



Integrated Thematic Learning Design Based on the School Environment to Develop Students' Creative and Critical Thinking

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ABSTRAK

Penelitian ini bertujuan untuk meningkatkan kemampuan guru dalam mendesain pembelajarannya sehingga akan berdampak pada tumbuhnya kemampuan berpikir kritis dan kreatif siswa. Untuk mencapai tujuan ini digunakan penelitian jenis Research and Development (R&D) yang terdiri dari studi pendahuluan; desain dan pengembangan model; dan pengujian model. Data dikumpulkan melalui wawancara, studi pustaka dan survei skala kecil. Penelitian ini melibatkan sejumlah 4 orang guru dan 102 siswa SD. Instrumen yang digunakan meliputi angket dan soal tes. Teknik analisis data menggunakan analisis deskriptif persentase dan kategoris. Hasil utama penelitian ini menunjukkan bahwa penerapan desain ini secara efektif dapat mengembangkan kemampuan berpikir kreatif dan kritis siswa. Melalui pendekatan tematik yang mengintegrasikan berbagai mata pelajaran dengan memanfaatkan lingkungan sekolah sebagai sumber belajar, siswa lebih terlibat secara aktif dalam proses pembelajaran. Implikasi penelitian ini menunjukkan bahwa penerapan pendekatan pembelajaran kontekstual dapat menjadi strategi efektif dalam pendidikan untuk mengembangkan kemampuan berpikir kritis dan kreatif siswa.

ABSTRACT

This research aims to improve teachers' abilities in designing their learning so that it will have an impact on the growth of students' critical and creative thinking abilities. To achieve this goal it is used research type Research and Development (R&D) which consists of a preliminary study; model design and development; and model testing. Data was collected through interviews, literature studies and small-scale surveys. This research involved 4 teachers and 102 elementary school students. The instruments used include questionnaires and test questions. Data analysis techniques use percentage and categorical descriptive analysis. Results The main research shows that implementing this design can effectively develop students' creative and critical thinking abilities. Through a thematic approach that integrates various subjects by utilizing the school environment as a learning resource, students are more actively involved in the learning process. The implications of this research show that applying a contextual learning approach can be an effective strategy in education to develop students' critical and creative thinking abilities.

1. INTRODUCTION

Learning problems in elementary schools which are carried out using an integrated thematic approach are caused by learning designs that do not activate students to learn to think, instead teachers are more dominant in learning. Observations during preliminary studies at SDN Salatiga 12 Salatiga City; Kalialang Elementary School, Kalibawang, Wonosobo Regency; SDN 2 Plosoharjo Grobogan Grobogan Regency; and SDN Pangkalan Pati Regency revealed: all respondents (100%) stated that the actual learning design (RPP) used refers to teacher books and student books; the majority of respondents (75%) stated that they had no experience in developing more integrated thematic lesson plans. creative based on the school environment; All respondents (100%) stated that they had never measured students' critical and creative thinking abilities using a skills measurement rubric.

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This phenomenon shows that teachers are less creative in designing learning so that it is less interesting and boring. Students are not given the opportunity to think critically to solve problems around them (Melindawati, 2016; Wahyuni, 2020). The impact will be a loss of student learning achievement. The Ministry of Education, Culture, Research and Technology conducted research with a sample of 3,391 elementary school students from 7 districts/cities in 4 provinces, in January 2020 and April 2021 with the finding that literacy skills experienced learning loss equivalent to 6 months of learning, and numeracy skills experienced learning loss equivalent to 5 months of learning. To overcome this learning loss, as well as welcoming the implementation of the 2022 curriculum prototype, teachers should design and implement creative learning, so that student competency can be achieved, and learning loss can be minimized. This problem is certainly a challenge for teachers and educational institutions (LPTK) to increase their competence and capacity so that LPTK graduate teachers are more creative so they can contribute to solving these problems. A survey of 38 teachers and 144 elementary school students found several problems related to learning at school. These problems include: the majority of teachers stated that they were more active than their students; As many as 79.2% of students stated that their teachers often taught using the lecture method, rather than teaching critical and creative thinking skills (Fitriani et al., 2021; Primayonita et al., 2020).

Various research findings regarding teacher creativity in designing learning are only in the categories of less creative and quite creative (Sumianto & I., 2020; Telembuana, 2020). This lack of teacher creativity has an impact on less than optimal achievement of learning objectives, especially competency in learning outcomes, critical and creative thinking skills. As we know, learning in elementary schools uses an integrated thematic approach (Amalia et al., 2019; Susilowati, 2021). This learning requires teacher creativity in integrating various elementary school subject content which includes Indonesian, Pancasila and Citizenship Education (PPKn), Mathematics, Natural Sciences (IPA) and Social Sciences (IPS). For creative teachers, learning design can provide opportunities for students to contribute in choosing and developing their own themes based on the context of where they live or school (Albertus & Rahayu, 2020; Fauziah & Fitria, 2019). In other words, teachers can be creative in designing integrated thematic learning design models based on their school environment to make it more meaningful. The meaningfulness of this learning is because students can explore their own information by actively building their own knowledge. Likewise, students individually and in groups can explore and understand concepts holistically (Amris & D., 2019; Darmawan & Wuryandani, 2021). Meaningful learning will produce real experiences for students and will foster critical and creative thinking abilities.

The integrated and thematic design model based on the school environment is a conceptual framework that describes systematic procedures in organizing learning experiences such as constructs, objectives and steps which in the context of the school environment are used as learning themes (Batubara & S., 2018; Darmawan & Wuryandani, 2021). It is clear that in building a model there are several aspects which will be explained below. Conceptually, integrated thematic learning is a learning model that uses themes to connect each subject content so that it can create meaningful learning experiences and stimulate students' critical and creative abilities. The systematic procedure of organizing learning experiences, in educational technology terms, is instructional design. This expression is a systematic development effort based on certain teaching and learning theories to ensure the quality of teaching and learning. Learning design based on the Indonesian Ministry of Education, Research and Technology using an integrated and thematic model has the following stages: theme selection; analyzing graduate competency standards, core competencies and basic competencies and creating indicators; mapping of basic competencies and indicators according to themes; creation of a basic competency network; Designing an integrated thematic syllabus; Learning planning. The context of the school environment is used as a teaching and learning theme so that teaching and learning is more meaningful for students because it uses real objects as learning objects (Fatchurrohman, 2020; R. Widyaningrum, 2021).

In the 2013 Curriculum thematic learning, themes and subthemes have been determined by the Government, so that to design learning with the environmental context as a theme, the subthemes are concretized into subthemes on each of the 1st to the 5th lessons (note: the 6th lesson evaluates the subthemes). By developing subthemes into subthemes or sub-subthemes, the thematic learning atmosphere is contextual and meaningful. The step of adding sub-sub themes was carried out to complete the teacher's book which does not invite students to solve problems that occur around them, thereby fostering critical and creative thinking skills (Fauziah & Fitria, 2019; Fitriani et al., 2021). The steps for adding sub-themes are somewhat different from Simanjuntak's writing which states that teachers do not need to add more themes because they have been determined by the government.

The components of critical and creative thinking skills as an impact of this alternative integrated thematic learning model are explained as follows. "Critical thinking is reasonable and reflective thinking that focuses on making decisions about what to believe or do." Critical thinking is a person's mental activity

in the form of a reasoning and reflection process in order to make decisions or solve problems (Hagi, 2018; Primayonita et al., 2020). There are 6 basic elements in critical thinking, with the acronym FRISCO, namely: F (Focus): focusing the questions or problems faced to make decisions about what is believed; R (Reason): knowing the reasons that support or reject decisions taken based on relevant situations and facts; I (Inference): making a reasonable or convincing conclusion. An important part of this inference step is identifying assumptions and finding solutions, reasoning from interpretations of situations and evidence; S (Situation): understand the situation and always remember the situation to help clarify questions (in F) and know the meaning of key terms, relevant supporting paragraphs; C (Clarity): explains the meaning or terms used; and O (Overview): thoroughly examine and examine the decisions taken. Creative thinking is the ability to discover new things that have never existed before, be original, develop new solutions for every problem, and involves the ability to generate new ideas, varied and unique. Creative thinking has 3 dimensions, namely the ability to generate several ideas or solutions (fluency), the number of different categories based on relevant responses (flexibility), the ability to generate new and original ideas (originality) (Primayonita et al., 2020; Trnova & Trna, 2020)

The differences and novelty of this research can be seen from similar research with previous research which shows that this model is feasible to apply; Previous research that revealed the development of a thematic model to foster critical thinking skills in elementary school students, it is known that this model is 95% valid, so it can be used in the teaching and learning process; Previous research findings regarding the development of integrated contextual thematic models in early childhood in kindergartens and play groups show an effectiveness level of $\geq 90\%$, students gave positive responses. It can be concluded that this model is feasible to apply; and other similar research findings reveal the development of internal and external integrative thematic models in Islamic-based basic education. The results show that teachers feel comfortable with the model and the evaluation results are good. Thus, this model is suitable for use (Fatchurrohman, 2015) (Munawaroh, 2014).

Previous research findings have several similarities with this research in terms of the development of thematic learning. Meanwhile, there are significant differences with this research in the specific variables, namely the school context and where students live which are sub-themes in learning. The aim of this action is to make the teaching and learning process more meaningful. This research is similar to Jamaluddin's research on integrated thematic and contextual learning models for early childhood in kindergarten and PAUD. The significant difference between this research and Jamaluddin's research is the addition of sub-themes. Another difference is that the participants were not young children but elementary school students with different cognitive levels. Based on the study above with existing teaching and learning models, the novelty of this research is that students are involved in choosing school environment sub-themes that will tie into meetings 1-6 in the teaching and learning process. The aim is to make the teaching and learning process more meaningful because it is in harmony with the students' real context. This kind of teaching and learning model is not found in government teacher and student books. In this research, the researcher named and developed meetings 1-6 which were previously unspecific and abstract to become more specific and concrete.

2. METHOD

This type of research uses research and development (R&D) which is part of the applied research approach. Referring to Sukmadinata which adopted the Gall, Gall & Borg model, the research procedures include: preliminary study; model design and development; and model testing (Hidayat et al., 2020; Sukmadinata, 2017). Data sources, data collection instruments, and analysis techniques at each stage or research procedure are described below. At the preliminary study stage, data sources were obtained from reference books, RPP documents, and 4 teachers at SDN Salatiga 12 Salatiga City; Kalialang Elementary School, Kalibawang, Wonosobo Regency; SDN 2 Plosoharjo Grobogan Grobogan Regency; and Pangkalan Elementary School, Pati Regency. Data collection instruments used literature studies and interview guides. A literature study was conducted to examine the nature of R&D research, integrated thematic learning models, and the concept of students' critical and creative thinking abilities. A small-scale survey through interviews was conducted to obtain data regarding actual learning design models (syllabus and lesson plans, teacher books and student books), problems that arise in designing and implementing learning, as well as learning model needs. The analysis technique uses percentage and gap analysis techniques to determine the need for developing learning models.

The design and model development stage was carried out to develop a blueprint for a contextual integrated thematic learning design model. At this stage, a contextual integrated thematic learning design model framework is developed which consists of a formulation of competencies and indicators to be developed, as well as learning materials. All these designs are outlined in the form of a syllabus and RPP.

Next, a preliminary design model is developed. At this stage, an initial model is developed which is equipped with a teacher's guidebook and student books based on the needs that have been inventoried. The output is a model design, which is then carried out with model validation tests. Validation involved 5 validators consisting of 3 experts from universities and 2 practitioners. Data analysis techniques use percentage and categorical analysis techniques.

This limited and extensive field test involved teachers and students in Salatiga City, Wonosobo Regency, Grobogan Regency and Pati Regency, totaling 4 teachers and 102 students. The research instrument uses a rubric for measuring critical and creative thinking skills which is integrated in the Student Worksheet (LKPD) which was adapted from the rubric developed (Handayani & Muhammadiyah, 2019; Hasibuan et al., 2020). The instrument grid is presented in Table 1, and Table 2. The instrument has been tested empirically and analyzed using SPSS, obtaining Cronbach's Alpha reliability data of 0.851 and 0.788. The level of instrument validity coefficient seen from the Corrected Item-Total Correlation figure moves between 0.547 to 0.741 and 0.298 to 0.693. The level of reliability and validity of these two instruments shows the reliable and valid categories so that they can be used for data collection in the field. The Critical Thinking Ability Measurement Instrument Grid is presented in Table 1.

Table 1. Grid of Critical Thinking Ability Measurement Instruments

Aspect	Indicator	Item Number
Focus	All concepts are correct, clear and specific	1
Supporting reasons and reasoning	All answer descriptions are correct, clear and specific and supported by strong reasons.	2
Organization	Good flow of thinking, all concepts are interconnected and integrated	3
Convention	The grammar is good and correct	4
Integration	All aspects are visible, the evidence is good and balanced	5

Table 2. Instrument grid for measuring Creative Thinking Ability

Aspect	Indicator	Item Number
Curiosity	I am interested in new elements and ideas and actively seek them out	1
Flexibility	I adapt well to new situations and can see many possibilities in everyday learning	2
Authenticity	I can come up with lots of new ideas and products on most topics, and can make something new happen.	3

In the broad test, the type of testing uses the Stringer model of collaborative action research approach (Trnova & Trna, 2020; Zubaidah, 2020). Stringer's action research model consists of the Look, Think and Act stages. At the Look stage, relevant information is collected, as well as a description of the initial conditions before action is taken. In the Think stage, exploration and analysis of what was found in the previous stage is carried out. At the Act stage, action planning, action implementation and evaluation are carried out. The research instrument uses a rubric to measure critical and creative thinking abilities. The data analysis technique uses percentage and categorical descriptive analysis techniques. The collected data is arranged in the form of a frequency distribution table and categorized into categories: (1) very low (1% - 20%); (2) low (21%-40%); (3) sufficient (41%-60%); (4) high (61%-80%); (5) very high (81%-100%).

3. RESULT AND DISCUSSION

Result

The results of the preliminary study show that the development of a thematic learning design model is integrated with the school environment sub-theme and the theoretical orientation of model development. The research steps are a preliminary study; model design and development; model testing. An integrated thematic learning model based on the characteristics of elementary school students has been carried out as follows in the Webbed Model. Below is an example Integration of an Integrated Thematic Learning Model. The results of the literature study have a theoretical orientation in developing a model based on the Dick and Carey model. The steps of this model are identifying learning objectives, conducting learning analysis, analyzing students and their context, writing performance objectives, developing assessment instruments, developing learning strategies, developing and selecting learning materials, designing and conducting formative teaching evaluations, revising teaching, and designing and conducting

summative evaluations. The reason for choosing the Dick and Carey model is because this model is system-oriented, the steps are easy to understand, and allows it to be integrated with other models because it is universal. Literature studies related to variable Y or independent variables have succeeded in studying the nature of students' creative and critical thinking abilities, especially how to measure these two abilities.

The results of the small-scale survey obtained several data such as data on the design of actual teaching and learning models (RPP, teacher's books, student's books), problems that arise in designing and implementing learning, and teaching needs. and learning models. Interview data with teachers at the following elementary schools: SDN Salatiga 12; Kalialang Elementary School, Kalibawang; SDN 2 Plosoharjo Grobogan; and SDN Pangkalan showed that: all respondents (100%) stated that the learning plan (RPP) was actually based on teacher books and student books; Most respondents (75%) stated that these problems were related to problems in designing and implementing the teaching and learning process, for example teachers lacked experience in developing integrated thematic lesson plans based on the school environment as an alternative teaching and learning design model; All respondents (100%) stated that they had not measured students' creative and critical thinking abilities using a rubric so they did not have initial ability data.

The output from the model design and development stage is a model design and is equipped with a RPP. As a model, this design contains the nature of the model, steps and objectives. The Integrated Thematic Learning Design Model Based on the School Environment is a concrete manifestation of teaching and learning design theory which uses the school environment as its sub-subtheme. The steps are as follows: determine subthemes; addition of sub-themes; analyzing graduate competencies, core competencies and basic competencies and creating indicators; and learning planning. This is to provide guidance for teachers in designing and developing teaching and learning processes to develop students' critical and creative thinking abilities. The Integrated Thematic Learning Design Model is presented in Figure 1.

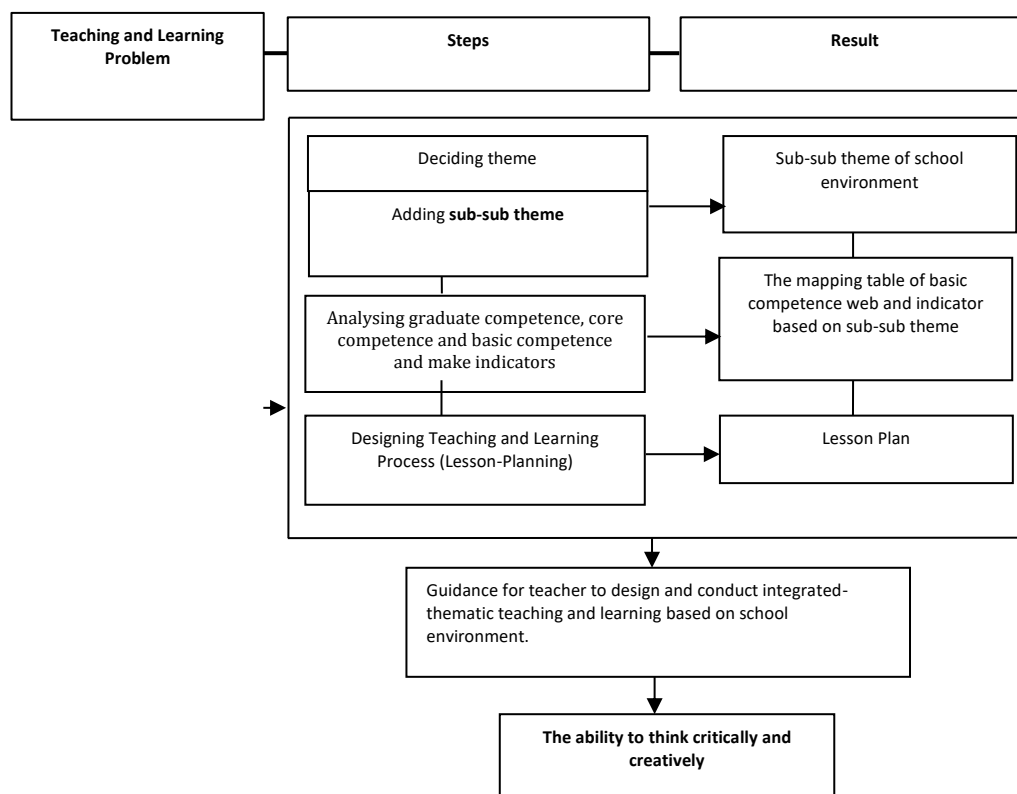


Figure 1. Integrated Thematic Learning Design Model

Initial model validation was carried out by 5 validators consisting of 3 expert validators and 2 practitioners. The validation results show an average score of 41 (82%) in the "Very High" category, so this model has a clear theoretical picture to develop. The model also has complete components such as model constraints, steps, and goals. Limitations, steps, and goals are well explained. The model syntax is also designed systematically and uses precise written language. There are also attachments such as lesson plans and learning materials. The learning plan, syllabus containing learning activities, and learning materials are explained well. However, based on input from experts, the model should be tested in limited field trials and

should highlight the school environment as the basis for integrated thematic themes. The model syntax should be explained further.

Based on the results of the RPP validation, the average expert score was 41.8 (83.6%) or Very High. The lesson plan has met the following criteria: Accuracy of learning objectives which are guided by the ABCD principle (Audience, Behavior, Conditions and Degrees) and refer to competency indicators; Accuracy HOTS-based learning objectives are to achieve student competency; Accuracy of school environment sub-themes that can tie together integrated and thematic learning materials; learning materials are designed systematically and regularly so that they can develop students' literacy and numeracy skills; Accuracy of learning activities that can develop creative and critical thinking skills; accuracy of learning scenarios (opening, main, and closing); Accuracy of learning strategies based on teaching and learning models; the steps are aligned with the model syntax; Variations in learning media adapted to objectives, student characteristics and the environment; Alignment of assessment instruments with competency indicators based on learning domains (knowledge, skills and attitudes). However, most validators also stated that the sequence of teaching and learning activities should be clearer based on the model syntax.

The results of validation of learning materials from experts were 39.8 (79.6%), which means High. Learning materials are developed based on the following criteria: suitability of the title with the description of the material in each learning unit; suitability of material descriptions with learning objectives; suitability of competency indicators with material descriptions in each unit; Accuracy of material descriptions in each unit; Clarity of each unit; clarity of material description for each unit; Completeness of material descriptions for each unit; Clarity of examples in each unit; Diversity of examples in each unit; Suitability of examples with material descriptions in each teaching and learning process. However, based on input from validators, these examples are adjusted to describe the material accompanied by attractive images.

The validator's input is entirely regarding the learning design model, lesson plans and learning materials as a reference in revising the model and all instruments. The revision was carried out by changing the sub-themes with the school environment setting so that it emphasizes the setting as the basis for integrated thematic learning. Revisions were also made by adding an explanation of the model syntax. The RPP revision was carried out by adding an explanation of teaching and learning activities based on syntax. Based on material revisions, illustrations are added with interesting pictures to complete the material examples. After revision, the model and instrument are ready to be tested in the field.

This limited field test involved 4 elementary school teachers and 102 students. This test uses a descriptive approach. The teaching and learning process is carried out by the homeroom teacher and refers to the RPP. The process consists of opening activities, core activities and closing activities. The sub-theme of this core activity is "Globalization in the School Environment" which was developed by researchers. The lecture ends with closing, questions and answers to ensure the achievement of learning objectives, and measuring students' creative and critical thinking abilities. Data from the limited field test results of the model are presented in Table 2, and Table 3.

Table 2 Descriptive Statistics of Students' Creative and Critical Thinking Levels

	N	Minimum	Maximum	Means	Std. Deviation
Critical Thinking	102	68	88	73,5	3.594
Creative Thinking	102	58	83	73	6.953
Valid N (list)	102				

Table 3 provides information that the average critical thinking ability is 73.5, ranging from 68-78. Meanwhile, the average creative thinking ability is 73 with a range between 58-83. The standard deviation of critical thinking abilities is 3.594 and the standard deviation of creative thinking abilities is 6.953. When combined with the results, Table 3 provides information on the distribution of data on creative and critical thinking abilities. Critical thinking ability data shows that 93 students (91%), with scores ranging from 60-79, are in the "High" category. Meanwhile, 9 students (9%) had a score ≥ 80 in the "Very High" category. Frequency Distribution of Critical and Creative Thinking Abilities in Limited Field Tests is presented in Table 3.

Table 3. Frequency Distribution of Critical and Creative Thinking Abilities in Limited Field Tests

No.	Category	Interval Shoes	Critical Thinking Ability		Creative Thinking Ability	
			F	%	F	%
1	Very high	≥ 80	9	9	18	18
2	High	60 - 79	93	91	77	75

No.	Category	Interval Shoes	Critical Thinking Ability		Creative Thinking Ability	
			F	%	F	%
3	Currently	40 - 59	0	0	7	7
4	Low	20 - 39	0	0	0	0
5	Very Low	≤ 19	0	0	0	0
Total			102	100	102	100

In measuring creative thinking abilities, Table 3 shows that 7 students (7%) had a score range between 40-59, in the "Medium" category; 77 students (75%) with a score range between 60-79 in the "High" category and 18 students (18%) with a score ≥ 80 in the "Very High" category. The extensive field test involved teachers and 102 students in several elementary schools in Salatiga City, Kab. Wonosobo, Kab. Grobogan and Kab. Starch. 2 students were absent, bringing the total to 100 students. Testing was carried out using a collaborative action research approach, the Stringer model [29]. This test also uses a creative and critical thinking ability rubric. The test results are in the form of descriptive statistical data and frequency distribution which are presented in Table 4, and Table 5.

Table 4 Descriptive Statistics of Critical and Creative Thinking Ability Levels in Limited Field Tests.

	<i>N</i>	<i>Minimum</i>	<i>Maximum</i>	<i>Means</i>	<i>Std. Deviation</i>
Critical Thinking	100	68	92	76,48	5.062
Creative Thinking	100	67	92	74,50	6.880
Valid N (list)	100				

Table 4 provides information that the average critical thinking ability is 76.48, ranging from 68-92. Meanwhile, the average creative thinking ability was 74.50, ranging from 67-92. The standard deviation of critical thinking abilities is 5.062 and the standard deviation of creative thinking abilities is 6.880. Apart from that, Table 5 also provides information on critical and creative thinking abilities in extensive field tests. Critical thinking ability data shows that 62 students (62%), with scores ranging from 60-79, are in the "High" category. Meanwhile, 38 students (38%) had a score ≥ 80 in the "Very High" category. In measuring creative thinking abilities, Table 5 shows that 77 students (77%) had a score range between 60-79, in the "High" category; 23 students (23%) had a score ≥ 80 in the "Very High" category.

Table 5 Frequency Distribution of Critical and Creative Thinking Abilities in Wide Field Tests

No.	Category	Interval Shoes	Critical Thinking Ability		Creative Thinking Ability	
			F	%	F	%
1	Very high	≥ 80	38	38	23	23
2	High	60 - 79	62	62	77	77
3	Currently	40 - 59	0	0	0	0
4	Low	20 - 39	0	0	0	0
5	Very Low	≤ 19	0	0	0	0
Total			100	100	100	100

A comparison of critical and creative thinking abilities in limited and extensive field tests is shown in Figure 2. In limited field tests, the percentage of students who obtained the "Very High" category for creative and critical thinking abilities was 9% and 18% respectively. In the wide field test, the percentage of students who received the "Very High" category was 38% and 23%. This shows that critical thinking abilities have increased by 322% and creative thinking abilities have increased by 27.8%. Comparison of levels of critical and creative thinking abilities in limited and extensive field tests is presented in Figure 2.

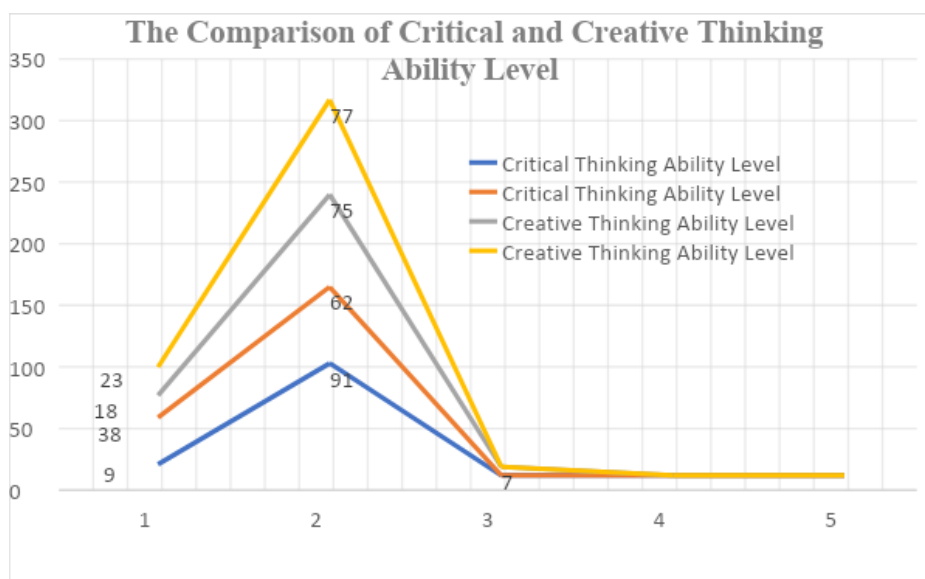


Figure 2. Comparison of Critical and Creative Thinking Ability Levels in Limited and Wide Field Tests

Discussion

The research and development of an integrated thematic learning design model based on the school environment found two main findings. First, at the model development stage it was discovered that the level of validity of the integrated thematic learning design model based on the school environment was in the very high category (80%), validation of the RPP was in the very high category. (83.6%); while the validity of the learning material is in the high category (79.6%). Second, at the limited and extensive field test stages, an increase in students' critical and creative thinking abilities was found. The magnitude of the increase can be seen from Tables 3, 4 and Figure 2, critical thinking skills experienced a very large increase, namely 322%. Meanwhile, creative thinking ability increased by 27.8%. (Khosiah et al., 2020; M. D. Widyaningrum & Wardani, 2021).

The research results found that the level of validity of the integrated thematic learning model is in the very high category, meaning that this integrated thematic learning model is suitable for use in learning. The success of developing an integrated thematic learning design model based on the school environment so that it reached a very high category was due to the addition of the sub-theme "Globalization in the School Environment" as a learning setting. The sub-theme "Globalization in the School Environment" is relevant to the theme and sub-theme of Globalization. Theoretically, the success of developing this learning design model is in line with the research view which states that theme networks should be adapted to students' environments so that learning is meaningful for them. This view is also in line with the statement that using themes around students to connect several subjects can provide meaningful experiences for Hosnan students (Kuncahyono, 2023; Wahyuni, 2020). This finding is also in line with research which found that adding subthemes with the types of work found in the student environment is a learning design that is considered good by learning design experts (Larasanty & Putra, 2021; Trnova & Trna, 2020).

The finding that this integrated thematic learning design model is suitable for use is in line with research conducted by Amris & Desyandri which found that teacher creativity in designing integrated thematic learning based on the school environment is intended to make learning more meaningful. The meaningfulness of this learning is because students can explore their own information and actively build their own knowledge. When compared with the two studies, both are related to the development of environment-based integrated thematic learning designs. However, what is different is that the research reported in this paper adds sub-themes as learning binders, making it easier to integrate various subject contents. The addition and naming of subthemes is new in this research. Empirical findings in similar research also found that integrated thematic learning designs in elementary schools are intended so that students can gain holistic learning experiences in exploring information individually and in groups (Khasinah, 2020; Susilowati, 2021). Judging from the integrated thematic learning design, Sari, Akbar, & Yuniastuti's research design is a case study design for implementing an integrated thematic learning design based on a scientific approach. Meanwhile, the learning design in this research is based on the contextual environment in the school environment. It seems that the novelty of this research is not in the approach used in learning, but rather lies in the addition of the school environment sub-theme. In this case, the sub-theme is named "Globalization in the School Environment".

Research findings at the limited field test and extensive test stages show that this integrated thematic learning design model is effective in fostering students' critical and creative thinking abilities. In the limited field test, the percentage of students who obtained critical and creative thinking ability scores in the very high category reached 9% and 18%. In the broad test, critical and creative thinking abilities in the very high category reached 38% and 23%. This means that critical thinking abilities have experienced a very large increase, namely 322%. Meanwhile, creative thinking ability increased by 27.8%. There can be seen a leap in increasing critical thinking abilities, although creative thinking abilities have also experienced quite a large increase. The findings of this research prove that the integrated thematic learning design model is effective in fostering critical thinking and creative thinking skills.

Research on integrated thematic learning design with variable impacts on students' critical thinking skills has also been carried out by a number of researchers. The research findings stated that the integrated thematic learning design model combined with problem-based learning was proven to be practical and suitable for use in learning because of its high level of validity and impact on the growth of students' critical thinking abilities (Khasinah, 2020; Sundayana, 2019). It seems that in general the findings of all these studies are in line, but if we look at the action variables, the integrated thematic research reported here focuses more on thematic design by adding learning subthemes as research novelty. Meanwhile, Saputra, Rahman & Latif and Fauziah & Fitria's research integrates integrated thematic design with established learning models, namely the Problem Based Learning and Problem Solving learning models.

The results of other research on the topic of integrated thematic learning design with the variable impact of critical thinking skills were also carried out by other researchers. Among them, research on integrated thematic learning with the Discovery & Inquiry Learning learning model found that integrated thematic learning with the Discovery & Inquiry Learning learning model was able to improve critical thinking skills in elementary school students' thematic learning (Melindawati, 2016; Suidiana & Sukmayasa, 2020). Further research on integrated thematic learning based on the storytelling method found that integrated thematic learning based on the storytelling method was proven to improve students' thinking abilities (Khasinah, 2020; Larasanty & Putra, 2021). Then R&D research on integrated thematic learning integrated with the Edutourism Digital Laboratory media found that the expert validation level results obtained a score of 92.5% (meaning very valid), and the results of the effectiveness test obtained a score of 93.7%, meaning it was very effective in improving students' critical thinking skills. Furthermore, research on the connected type thematic learning model found that the connected type thematic learning model guides students to explore and discover their own knowledge from various sources so that understanding of concepts and critical reasoning skills increases which then has an impact on increasing their learning achievement (Melindawati, 2016; Nasrul, 2021).

Research on integrated thematic learning design with the variable impact of creative thinking ability, as well as research with the variable critical thinking ability, has also been frequently carried out by a number of researchers. Previous research on the topic of integrated thematic learning using the Problem/Project Based Learning model with variable impacts on creative thinking abilities found that integrated thematic learning with the Problem/Project Based Learning model was effective in growing/improving creative thinking abilities due to the synergy of the integrated thematic learning model and syntax of Problem/Project Based Learning. The average percentage of students' creative thinking abilities from the initial measurement reached 71.06%, then increased in cycle I to 86.84% and cycle II to 89.47% (Munawaroh, 2020; Novellia et al., 2019). It seems that all of these studies are in line, but if we look at the action variables, the integrated thematic research reported here focuses more on thematic design by adding learning subthemes as research novelty. Meanwhile, research by Novellia, et al; Suidiana & Sukmayasa and Amalia et al further integrate integrated thematic design with a learning model that is often implemented, namely the Problem/Project Based Learning model.

Other similar research on the topic of integrated thematic learning design with the variable impact of creative thinking skills is also reported in other studies. For example, research on the Integrated Thematic Learning model based on Stages of Creative Thinking showed that the product of the integrated thematic learning model based on stages of creative thinking was valid, students' creative thinking stages increased with a score of 0.50, student learning activities during the learning process increased, students' responses to good learning process. The effectiveness of this model is because its syntax directs students to solve problems carefully and creatively, so that students are actively involved in the learning process. Based on the analysis results, this model is very suitable to be applied to improve creative thinking skills (Oktari et al., 2020; Primayonita et al., 2020). Furthermore, research into integrated thematic learning Predict Observe Explain based on creative thinking and R&D research on integrated thematic learning models assisted by Picture Story Books, each found the influence of integrated thematic learning Predict Observe Explain based on creative thinking on science elementary school students' knowledge competency; and the

integrated thematic learning model assisted by Picture Story Books was declared valid by experts. The integrated thematic learning model assisted by Picture Story Books had an impact on creative thinking skills with a significance value of 0.001 (Rahman & Latif, 2019; Rizaldi W., 2020). Just like the previous relevant research that has been discussed, it can be seen that all of the research is in line, but if you look at the action variable, the integrated thematic research reported here focuses more on thematic design by adding learning subthemes. as something new in research.

The findings of increased critical and creative thinking skills discussed above confirm that this effectiveness is due to each syntactic step of the integrated thematic learning design model based on the school environment providing students with experience to practice using their reasoning powers. The impact is related to critical thinking skills, students have the ability to focus on problems or learning problems that occur, then make decisions about what they believe; formulate reasons to support or reject decisions taken based on relevant facts; make reasonable or convincing conclusions; understand the situation and keep the situation in mind to help clarify questions; know the meaning of key terms, relevant parts as support; explain the meaning or terms used; and review and thoroughly examine the decisions that have been taken. As for creative thinking skills, students have the ability to discover new things that have not existed before, are original, develop various new solutions to each problem, and involve the ability to produce new, varied and unique ideas. Furthermore, students are concretely able to produce a large number of ideas or problem solutions (fluency), a number of various categories of relevant responses (flexibility), the ability to produce new and original ideas (originality), and provide detailed and systematic information. response (Hagi, 2018; Sudiana & Sukmayasa, 2020). In summary, it can be said that research findings during limited and extensive field tests which stated that there was an increase in the meaningfulness of learning is evidence of the statement that the use of themes around students to connect several subjects can provide meaningful experiences for students. Student.

The finding that the application of an integrated thematic learning design model based on the school environment can improve students' critical and creative thinking abilities is also in line with research that examines thematic development. learning models for early elementary school students show that the models are able to improve learning outcomes and are suitable for use in learning (Batubara & S., 2018; Hasibuan et al., 2020). Likewise, research that examines the development of a thematic learning model to develop critical thinking skills in lower grade elementary school students, the results show that the level of validity of the model is quite valid with a percentage level of 95%, as can be seen from the increase in pre-test to post-test scores which is quite significant; In conclusion, these results prove that the thematic learning model is valid and suitable for use in learning. Other research that is in line with these findings is research that examines the development of contextually integrated thematic learning models for early childhood in kindergarten group B. The results of the research show that the level of effectiveness reaches a percentage of $\geq 90\%$ and teachers provide a positive response. These results state that the thematic learning model is suitable for use in learning (Munawaroh, 2020; Novellia et al., 2019). Likewise, research examines the development of external and internal integrative thematic learning models at Madrasah Ibtidaiyah. The results show that teachers feel comfortable and suitable with the model developed and the evaluation results are good. So these results state that the thematic learning model is suitable for use in learning (Khosiah et al., 2020; Rizaldi W., 2020).

The next impact of the effectiveness of the learning model in fostering critical and creative thinking skills is improving student learning outcomes. This finding is in line with research which states that the application of thematic learning has been proven to increase learning outcomes higher than conventional learning. The basic idea is that thematic learning "forces" students to be actively involved in the learning process, thereby adding new knowledge to the students and thematic learning is student-centered, so it can provide direct experience to students (Darmawan & Wuryandani, 2021; Hasibuan et al., 2020).

Based on the findings of this research and various previous studies, the strength of the results of this research contributes to offering alternative learning designs that are more innovative. The Integrated Thematic Learning Design Model Based on the School Environment has proven to be effective in fostering students' critical and creative thinking abilities. Thus, this learning design model is suitable for use in learning in low and high grades, so it can be said that the integrated thematic learning design model based on the school environment by adding contextual subthemes is an alternative model that can be applied in learning. learning in elementary school. Researchers suggest further research involving more teachers and students, so that this integrated thematic learning design model is more feasible to use.

The implications of this research indicate that applying a contextual learning approach can be an effective strategy in education to develop students' critical and creative thinking abilities. For teachers, these results emphasize the importance of utilizing the surrounding environment as a learning resource that can enrich students' experiences and connect learning material with real life. This also requires teachers to be more innovative in designing activities that integrate various scientific disciplines

thematically, so that learning becomes more meaningful. For schools, this design requires the support of facilities and policies that support environment-based learning, such as providing exploration facilities outside the classroom. The implication for students is that they are not only required to understand the material passively, but also actively explore, collaborate, and think analytically and creatively in every learning activity. Overall, these findings can be a reference for educational policy makers to encourage the implementation of a more integrative and contextual curriculum to prepare students to face global challenges in the future.

The limitation of this research lies in its limited application to a particular school environment, so the results cannot necessarily be generalized to various types of schools with different environmental conditions. In addition, not all teachers have adequate skills in designing and implementing environment-based thematic learning, so special training is needed. Another obstacle is the limited time and resources available at school, especially in terms of facilities that support exploration activities outside the classroom, which can affect the effectiveness of learning. Based on these limitations, the recommendation that can be given is the need for a continuous training program for teachers to increase competence in designing and implementing thematic learning that integrates the school environment. Apart from that, it is important for schools and the government to support policies that encourage the improvement of environmentally based learning facilities. Schools should also develop partnerships with surrounding communities or other relevant parties to enrich learning resources and exploration activities. Further research is recommended for application in a variety of different school contexts to expand the generalizability of the results and evaluate the effectiveness of this learning model in a more diverse range of conditions.

4. CONCLUSION

Based on the results of the research and discussion, the following conclusions can be drawn: the school environment-based integrated thematic learning design model is a concretization of learning design theory that uses the school environment as a learning sub-theme, which aims to provide guidance for teachers in designing and developing learning so that critical thinking skills and students' creativity can develop; Learning design steps include determining subthemes; adding sub-themes; analyzing SKL, KI, KD and creating indicators; and prepare learning plans; the integrated thematic learning design model based on the school environment, lesson plans and materials are all valid; and an integrated thematic learning design model based on the school environment is effective in fostering critical thinking skills. Based on the research conclusions and development of the contextual integrated thematic learning design model above, it is recommended that teachers develop their own learning so that students' understanding is more meaningful. For other researchers, the contextual integrated thematic learning design model can be used as a reference in designing learning.

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