M – 1 SD ≤ X < M + 1 SD 70,5 – 6,16 ≤ X < 70,5 + 6,16	64,34≤ X < 76,6	3	30
Low	X< M – 1 SD X< 70,5 – 6,16	X < 63,5	4	40
Total			10	100

Based on Table 4 the results of the data obtained are known to be categories Pre-test and post-test control class students get high category 3 students (30%), medium category 3 students (30%), and low category 4 students (40%). The vulnerable score in the high category of more than 76.6, the vulnerable score in the moderate category, namely 64.34 -76.6, and the rendang category is less than 63.5. The results of this research are in line with the results of previous research conducted by (Nugroho et al. 2021) with product effectiveness test results showing that student learning outcomes had increased with an average score of 83.77. Furthermore, research conducted by (Supriyatin et al., 2020). shows that using supplement books can improve students' ability to solve problems.

D. CONCLUSION AND SUGGESTIONS

The design for the development of an ethnographic-based science learning supplement book using the ADDIE Analysis, Design, Development, Implementation, and Evaluation model). The analysis phase in the development of the supplementary book includes an analysis of the initial conditions, analysis of learning materials,and an analysis of the environment at SDN 2 Suruh, SDN 1 Karanganyar, and SDN 2 Sengon. Furthermore, the design stage is the design of supplementary book schemes, media validation schemes, languages, and materials for muscle validators. Third, the development stage of making a product and following validation with media, lan,guage, and material validators. Implement stages at this stage,ge what is done is product testing. In the first product test, a small-scale test was carried out with 10 students at SDN 2 Suruh, and a field-scale test was carried out at SDN 1 Karanganyar and SDN 2 Sengon with a total of 33 students. The last evaluation was at this stage the assessment of student response questionnaires, the total percentage of scores was 89.58%, the teacher response questionnaire, the total percentage score was 88.88%, and expert practitioners were 83.33%. This is determined by validating the product and testing it, namely: validating media experts, materials, language, learning evaluation,

practitioners, student response questionnaires, ires, and pre-tests and post-tests. The results of the validation instruments in the study included media expert validation showing 86.11%, linguist validation showing 97.2%, and mate expert validation showing 96.16%. The material in the form of an ethnography-based learning supplement book is expected to help teachers improve student learning outcomes and provide students with an understanding of the social environment. Suggestions for future researchers can be developed using ethnography-based science and science learning supplement books to increase students' understanding of the environment.

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