Development of Independent Curriculum IPAS Teaching Materials Using a Project-Based Learning Approach Assisted with the Kvisoft Flipbook Maker Application to Increase the Learning Motivation of Class IV Primary School Students

Nurhidayati[1*], Firman[1], Yeni Erita[1], Daharnis[1]

[1]Universitas Negeri Padang, Padang, Indonesia

Abstract: This research aims to develop IPAS teaching materials using a Project Learning approach assisted by the Kvisoft Flipbook Maker application to increase the learning motivation of fourth-grade elementary school students. This type of research is Research and Development (R&D) research using a 4-D development model consisting of four stages: analysis, design, development, and implementation. The media developed is science and technology teaching materials using a Project Learning approach assisted by the Kvisoft Flipbook Maker application to increase the learning motivation of fourth-grade elementary school students. The results of the research show that: the validity test of IPAS teaching materials obtained an overall validity value of 91.80 % in the very valid category; The teacher's practicality results were 93.30 % in the convenient category and the students' practicality results obtained a percentage of 93.50 % in the convenient category; the effectiveness used in increasing the learning motivation of fourth-grade elementary school students received an N-gain value of 0.73 in the high category. From the results of this research, it can be concluded that the IPAS teaching materials using the Project Based Learning approach assisted by the Kvisoft Flipbook Maker application to increase the learning motivation of fourth-grade elementary school students are valid, practical and effective and can increase the learning motivation of fourth-grade elementary school students.

Keywords: Learning Motivation; Science; Teaching Materials

Introduction

The government has made various efforts to improve the quality of education in Indonesia, including the government has allocated an education budget to the Ministry of Education and Culture of 20% of the total state revenue and expenditure budget (Sulasmi et al., 2023). This large budget allocation is prioritized to improve access, quality, relevance, and competitiveness of education through improving and equalizing educational services throughout Indonesia. Apart from that, the form of effort made by the government to improve the quality of education is to update the curriculum (Isadaud et al., 2022). Curriculum changes made by the government aim to improve the previous curriculum. At the primary and secondary school levels, the Independent Curriculum has been implemented since mid-2021 until now. The Independent Curriculum gives students and teachers the freedom to choose the most appropriate method according to their students' needs.

Apart from that, the Merdeka Curriculum also emphasizes developing student competencies with a more inclusive and creative approach. The Merdeka Curriculum is designed to answer the challenges of a technology-oriented era so that students are ready to face the digital era (Adrias et al., 2023; Fischer et al., 2023). However, the government's efforts to implement the Independent Curriculum have not achieved maximum results (Putri & Kalstum, 2022). The reality shows that there is still a lot of learning carried out teacher-centered (Markula & Aksela, 2022). Apart from that, the use of technology in the learning process has not been applied optimally (Sudarsana, Mulyaningsih, et al., 2019; Sudarsana, Nakayanti, et al., 2019; Akram et al., 2022). According to research conducted by Putri & Riastini (2024), the problem with implementing the Independent Curriculum is limited references (Nurfadila et al., 2023; Rizky Fadhilah et al., 2022). Teachers have difficulty finding references, designing and implementing independent learning, teachers still use lecture or assignment learning methods so learning tends to be monotonous, and teachers are constrained by teaching materials from the center. which is still limited.

Apart from that, teachers experience difficulties in the evaluation (assessment) process and learning facilities and resources are not yet complete and adequate. Problems with implementing the independent learning curriculum also occurred at SDN 16 Air Batumbuk and SDN 15 Batang Barus. Based on the results of interviews and observations conducted from March 1 to March 15, 2021, it was seen that when the teacher explained the lesson, several students often came in and out of class. Students also often look for other activities such as disturbing friends who are studying (Marshall, 2017; Dwivedi et al., 2023). When the teacher gives assignments, students cannot do the assignments according to the time limit determined by the teacher, but students need a very long time to do the assignments, there are even students who do not do the assignments given by the teacher (Negru & Sava, 2023; Graham et al., 2023). Starting from this, it can be seen that learning problems originate from learning motivation.

Apart from that, Kvisoft Flipbook Maker can also create PDF files like magazines, digital magazines, flipbooks, company catalogs, digital catalogs, and so on (Kharisna & Risda, 2023; Riyadi et al., 2018). The advantages of this application are: it can provide a flip effect module or pages that can be flipped; creating modules with this application is very easy; the module display is not only in the form of text and images, but audio and video can also be combined in presenting the material; the resulting product can be published in SWF (Shock Wave Flash), HTML (Hyper Text Markup Language) format if it is to be published via a website (Zheng et al., 2022; Pikoli & Lukum, 2021). Based on the above background, research was conducted that aimed to develop IPAS teaching materials using a Project Learning approach assisted by the Kvisoft Flipbook Maker application to increase the learning motivation of fourth-grade elementary school students.

Method

The type of research carried out is research and development (R&D). According to Snyder (2019), explains that research and development is a research method used to produce certain products, and test the effectiveness of these products. The development model used is the 4D model approach, with this approach consisting of 4 development stages, namely: Define, Design, Development (development), and Dissemination (Figure 1).

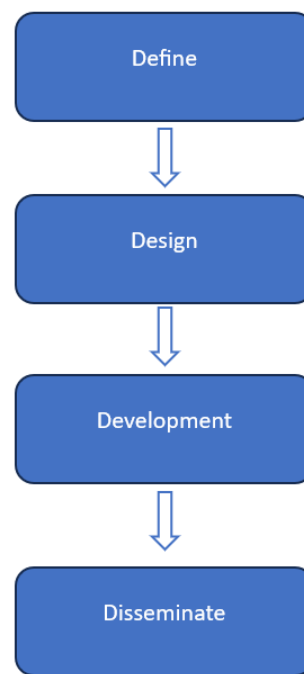**Figure 1.** 4d model development stages

Result and Discussion

Validity

Before testing, the product being developed is validated by expert experts first. The validation sheet is used to find out whether the teaching materials that have been designed are valid or not. Each aspect is developed into several statements. The following are the results of validation by content, language, and appearance experts.

Based on the table 1, it can be explained that the percentage of validity of IPAS teaching materials is 91.8 % with a very valid category. This shows that the IPAS teaching materials using the Project Learning approach assisted by the Kvisoft Flipbook Maker application to increase the learning motivation of fourth-grade elementary school students are very valid for use by teachers as teaching materials.

Table 1. Results of Validation of Teaching Materials by Validators

Expert Lecturer	Scores %	Criteria
Material Expert 1	94	Very Valid
Material Expert 2	94	Very Valid
Material Expert 3 (Teacher)	93	Very Valid
Graphics	81	Valid
Linguist	96	Very Valid
Amount	458	
Average	91.80	Very Valid

Practicality

Practicality testing is carried out after testing the product being developed. The instrument that researchers used was in the form of a questionnaire. The practicality of IPAS teaching materials using the Project Based Learning approach assisted by the Kvisoft Flipbook Maker application for grade IV elementary school students which was developed can be seen from the results of the practicality analysis by teachers and students:

Teacher Practicality Test

Practicality test data for IPAS teaching materials using a Project Learning approach assisted by the Kvisoft Flipbook Maker application for grade IV elementary school students came from teachers at SDN 15 Batang Barus, teachers at SDN 16 Air Batumbuk and teachers at SDN 32 Air Batumbuk. The following is Table 2 practicality test results of teaching materials by teachers.

Table 2. Results of Practicality of Teaching Materials by Teachers

Assessment Aspects	Score	Percentage %
Practicality of presentation	23	
Practicality of use	66	93.30
Time Practicality	23	

Based on the table 2, it can be explained that the percentage of science teaching materials by teachers is 93.3 % in the very practical category. This shows that the IPAS teaching materials using the Project Learning approach assisted by the Kvisoft Flipbook Maker application to increase the learning motivation of fourth-

grade elementary school students are very practical for teachers to use as teaching materials:

Student Practicality Test

Apart from teachers, practical tests are also carried out on students. Practicality data was obtained using a practicality test questionnaire which is briefly shown in table 3.

Table 3. Results of Practicality of Teaching Materials by Students

School	Scores %	Criteria
SDN 15 Batang Barus	92.30	Very Practical
SDN 16 Air Batumbuk	95	Very Practical
SDN 32 Air Batumbuk	93.10	Very Practical
Amount	280.40	
Average	93.50	Very Practical

Based on the table 3, you can see the response results from 61 class IV students at SDN 15 Batang Barus, SDN 16 Air Batumbuk, and SDN 32 Air Batumbuk to the IPAS teaching materials with an average practicality of teaching materials of 93.5% and the Very Practical category:

Effectiveness

The results of the effectiveness of learning motivation were obtained by providing pre-test and post-test learning motivation instruments before and after using science material for class IV elementary school. The variables seen from students' learning motivation are Preparation for learning, Implementation of learning, Commitment, Initiative, Tenacity in facing difficulties, and Optimism. The results of the learning motivation instrument can be seen in Table 4.

Table 4. Analysis of Increasing Learning Motivation

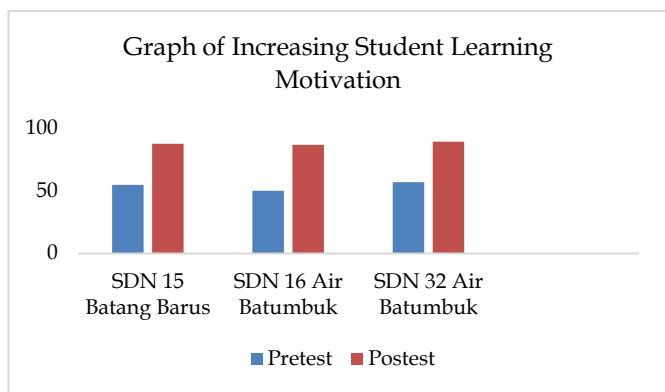| School	Effectiveness Analysis	Amount	Average%
SDN 15 Batang Barus	Pretest	2419	54.85
	Posttest	3850	87.52
SDN 16 Air Batumbuk	Pretest	2105	50.12
	Posttest	3634	86.52
SDN 32 Air Batumbuk	Pretest	2387	56.83
	Posttest	3733	88.88
Pretest Average			53.93
Posttest Average			87.64

Figure 2. Graph of increasing student learning motivation

From the results of the analysis of increasing student learning motivation, the pre-test questions got an average of 53.93 %, while the post-test questions got an average of 87.64%. Thus, there is an increase in learning motivation by 33.71 %. Learning motivation is the driving force within an individual to carry out learning activities to increase knowledge, skills, and experience. Learning motivation is very important for students and teachers to have and understand (Riyadi & Sudiyatno, 2023). Success in the learning process is determined by the students themselves by motivating themselves so that no matter how difficult the learning is, students will be able to pass it so that students can achieve the desired grades (Pratama et al., 2019).

Motivation is very important in learning activities because having motivation will foster enthusiasm for learning and conversely, a lack of motivation will weaken enthusiasm for learning (Rahmi & Neviyarni, 2022). Motivation is an absolute requirement for learning; Students who are not motivated to learn (or lack motivation) will not achieve the greatest success (Hernadi et al., 2023). Motivation is an urge or stimulus within a person to carry out an activity, either originating from within the individual himself or from outside the individual (Urhahne & Wijnia, 2023). One way to support student learning motivation is interesting teaching materials. Teaching materials are all materials (whether information, tools, or texts) that are arranged systematically, which display a complete figure of competencies that will be mastered by students and used in the learning process with the aim of planning and reviewing learning implementation.

For example, textbooks, modules, handouts, worksheets, models or mockups, audio teaching materials, interactive teaching materials, and so on (Nababan et al., 2023). Teaching materials generally consist of knowledge, skills, and attitudes that students must learn to achieve predetermined competency standards. Teaching materials are part of learning resources (Wahyuningsih et al., 2021). The function of teaching materials according to Rahmani et al. (2021), is

as follows: Guidelines for teachers who will direct all their activities in the learning process, as well as being the substance of competencies that should be taught to students; Guidelines for students that will direct all their activities in the learning process, as well as the substance of competencies that they should learn or master; Evaluation tool for achievement or mastery of learning outcomes.

One learning approach that can increase student learning motivation is the Project Based Learning approach (Refmidawati & Megahati S, 2023; Faradiba P & Arsad Bahri, 2024; Sanjaya et al., 2022). The project-based learning model is innovative learning that is student-centered and determines the teacher as a motivator and facilitator, where students are allowed to work autonomously to construct their learning 1 (Manasikana et al., 2023; Nawangsari et al., 2022; Pirdaus, 2024). Project Based Learning learning steps include: determining basic questions; creating project designs; arranging scheduling; monitoring project progress; assessing results; experiencing evaluation (Guo et al., 2020; Almulla, 2020; Tafakur et al., 2023). The use of technology in learning is one way to answer the challenges of the times (Haleem et al., 2022; Sudarsana et al., 2019). One application that can be used in learning is Kvisoft Flipbook Maker. Kvisoft Flipbook Maker is a reliable software designed to convert PDF files into page-turning digital publications or digital books. This software can change the appearance of a PDF file to make it more attractive, like a book.

Conclusion

Based on the development of trial data for IPAS teaching materials using a Project Based Learning approach assisted by the Kvisoft Flipbook Maker application to increase the learning motivation of fourth-grade elementary school students, the following conclusions were obtained: The validity of science and science teaching materials using the Project Based Learning approach assisted by the Kvisoft Flipbook Maker application to increase the learning motivation of fourth-grade elementary school students which has been developed gets an average of 91.80% with a very valid category; The practicality of science and science teaching materials using a Project Based Learning approach assisted by the Kvisoft Flipbook Maker application to increase the learning motivation of fourth-grade elementary school students which has been developed received an average percentage of 93.30% by teachers and 93.50% by students in the very practical category. The effectiveness of science and technology teaching materials using the Project Learning approach assisted by the Kvisoft Flipbook Maker application to increase

the learning motivation of fourth-grade elementary school students with a percentage of 0.73 in the effective category. There was an increase in students' learning motivation towards science and science subjects in class IV elementary school by 33.71 %.

Author Contributions
Conceptualization, N.; methodology, F.; validation, Y. R.; formal analysis, D.; investigation, N.; resources, F.; data curation, Y. R.: writing—original draft preparation, N; writing—review and editing, F.: visualization, D. All authors have read and agreed to the published version of the manuscript.

Conflicts of Interest
The authors declare no conflict of interest.

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