

Feasibility Of The Integrated IT-Based Thematic Learning Model Method Of Utilizing The Surrounding Natural Environment (PLAS) To Improve Student Literacy

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Abstract.

The purpose of this study is to ascertain whether it is feasible to create a PLAS—an Integrated IT-Based Thematic Learning Model—to increase student literacy. A 4D development model from Thiagarajan was used as the research approach in this study. Ten elementary schools that are representative of the city of Medan's elementary schools are included in the study site. The following aspects of the data used in this study will be seen: (a) aspects of learning and content correctness were obtained from experts in learning materials; (b) learning models developed were obtained from experts in learning design; (c) literacy aspects were obtained from linguists; (d) quality of display and presentation of material obtained from individual trials., small group, and field; (e) Students' actions and reactions throughout the learning model trial are used to determine how appealing the learning model is. The construction of an integrated IT-based theme learning model leveraging the local natural environment was determined to be valid based on the study's findings, as evidenced by the results of material experts (92%), design experts (79%), and media experts (92%). As a result, the outcome of creating an integrated IT-based thematic learning model that makes use of the local natural environment is acknowledged as valid and is ready for student testing.

Keywords: Thematic Models, Environment-Based Learning, PLAS, Literacy.

Introduction

Today's technology advancement is reached its pinnacle; no one needs to leave the house to buy food, and there is no need to go outside to get primary or other essentials. By simply using his fingertips, he can give the poor what they need. The Covid 19 virus had an impact on the development of this research's concept, which led to an emphasis on online learning and the widespread use of existing technologies in education.

Low-quality learning is a result of technology-based learning's rigidity in the absence of learning innovation. With the help of an integrated IT-based thematic learning model called PLAS, this project aims to find a new paradigm for thematic learning

that will improve student literacy. This demonstrates the genuine value of the educational process in shaping students' attitudes about literacy from the outset.

An integrated learning model called "thematic learning" brings together methodologies and academic disciplines. Process This theme learning concept is put into practice by fusing different academic disciplines, creating characters with interconnected knowledge, skills, and abilities across various academic disciplines [1]. The emphasis in education today is also on developing literacy skills. A means to produce a future generation that is superior, dependable, and of noble character, which is the capital to tackle issues in the

future, is by improving literacy in students [2].

In reality, the 2013 curriculum mandates that teachers use theme learning models when instructing students. A topic is used as the subject of study in the thematic learning process, which enables students to actively explore, seek for, and discover scientific concepts in a comprehensive, meaningful, and authentic manner both individually and in small groups. Teachers may not always understand the thematic learning process, despite the fact that the government has been emphasizing this theme for a while. The learning process in PAB Elementary Schools is still conventional, for example, when it comes to the choice of methods or media that are inappropriate or do not meet the needs of the students.

The issues in this study are: (1) the inadequate capacity of teachers to design thematic learning processes in elementary schools; (2) the lack of prior development of thematic learning models based on IT and integrated methods of utilizing the natural environment that are able to improve students' literacy skills; and (3) the online learning process (using cellphones) having a detrimental effect on student development as well as the decline in students' literacy skills. A successful innovation is required to raise education standards while also allowing teachers to deploy a new learning paradigm in order to raise a generation of readers.

The design of the thematic learning is based on a particular theme. The topic is examined using content from several academic disciplines. Materials from several academic disciplines are blended into a theme [3]. By viewing everything as a whole or as a holistic unit, this is consistent with Piaget's developmental stage, which applies to kids between the ages of 7 and 15 (concrete operational) [4]. The use of thematic learning models in the classroom enables students to actively investigate and discover scientific concepts and principles in a comprehensive, meaningful, and authentic way, both individually and in groups. [5]

The use of thematic models has consequences for the development of creative and innovative learning and teaching scenarios, which will make teaching and learning activities more relevant and necessitate the involvement of teachers in the development of such a learning environment.

Teachers also need to understand how crucial it is to connect the curriculum and content in each class. In order to implement this theme learning, teachers must give students textbooks that tie one subject into other courses and into real-world situations. The durability of the learning process is positively impacted by both the availability of learning resources that are appropriate for the demands [6].

It is impossible to separate the construction of excellent learning from the choice of excellent learning material. The best learning materials available today are those that utilize technology. The use of applications as a method of the learning process is the current learning technology that plays a crucial part in the field of education.

IT-based learning resources include instructional materials in the form of information and communication technology that are used in the classroom. In other words, this media is a way of distributing information in the form of computer and telecommunications infrastructure, network systems, hardware, and software so that data may be distributed and accessed internationally [7].

The purpose of using IT-based media is to let pupils discover numerous concepts of subject matter that they were previously unaware of. It is anticipated that with the help of these technology-based learning resources, students' enthusiasm and interests would grow, enabling them to engage actively and creatively in their studies [8].

E-learning instruction in the form of an Android application is the type of IT used in this study. An educational system called Android-Based E-Learning makes use of digital programs to aid in teaching and learning. electronic learning According to this Android software, interaction between students and the curriculum, as well as between students and professors, is facilitated. This Android Application-Based E-learning makes it simple for students to exchange knowledge with one another and to access course materials repeatedly and at any time, which helps the learning process operate smoothly and boosts student motivation [9].

Distance learning is the term for the teaching and learning activities (KBM) that had to be delayed due to the pandemic and shifted to the student's home while still requiring teacher supervision [10]. The current educational process can be made more sustainable by making use of the natural

environment. Because the use of the surrounding natural environment connects fundamental concepts and their applications in daily life, using the natural environment as a means of learning resources and learning media is an alternate way to solve challenges for distance learning [11]. According to research findings, using the outdoors as a learning resource can make learning engaging and interesting so that students are inspired to participate [12]. This has a good effect on raising student learning outcomes.

Following the release of the Minister of Education and Culture's Decree Number 23 of 2015 about the Growth of Character, the literacy movement has currently become the guiding principle for the educational community. The Minister asserted that one can have a better, more fulfilling life by being proficient in literacy, including reading and writing [2]. Literacy is defined as the capacity to read, write, view, and design things along with critical thinking abilities that enable a person to communicate effectively and efficiently in order to give his or her environment meaning [13].

In essence, an excellent place to teach students reading is both the school environment and the home environment. Such that character should be interwoven into all classroom activities, including learning and habit-building ones. In order to actualize and establish a new culture in schools, literacy education is therefore seen as a collaborative endeavor between all school personnel and local people [14].

Methodology

The Thiagarajan 4-D development model is used in research and development (R&D) studies. The four steps of this development paradigm are defining, designing, developing, and spreading. Ten elementary schools that are representative of the city of Medan's elementary schools are included in the study site. The following are the sources of the data used in this study: (a) aspects of learning and content correctness were obtained from experts in learning materials; (b) learning models developed were obtained from experts in learning design; (c) literacy aspects were obtained from linguists; (d) quality of display and presentation of material was obtained from individual trials, small group, and field; and (e) the attractiveness of the learning

model is obtained from the activities and responses of the study participants.

Result

Analyzing the needs of students was the first step in putting the findings into practice. According to the findings of the survey that was sent out, all of the students said they had a real need for an integrated IT-based thematic learning approach. Since many lessons currently use thematic learning models, all of the teachers agreed that the development of the Integrated IT-Based Thematic Learning Model Method for Utilizing the Surrounding Natural Environment (PLAS) to Improve Student Literacy in Learning is urgently needed for the learning process to be more efficient and engaging.

The next step is to carry out a series of procedures for developing an Integrated IT-Based Thematic learning model, beginning with designing and developing an Integrated IT-Based Thematic learning model. This method is used to utilize the surrounding natural environment (PLAS) to improve student literacy. Various items were included in the Environment (PLAS) to Improve Student Literacy, which was created globally.

Your local area is the subject of the information supplied in the Integrated IT-Based Thematic Learning Model Method for Utilizing the Natural Environment (PLAS). The provided content is a learning aid that includes the key information that is generally relevant to daily tasks. Because each discussion about the content in the media is tailored to current events, each presentation of the topic is deeper than is customary and easier for students to understand. This is accomplished in addition to the media's use of appealing graphics and colors. In order to encourage students to uncover and express their creative ideas, share tactics and information, and provide students space, it is hoped that they would ask more questions to learn all the information pertinent to the subject matter in the area where I live. openly exchanging viewpoints on educational resources.

a. Data from Expert Validation of Learning Materials

IT-based product development models for thematic learning Table 1 displays the Integrated Method of Utilization of the Surrounding Natural

Environment (PLAS) material for the region where I reside and how its application has been verified by material specialists with quantitative data.

Table 1 Presentation of Validation Data for Material Experts

Components	Indicators	Validation	
		1	2
Aspects of Material Relevance	1. The suitability of the material with KD	3	4
	2. Clarity of the formulation of learning objectives	3	4
	3. The suitability of the material with indicators	4	4
	4. The suitability of the material with the learning objectives	3	4
	5. Conformity with the 2013 curriculum	4	4
Aspects of Organizing Material	6 Clarity of delivery of material	4	4
	7. Systematic of delivery of material	3	4
	8. Appropriateness of images in the explanation of material	3	4
	9. Accuracy of sequence of learning materials	3	4
	10. Usefulness of learning materials	3	4
	11. Appropriate level of difficulty and abstraction of concepts	2	3
Aspects of Evaluation/Practice Question	12. Clarity example	2	3
	13. Systematic delivery of material	3	4
	14. The truth of the answer key	3	4
	15. The clarity of the instructions for working	2	3
	16. The clarity of the formulation of the questions	3	4
	17. The truth of the concept of the questions	3	3
	18. The variety of questions	2	3
	19. The difficulty level of the questions	3	4
Aspects	20. The clarity of the discussion of the answers	3	4
	21. Appropriateness to the development of science	3	4
	22. Up-to-date features (examples)	3	4

Aspects of Effects on Learning	23. Encouraging students' curiosity	3	3
	24. Media support for student independence	3	4
	25. Media capabilities increase students' knowledge	3	4
	26. Ability of media in improving students' understanding	3	4
	27. Ability of media to increase student's motivation	3	4
	Total	81	97
	P	75%	9%
	Criterion	V	SV

According to operational word material expert, the media must be emphasized or sharpened and stated that this media is practicable to use. Based on validation by material expert validation 1 receives an assessment of 75% and after revision reaches 90% after adjusting to the table of eligibility criteria. use with a few adjustments. According to recommendations from material experts, the content is generally in line with the KD now in use. The concepts presented in the learning media are likewise excellent, but some sections might use improvement to better communicate the content's principles to students.

b. Data from the Validation of Learning Design Experts

Lecturers of the Postgraduate Program at the State University of Medan validated learning design specialists on the creation of the Integrated IT-Based Thematic learning model Method for Utilizing the Natural Environment (PLAS) in class V SD. Based on the evaluation of the creation of the Integrated IT-Based Thematic Learning Model Method of Utilization of the Natural Environment (PLAS) in class V, which takes into account aspects of

physical attractiveness, accuracy of use of design, conformity of format, presentation with target characteristics, clarity of media instructions, clarity of exposure the material, and suitability of the evaluation with the material, the table below can be viewed.

Table 2 Presentation of Validation Data for Learning Design Experts

Components	Indicators	Validation	
		1	2
Aspects of Material Concepts	Clarity of Basic Competencies 3.1. Social Studies	4	4
	Clarity of material with indicators	4	4
	Truth of material concept in terms of scientific aspects	3	4
Quality of Material Content	Accuracy of material	4	4
	Appropriateness of material	3	4
	Interesting of material	3	4
	Balance of material	3	4
	Attract students' attention	3	3
	Clarity of examples from each material	2	3
Aspects of Evaluation/Exercise Problem	Instructions for work are easy to understand, precise and clear	2	3
	The truth of the answer key	4	4
	Indicators of learning success	3	4
	Clarity in the formulation of practice questions	3	4
	The truth of the concept of quiz questions	4	4
	Difficulty level of questions	3	3
	Aspects	Sentences in the material are easy to understand	3
The language used is communicative		3	3
Aspects of Effects for Learning Strategies	Provide learning opportunities	3	4
	Providing assistance for learning	4	4
	Having an impact on increasing students' knowledge	4	4
	Having an impact on teachers and their learning	3	4
	Total	68	80
P	80%	91%	
Criterion	V	SV	

Conclusion from the results of the assessment by experts d learning design which includes aspects of attractiveness of physical appearance, accuracy of use of design, conformity of format, presentation with target characteristics, clarity of media instructions, clarity of material exposure, and conformity of evaluation with the material as a whole, it can be concluded that the level of score achievement is 80% at stages 1 and 91 % in stage II where the range is at the level of achieving a score of 85-100 categorized as "Very Good". Conclusion Based on the findings of the expert evaluation of the learning design, which considers factors like physical attractiveness, accuracy of use of design, conformity of format, presentation with target characteristics, clarity of media instructions, clarity of material exposure, and conformity of evaluation with the material as a whole, it can be said that the level of score achievement is 80% at stages 1 and 91% in stage II, where the range is at the lower end of the range. Numerous comments and suggestions were made in response to the assessment of the learning design for the creation of the Integrated IT-Based Thematic Learning Model Method for Utilizing the Natural

Environment (PLAS). cartoon. the analysis of the

c. Data on the Validation Results of Learning Media Experts The

A postgraduate lecturer at the State University of Medan validated learning media design specialists on the creation of the Integrated IT-Based Thematic Learning Model Method for Utilizing the Natural Environment (PLAS) on the material in the area where I reside in class V SD. The quality of the creation of the Integrated IT-Based Thematic Learning Model Method for Utilizing the Natural Environment (PLAS), which is evaluated from all aspects contained in the validation sheet of the Integrated IT-Based Thematic Learning Model Method for Utilizing the Surrounding Natural Environment (PLAS) for media design experts, is shown in table 4.4 below based on the assessment tool that has been given to the learning media design experts:

Table 3 Presentation of Validation Data for Learning media Experts

Components	Indicators	Validation	
		1	2
Language Aspects	Accuracy of using terms	3	4
	Language suitability with students' thinking level	3	4
	Ease understand the material through the use of language	2	3
Aspects of Effects Strategies Learning	Ability to encourage students' curiosity	3	4
	Media support for student independence	3	4
	Media ability to increase knowledge	3	4
	Media ability to improve student understanding	4	4
	The ability of the media to increase the motivation to learn students	3	3
Aspects	Creativity and innovation of learning media	4	4

Engineering Software of	Ease of touch and drag	4	4
	Easy operation of media	3	3
	Can be reused	4	4
	Can be managed/maintained easily	4	4
	Opportunities for media development for the development of science and technology	3	3
Aspects of Display Visual	Clarity in choosing color combinations	3	4
	Clarity in choosing type and size of letters	3	4
	Accuracy in font size for easy reading	3	4
	Appropriateness of attractiveness in image display	3	4
	Accuracy of button placement	3	3
	Design attractiveness	3	3
	Total	64	74
	P	80%	92.5%
	Criterion	V	SV

It is clear from Table 3 that 80% of the evaluation results, which take into account aspects of media display design, media programming design, and media content design as a whole, are at the level of achievement a. "Good" is defined as a score between 75 and 85, and "Media Design Expert Score 2" at a range of 92.5%.

The findings of the media design expert 1's evaluation of the design of educational media in the creation of educational media for Android-based digital books got a number of remarks, including: (a) the design is good, and the menu display is appropriate for the grade level of the users. Please adjust the animation because it is less beautiful (b), and use acceptable and real photos (c). (d) The media's design should be improved to better suit students' demands. thus it is proposed that all data from the results of media expert reviews are used as a basis for revising in order to improve learning media content before being tested

on students as users of development products. The conclusions from the assessments, comments and suggestions by learning design experts that the android-based digital pocket book learning media deserve to be tested in the field with revisions, and the results of the media design expert's assessment of the design of learning media in the development of android-based digital pocketbook learning media received several comments, including : (a) it is necessary to add a user guide, (b) a summary is placed on each sub-theme. The conclusion from the assessments, comments and suggestions by learning design experts is that the Android-based digital pocket book learning media deserves to be tested in the field with revisions.

Discussion

Experts in materials, design, and media evaluated the Environmental Utilization Method (PLAS) for validity in order to assess the viability of the Integrated IT-Based Thematic learning model. The

validation of the learning media takes the form of a quantitative descriptive assessment questionnaire that is disclosed in the score distributor and the rating scale category, where each expert provides an assessment of each indication listed on the sheet.

The validity that is tested at this level is theoretical validity, or validity with experts and professionals who are qualified in their disciplines based on theoretical and logical factors. The material, media, and design components of Android-based digital pocket books for learning will all be evaluated. It is necessary to validate the produced Android-based digital pocket book learning media to determine its viability before it can be used for educational purposes. The initial design of the Integrated IT-Based Thematic Learning Model for the Utilization of the Natural Environment (PLAS) was presented to learning design experts, material experts, and learning media experts during the validation stage in order to conduct an assessment using discussion techniques. In order to get the findings of theoretical validation, researchers also give validation sheets to validators. The experts evaluated the study in accordance with the validator sheet that the researcher had provided.

Based on the material experts' validation, it is known that the validation evaluation is 84.09% with legitimate criteria, but that the material experts still have room for improvement. The subject matter specialist advises editing straightforward words so that pupils can comprehend them. The percentage was changed to 92.11% validity using very acceptable standards. Additionally, the validator advises selecting materials that are acceptable for the given situation. The Android-based digital pocket book learning medium was improved in response to comments and ideas from the validator after consulting with subject matter experts.

It received various remarks, including: the design utilized is good; the menu display is also in accordance with the level of students who use it, and it received a feasibility score of 92.5% based on the validation of learning media specialists. It obtained an evaluation of 78.57% in the good category after being validated by learning design specialists based on the characteristics of content, presentation, display language, and content. The

validator indicated that to ensure that all pupils could see the text well, the color of the media used should be more diversified, and the size of the writing should be somewhat increased. It has been revised, and students may use it.

The percentage results of the media feasibility test on individual students were 81.67%, and in a small-scale trial with only 6 participants, the presentation results were 90.42% with a very good category and extremely feasible to use. The proposed IT-Based Thematic Learning Model Integrated Environmental Utilization Method (PLAS) is practical for application in social studies learning, according to the findings of a number of due diligence processes.

The Integrated IT-Based Thematic Learning Model Method for Utilizing the Surrounding Natural Environment (PLAS) developed is said to be valid and practical to use in learning based on the assessment given by the validator as well as the assessment given by students to the Environmental Utilization Method (PLAS) which was developed and provided by experts.

Conclusion

The conclusion in this study is based on the research data findings, and the methodical presentation is carried out by taking into account the established research objectives. Based on the results of the validity of the material experts, eligibility was determined with a percentage of 92.11%, feasibility was determined with a percentage of 92.5%, eligibility was determined with a percentage of 78.7%, and student responses regarding the viability of the media were determined with a percentage of 81.67% in small-scale trials involving 6 students and 90.42% in large-scale trials involving 27 people. The IT-Based Integrated Thematic Learning Model for the Utilization of the Natural Environment (PLAS) produced is included in the very good criteria and is practical to use, according to the data from the validation results.

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