

Self Regulated Development Learning Model Based on Local Culture to Improve Elementary School Students' Explanatory Writing Skills

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Received: July 10, 2022

Accepted: August 2, 2022

Online Published: November 8, 2022

doi:10.5430/jct.v11n8p196

URL: <https://doi.org/10.5430/jct.v11n8p196>

Abstract

This study aims to develop a learning model to improve elementary school students' explanatory writing skills. This development research used the Plomp model (preliminary research, prototyping phase, and assessment). Data collection techniques were carried out by interview, observation, and documentation study. The data collection tool employed was a written test sheet for students' explanatory writing skills. After conducting a needs analysis, it was found that the explanatory writing material is new in elementary school. Thus, the students' explanatory writing skills in this study were very low. The teacher then needed a model focusing on the students' development in explanatory writing skills. This research, therefore, produced a learning model of self-regulated strategy development based on local culture to improve the explanatory writing skills of elementary school students. This model can motivate and increase students' confidence in writing by choosing several strategies provided and measuring, analyzing, and activating early abilities, thereby increasing students' content knowledge. The results also revealed an increase in students' explanatory writing skills. Moreover, this special model pays attention to how to write explanatory in elementary school. Further, this model cannot only be used in elementary schools but can also be used at higher school levels. Therefore, future researchers are advised to conduct research by testing the effectiveness of learning models with similar themes at higher school levels.

Keywords: learning model, local culture, explanatory writing, elementary school

1. Introduction

At the elementary school level, the Indonesian language is a compulsory subject. A language is a tool for interacting and communicating to express and convey the contents of thoughts. In learning Indonesian, writing skills are crucial so students can convey thoughts, ideas, feelings, and opinions through writing (Parra & Calero, 2019; Thomas et al., 2020; Thompson & Childers, 2021).

Specifically, learning to write explanations in the fifth grade of elementary school should be carried out based on the right steps. The steps for learning to write an explanation include determining the topic of the essay students want to write, determining the purpose of writing, making an outline of an essay adapted to the topic of the essay, writing an explanatory essay by developing an outline, revising writing, editing writing, and publishing writings (Evans, 2020; Palupi et al., 2020; Thompson & Childers, 2021).

The explanatory text explains the process of something happening, why something happens, and process related to natural, social, and cultural phenomena (Ainsworth & Burcham, 2007; Becerra et al., 2020; Rayana et al., 2019; Watts et al., 2020). Ideally, writing explanations should be close to students. The closest thing to students is the culture in the students' environment. Furthermore, learning to write explanations with cultural topics can preserve culture in the student environment, shape student character, and give birth to competent generations (Ratminingsih et al., 2020; Suciati & Erzad, 2018). Learning to write explanations provides a very useful goal for elementary school

students. It indicates that explanatory learning is vital to be applied in elementary schools.

Unfortunately, expectations about the implementation of explanatory learning in elementary schools have not run optimally. This statement is evidenced by the discovery of several learning problems that often occur in Indonesia. These problems include: (1) the explanatory writing learning materials in elementary schools are new in the current curriculum; (2) the teachers lack understanding about learning to write explanations; (3) there is no specific model for learning to write explanations in elementary schools. Thus, a model is needed to make teachers understand the steps of writing explanations and direct students in writing explanations well. For this reason, the development of a self-regulated writing strategy learning model is designed for learning to write, especially learning to write explanations. The self-regulated writing strategy development model can measure, analyze, and activate initial abilities, thereby increasing students' content knowledge (Mason et al., 2017; Teng, 2019). Not only that, but this model can motivate and make students independent and confident with the strategies used through several choices of graphic organizers. Accordingly, this model can familiarize students with managing the writing process properly and correctly.

2. Literature Review

2.1 Explanatory Writing

Factual writing is a writing process that produces writing with a variety of texts in accordance with the facts using a process approach and a genre approach (Carbonell et al., 2019; David & Maureen, 1997; Fang et al., 2020; Fukaya, 2014; Mohd Ramli, 2017). The process approach can be seen in the three stages of writing: pre-writing, during writing, and post-writing (Palupi et al., 2020; Parra & Calero, 2019). Meanwhile, the genre approach is a learning approach that produces certain texts and focuses on written texts such as descriptive texts, narrative texts, recount texts, exposition texts, explanatory texts, and procedural texts. (Palupi et al., 2020). Descriptive text is a text that contains a description of the properties of objects. Narrative text is a series of stories about events arranged in chronological order. Recount text is a type of text in English that serves to retell events or experiences that occurred in the past. Exposition text is a type of text that contains information or knowledge, while procedure text is a text that contains steps to do something. Meanwhile, explanatory text is part of factual writing because explanation is a text that explains a fact about the process of occurrence of events or natural phenomena, social phenomena, and cultural phenomena (Coleman et al., 1997; Ozuru et al., 2010; Palupi et al., 2020; Rayana et al., 2019; Ricoeur, 2018).

Explanatory is a text that explains an event or phenomenon, both natural phenomena, social phenomena, and culture (Coleman et al., 1997; Ozuru et al., 2010; Palupi et al., 2020; Rayana et al., 2019; Ricoeur, 2018). Menulis eksplanasi dapat bermakna jika menggunakan budaya lokal dengan proses pembelajaran yang memasukan sistem budaya dan nilai-nilai budaya yang terdapat di daerah tempat tinggal siswa. Culture also includes social norms, enculturation, acculturation, and the discovery of new cultural practices. Cultural systems and values may vary based on where students live, creating more than one cultural system. The elements of the cultural system consist of a system of language, knowledge, social organization, technology, economy, religion, and the arts. The research focus is on the system of art culture. Individual abilities and understanding can also be increased if supported by social interactions involving facts, system, value, norm, and symbols from the cultural environment (Ratminingsih et al., 2020; Suciati & Erzad, 2018).

2.2 Explanatory Writing Process

The explanatory writing stage is divided into three stages: pre-writing, core writing process, and post-writing (Palupi et al., 2020; Parra & Calero, 2019). The pre-writing stage is the preparatory stage, where at this stage, the steps that must be taken are (1) determining and limiting the topic of writing, (2) formulating objectives, determining the form of writing, and determining the intended readers, (3) selecting materials, and (4) making an outline to facilitate the writing process (Parra & Calero, 2019).

The core process in explanatory writing is to develop the content of the writing itself, which this process requires the writer to write according to the topics and concepts within the framework of the essay that has been determined (Murtadho, 2021; Parra & Calero, 2019). The pre-writing stage is the preparatory stage. At this stage, the steps that must be taken are (1) determining and limiting the topic of writing, (2) formulating goals, determining the form of writing, and determining the readers to be addressed, (3) selecting materials, and (4) making an outline of the essay to facilitate writing process (Ricoeur, 2018).

The last stage is post-writing. At this stage, there are three essential processes: revise, edit, and read out the results of the essay (Parra & Calero, 2019). The activities carried out in the revision process are the authors to improve the

overall writing results, both from the structure of the essay and linguistics. The structure of the essay consists of the arrangement of main ideas, explanatory ideas, systematics, and reasoning. Meanwhile, the linguistic aspects include word choice, language structure, spelling, and punctuation. The second process is to edit the writing that has been corrected so that the writing can be read optimally by the reader. The last process is reading the essay and displaying the writing on the class wall magazine.

2.3 Self-Regulated Strategy Development Learning Model

The self-regulated strategy development (SRSD) learning model is a model that acclimates students to receive and carry out explicit instructions from the teacher and makes students accustomed to developing self-regulatory strategies (Chen et al., 2021; Cuenca-Carlino & Mustian, 2013; Lane et al., 2011; Lienemann & Reid, 2008; Tanji & Yokota, 2017). This learning model supports and encourages students to be independent in completing assignments by providing structured steps and self-regulating strategies that can be applied at every grade level, learning process, and student ability (Harris et al., 2015; Lane et al., 2008; Leins et al., 2017; Palermo & Wilson, 2020; Tanji & Yokota, 2017).

The self-regulated strategy development (SRSD) learning model can be carried out in six steps: (1) developing and activating knowledge. In this first stage, the teacher assesses the students' prior knowledge by examining student assignments, discussions, and observations. After knowing the students' initial abilities, the teacher provides a strategy and sets the right strategy for each student. (2) In the discussion, the teacher and students discuss the students' abilities from the evaluation results and information about the performance of the tasks that students have done previously. Then, the teacher and students set goals with the activities and goals they want to use. (3) Regarding the model, at this stage, the teacher models the strategy steps and how to use the strategy. (4) At the memorization stage, memorizing the strategic steps can be done with activities, such as singing, playing, or quizzes. (5) The next is support, where the teacher supports every activity carried out by students so that students are confident and independent in implementing the applied learning strategies. (6) In the independent performance stage, the last stage, students get the opportunity to write independently. The support of teachers and peers greatly supports the success of the process of implementing the self-regulated strategy development learning model in elementary schools (Ennis et al., 2015; Ennis & Jolivet, 2014; Graham et al., 2005; Graham & Harris, 1999; Harris & Graham, 2009).

2.4 Local Culture

Culture is dynamic and can change over time, but culture is selective and reflects the nature of the people who live in it (Nambiar et al., 2020; Rokhmawan & Firmansyah, 2017). Although each regional culture is different, the culture of each region is interrelated; like dance culture, although the movements are different, the meaning is usually the same (Suciati & Erzad, 2018). Therefore, culture is formed from all human ideas, actions, and behaviors by learning (Rokhmawan & Firmansyah, 2017).

Local culture originates from a region or community group (Aziz et al., 2020). Local culture can be described by the characteristics of a community group in interacting and behaving in their environment (Ratminingsih et al., 2020). The characteristics of the local culture are like something born in an area, cannot be separated from local customs or traditions, and is passed down from generation to generation (Niman et al., 2020). However, over time culture is also affected by the knowledge people have and changes in the world that are unpredictable.

3. Method

The research and development approach used the Plomp development model (Akker et al., 2013). The preliminary research stage was carried out by analyzing the explanatory writing skills of fifth-grade elementary school students and the need for using learning models. In the prototyping phase, validation and practicality tests were conducted on the learning model of self-regulated writing strategy development based on local culture. Furthermore, in the assessment phase, an assessment was made of developing students' explanatory writing skills after carrying out the learning process using a self-regulated strategy development learning model based on local culture.

3.1 Research Questions

Based on the background and identification of research problems found, the problem formulations in this study are:

How is the development of a self-regulated strategy development model based on local culture to develop explanatory writing skills?

How effective is the self-regulated strategy development model based on local culture in developing explanatory writing skills?

3.2 Samples/Participant

The population in this study was elementary school students in Indonesia. Meanwhile, the participants in this study were fifth-grade elementary school students aged 10-11 years. The study was conducted at seven schools in West Sumatra: Padang City, Payakumbuh City, Pariaman City, and Lima Puluh Kota Regency. These seven schools were chosen because principals and teachers were willing to participate in the research, and these seven schools represented urban, border, and rural schools. Students only come from one country, Indonesia. The sample of this study was 106 students, with 54 students from the experimental class and 52 from the control class. Each school only consists of six classes. That is, each class only consists of one group.

3.3 Instrument(s)

The instruments used in this study were observation sheets on the learning implementation, structured interview guide sheets, and explanatory writing skill test sheets. Before being used, the instrument must be validated by nine experts, namely three learning model experts, three linguistic experts, and three child psychologists. Things assessed in the learning implementation instrument included the assessment of the preliminary activity stage, the core activity stage, and the closing activity stage. It aimed to make it easier for researchers to observe whether learning activities were going well and in accordance with the stages. The interview instrument was then conducted to make use of data from the results of the learning implementation instrument related to the needs of the learning model used in the learning process. Interviews were also conducted to reveal the responses of teachers and students about the practicality of the learning model used. In addition, the indicators assessed in the explanatory writing skill instrument consisted of the structure of the explanatory text, the characteristics of the explanatory content, the language characteristics of the explanatory text, and the mechanics of the explanatory text. This instrument assessed the extent of students' explanatory writing skills.

3.4 Data Collection Procedures

Data collection in this study employed three stages: the stage of needs profile for the explanatory writing skills, the stage of model development, and the stage of model effectiveness. The needs profile stage was carried out by (1) interviewing the teacher's needs for learning explanatory writing in elementary schools, (2) observing the learning process in elementary schools, (3) conducting tests on students' explanatory writing skills, and (4) literature study. Furthermore, at the model development stage, the data collection procedure used was to validate the learning model to model experts. Meanwhile, a data collection procedure was developed and used to test students' explanatory writing skills to see the effectiveness of the learning model.

Observations and interviews were conducted by researchers (Hidayah et al., 2021; Salimi et al., 2021; Susiani et al., 2021). Observations were made during the learning process. The writer stands at the back of the class and occasionally sits at the back of the class to take notes. Interviews were conducted with practicing teachers who have teaching experience in the fifth grade of elementary school. When observing the learning process, the researcher sat in the back of the class. Interviews were conducted when the students had returned home from school. Interviews were conducted by sitting opposite the teacher in the classroom.

3.5 Data Analysis

Data analysis in this study utilized SPSS version 22. The procedure of data analyzed using SPSS is descriptive analysis, Wilcoxon signed ranks test, mann-whitney test, dan N-Gain (Arbuckle, 2007). Descriptive analysis is an analytical technique that is carried out by describing the characteristics of the sample data without drawing conclusions. The things that are calculated are the average value, mode, media, maximum value, minimum value, variance, and so on. Meanwhile, the Wilcoxon signed ranks test was used to measure the significance of the difference between two groups of data if it did not meet the normality assumption. Mann-Whitney test was used to test whether the differences in the media were significant or not. The N-Gain was carried out to test the effectiveness of the self-regulated strategy development model based on local culture to increase the ability to write explanations.

4. Results

The research findings on developing a local culture-based self-regulated strategy development model to improve explanatory writing skills can be described by answering research questions.

4.1 Profile of The Need for The Explanatory Writing Skills

Profile of the needs of elementary school students' explanatory writing skills can be analyzed through observation of writing learning in elementary school and assessment of explanatory writing skills of elementary school students.

Observation of writing learning in elementary school was used to observe student activities in the process of learning to write explanatory in class. The purpose of the observations carried out during the learning process was to observe students' needs in using a self-regulated strategy development model based on local culture to improve their explanatory writing skills. Based on the observation results made at SDN 13 Lolong Padang City, SDN 22 Lubuk Minturun Padang City, SDN 03 Kampung Jawa, Solok City, SD Negeri 23 Payakumbuh, SDIT An Nahl, Lima Puluh Kota Regency, MIN 1 Pariaman City, MIN 2 Pariaman City, and MIN 3 Padang City, generally, learning was carried out using a scientific approach provided in the teacher's book. The learning process began by observing the themes contained in the student books. Students were asked to read the examples of explanatory essays provided, and then students were encouraged to make explanatory essays according to the observed themes using their language. After the students finished explanatory writing, the students were asked to collect the essay results on the teacher's desk.

In addition, the assessment of the explanatory writing skills of elementary school students can be done through the explanation writing skill assessment guide sheet (Rayana et al., 2019). It was carried out by testing on fifth-grade elementary school students at eight different schools, namely at Public Elementary School (SDN) 13 Lolong Padang City, SDN 22 Lubuk Minturun Padang City, SDN 03 Kampung Jawa, Solok City, SDN 23 Payakumbuh, Integrated Islamic Elementary School (SDIT) An Nahl, Lima Puluh Kota Regency, Public Islamic Elementary School (MIN) 1 Pariaman City, MIN 2 Pariaman City, and MIN 3 Padang City. Product effectiveness data were obtained from the test results given to students. This assessment was performed with assessment indicators, comprising the structure of the explanatory text, the characteristics of the content of the explanatory essay, the language features of the explanatory text, and the mechanics of the explanatory text. Based on the assessment results of students' explanatory writing skills, carried out with a sample of 106 students, the average student assessment was 23.2%, in the very low category. The assessment results of the explanatory writing skills can be seen in Table 1.

Table 1. The Assessment Results of the Explanatory Writing Skills

No	School name	Average
1	SDN 13 Lolong Padang City	21.67
2	SDN 22 Lubuk Minturun Padang City	32.67
3	SDN 03 Kampung Jawa	26.43
4	SDN 23 Payakumbuh	21.25
5	SDIT An Nahl, Lima Puluh Kota Regency	25
6	MIN 1 Pariaman City	23.75
7	MIN 2 Pariaman City	22.73
8	MIN 3 Padang City	35.1
	Total	208.6
	Average	23.2

Based on the learning observation results, the process of explanatory writing learning was not in accordance with the stages of writing, where the stages of determining the purpose of writing, making an outline of an essay, revising, editing, and publishing were not found. It could be seen from the fifth-grade students' explanatory writing results, which were very low. Thus, it is necessary to develop a new learning model which specifically pays attention to the development of writing skills in the form of explanatory for elementary school students.

4.2 The Process of Developing a Self-Regulated Strategy Development Learning Model Based on Local Culture

The development of learning models to improve explanatory writing skills should be in accordance with the self-regulated strategy development learning model based on local culture. The development of a learning model was on the basis of the theory of explanatory writing combined with a self-regulated strategy development learning model based on local culture.

The self-regulated strategy development learning model is a model that accustoms students to be independent in completing tasks, where students are facilitated by structured steps, thus creating confidence in completing their tasks. The self-regulated strategy development learning model has six syntaxes: (1) Develop Background Knowledge, (2) Discuss It, (3) Model It, (4) Memorize It, (5) Support It, and (6) Independent Performance (Cuenca-Carlino & Mustian, 2013; Hacker et al., 2015; Santangelo et al., 2007). This learning model was developed for research needs in improving explanatory writing skills, thus giving rise to the new syntax, namely the development of a

self-regulated strategy development learning model based on local culture.

The syntax design of the self-regulated strategy development learning model based on local culture was formed in five steps: basic skills in writing, discussion of writing strategies, local cultural modeling, applying writing strategies, and post-writing. Syntax changes can be seen in Table 2.

Table 2. Changes in Learning Modal Syntax

The syntax of the self-regulated strategy development learning model (Initial step)	The syntax of the self-regulated strategy development learning model based on local culture (New step)
1) Develop Background Knowledge	1) Basic skills in writing
2) Discuss It	2) Writing strategy discussion
3) Model It	3) Local cultural modeling
4) Memorize It	4) Applying strategies in writing
5) Support It	5) Post-writing
6) Independent Performance	

Based on Table 2., it can be described that the syntax of the self-regulated strategy development learning model has changed after the development of a model based on local culture. From the initial six steps of the self-regulated strategy development learning model, the researcher combines elements of local culture in it. Therefore, it is concluded that the self-regulated strategy development learning model based on local culture has stages, namely basic skills in writing, writing strategy discussion, local cultural modeling, applying strategies in writing, and post-writing.

The first syntax is basic skills in writing, where operational activities carried out in this syntax include (1) measuring students' initial abilities, (2) analyzing student results, and (3) activating student knowledge, such as understanding the explanatory text and explanatory text characteristics. The implementation of the first syntax can be seen in Figure 1.



Figure 1. Syntax of Basic Skills in Writing

The second syntax is writing strategy discussion. In this syntax, there are several steps that are carried out. The first is the provision of strategies. The teacher provides three kinds of graphic organizer strategies. The second is the explanation of the strategic objectives. The teacher explains the purpose, importance, and use of each strategy that has been provided. The third is the selection/determination of strategies. Students choose one of the three strategies that have been provided (which are understood). The fourth is the repetition of the strategy. Students repeat and understand again the chosen strategy. The application of the second syntax can be seen in Figure 2.



Figure 2. Syntax of Writing Strategy Discussion

The third syntax is local cultural modeling. The important points in the third syntax are giving examples, asking questions, discussing, performing, and determining the topic/theme. In detail, the operational activities carried out are: (1) the teacher provides examples of the use of strategies with local cultural essays; (2) students pay attention to the teacher so that the "how" and "why" questions arise from the process; (3) the teacher and students discuss what students do not know until students understand the strategy to be used; (4) the teacher displays pictures related to the local culture; (5) students make the topic/theme of the essay together. The application of the third syntax can be seen in Figure 3.



Figure 3. Syntax of Local Cultural Modeling



Figure 4. Syntax of Applying Strategies in Writing

The fourth syntax is applying strategies in writing. In this syntax, the steps taken are that (1) the teacher motivates students to write; (2) students prepare what local cultural themes/topics and what strategies they use; (3) students work on or fill out student worksheets; (4) students work on their writing according to the theme of local culture and the chosen strategy. The application of the fourth syntax can be seen in Figure 4.

The last syntax is post-writing, where the stages include (1) students swapping student worksheets to be checked by their friends; (2) students and the teacher together check or revise the spelling, punctuation, conformity of the content with the title and the coherence of the content of the essay; (3) students carry out the process of editing or repairing the writings they have made; (4) students carry out the publication process. The application of the fifth syntax can be seen in Figure 5.



Figure 5. Syntax of of Post-Writing

4.3 The Effectiveness of the Self-Regulated Strategy Development Learning Model Based on Local Culture

The effectiveness of the self-regulated strategy development learning model based on local culture to improve explanatory writing skills can be seen from the results of the tests given and the results of observations during the learning process.

Before the use of the local culture-based self-regulated strategy development learning model, fifth-grade students' explanatory writing skills were tested. It was known that the pre-test scores of students' explanatory writing skills were in the very low category, with an average score of 23.59 in the experimental class and 35.1 in the control class.

Based on the pre-test results, a self-regulated strategy development learning model based on local culture was then tested in the experimental class. The experimental class was conducted using a self-regulated strategy development learning model based on local culture, with 54 students. The learning process in the experimental class used a five-step syntax for the self-regulated strategy development learning model based on local culture: basic skills in writing, writing strategy discussion, local cultural modeling, applying strategies in writing, and post-writing.

In the first stage of the learning process, the teacher measured the students' initial abilities by asking questions about the culture around the student's living environment. From the question-and-answer process carried out by the teacher and students, the teacher immediately analyzed the ability of each student through the answers given by the students. Next, the teacher activated students' prior knowledge with questions related to learning to write explanations, such as the meaning of explanation, characteristics of explanatory texts, and characteristics of explanations. After asking questions, the teacher also explained in detail everything related to the explanation.

In the second stage, the teacher provided three graphic organizers that could be seen on the projector screen and student worksheets. The teacher explained the three graphic organizers by describing the purpose, importance, benefits, and uses of the graphic organizer. Students were asked to choose a graphic organizer that students were good at and enjoyed. Next, students and teachers repeated and understood the strategy of using the selected graphics.

In the third stage, the teacher gave examples of the use of each strategy by explaining how to make a good and correct outline through graphic organizers. Students paid attention to the teacher explaining in front of the class, and then the teacher asked students if they had understood how to use a graphic organizer. Students who did not understand would ask the "how" and "why" of the process of using a graphic organizer. Then, the teacher and students discussed what the students did not know until the students understood the graphic organizer. Next, the teacher gave three pictures with the cultural theme of where the students lived. Students then determined the

topic/theme of the essay together through the pictures chosen.

In the fourth stage, before carrying out the activity of writing factual essays in the explanatory form, the teacher provided motivation by singing together and providing support in writing. Each student prepared a theme/topic and graphic organizer that they would use. Next, students worked on the outline of the essay according to the theme, and the graphic organizer determined on the student worksheet and continued with writing factual essays in the form of explanatory independently.

In the last stage, after writing independently, students exchanged student worksheets to be checked by their friends next to them. Through the teacher's guidance, students began to check the worksheets of other students by revising the spelling, punctuation, conformity of the content with the title, and the coherence of the content of the essay. Furthermore, the student worksheets completed were returned to their owners so that these students could carry out the editing process or repair the writings they made. In the last process, students published by reading their writings in front of the class.

Based on the assessment results of the explanatory writing skills using the self-regulated strategy development learning model based on local culture, the normality test results are in Table 3.

Table 3. The Normality Test Results

Class		Tests of Normality					
		Kolmogorov-Smirnov ^a			Shapiro-Wilk		
		Statistic	df	Sig.	Statistic	df	Sig.
Student learning outcomes	Pre-Test Experiment (SRWSD)	.303	54	.000	.728	54	.000
	Post-Test Experiment (SRWSD)	.154	54	.003	.952	54	.031
	Pre-Test Control (Conventional)	.205	52	.000	.842	52	.000
	Post-Test Control (Conventional)	.224	52	.000	.917	52	.001

Lilliefors Significance Correction

In Table 3, it is necessary to observe the Kolmogorov-Smirnova test because the data were more than 50. The research data were not normally distributed, so the Wilcoxon and Mann-Whitney tests were performed. Wilcoxon test results can be seen in Table 4.

Table 4. Wicoxon Test Results

	Test Statistics ^a	
	Post-Test Experiment (SRSD learning model) - Post-Test Control (conventional learning model)	Pre-Test Experiment (SRSD learning model) - Pre-Test Control (conventional learning model)
Z	-6.414 ^b	-4.756 ^b
Asymp. Sig. (2-tailed)	.000	.000

a. Wilcoxon Signed Ranks Test

b. Based on negative ranks.

The data revealed differences in the average student learning outcomes. Thus, the self-regulated strategy development learning model based on local culture influenced the results of students' explanatory writing skills. Next, the homogeneity test was carried out. The homogeneity test showed homogeneous results. Next, the Mann-Whitney test was performed. The following are the Mann-Whitney test results, as shown in Table 5.

Table 5. The Mann-Whitney Test Results

Test Statistics ^a	
Student learning outcomes	
Mann-Whitney U	37.000
Wilcoxon W	1415.000
Z	-8.683
Asymp. Sig. (2-tailed)	.000

a. Grouping Variable: Class

The data uncovered differences in the explanatory writing skills between using a self-regulated strategy development learning model based on local culture and conventional learning models. Since there was a significant difference, it can be said that "there was an effect of using a self-regulated strategy development learning model based on local culture with conventional learning models on learning outcomes in the subject of explanatory writing." Next, the N-Gain test was carried out. The N-Gain test results can be seen in Table 6.

Table 6. The N-Gain Test Results

NGain_Percent	Descriptive		Statistic	Std. Error	
	Class	Mean			
Experiment	Mean		71.2498	1.65140	
	95% Confidence Interval for Mean	Lower Bound	67.9375		
		Upper Bound	74.5621		
	5% Trimmed Mean		71.3321		
	Median		72.3810		
	Variance		147.264		
	Std. Deviation		12.13525		
	Minimum		46.67		
	Maximum		93.75		
	Range		47.08		
	Interquartile Range		17.50		
	Skewness		-.088	.325	
	Kurtosis		-.589	.639	
	Control	Mean		12.8114	8.78324
		95% Confidence Interval for Mean	Lower Bound	-4.8217	
		Upper Bound	30.4445		
5% Trimmed Mean			21.8322		
Median			25.0000		
Variance			4011.554		
Std. Deviation			63.33683		
Minimum			-400.00		
Maximum			50.00		
Range			450.00		
Interquartile Range			27.95		
Skewness			-5.666	.330	
Kurtosis			36.708	.650	

The data showed that using the self-regulated strategy development learning model based on local culture was quite effective in improving the learning outcomes of explanatory writing. Meanwhile, using conventional models was ineffective in improving learning outcomes in explanatory writing.

5. Discussion

5.1 Self-Regulated Strategy Development Learning Model Based on Local Culture

The self-regulated strategy development learning model based on local culture is a model validated and used specifically for learning to write explanations. This model contains conceptual understanding, planning, and application in learning. The right model that can be applied to learning should have characteristics such as having a theoretical basis for education, having an educational mission and goals, being able to be used as a guide for improving learning process activities, and having model parts (Liu et al., 2020; Usman et al., 2018).

A good model must also have several components: social system, syntax, support system, reaction principle, and instructional impact and accompaniment (Anderson, 1998b, 1998a; Fielder, 1973; Joyce et al., 2017). The syntax of this learning model is oriented to the self-regulated strategy development learning model but has been modified according to the needs of teachers and students. The collaboration of the syntax of the self-regulated strategy development learning model based on local culture with writing theory produces different syntax or steps from other

learning models.

The syntax design of the self-regulated strategy development learning model based on local culture was formed in five steps: basic skills in writing, writing strategy discussion, modeling, applying strategies in writing, and post-writing.

Before the learning model of self-regulated strategy development based on local culture was applied, the learning model was validated by experts. The feasibility of the learning model product was assessed based on four aspects of the assessment, including the validity of supporting theories, the validity of syntax components, the validity of aspects of model components, and the validity of the model application. Based on the validation results carried out by expert validators in the field of modeling and the application of a local culture-based self-regulated strategy development learning model to improve the learning outcomes of explanatory writing, this learning model was feasible to use.

The self-regulated strategy development learning model has been designed according to the students' needs, developments, and local culture of the environment (Leins et al., 2017; Palermo & Thomson, 2018; Santangelo et al., 2007). The self-regulated strategy development learning model based on local culture teaches students to design their strategies in their brains to complete work in accordance with the comfort of working on their own, without any intervention from others. Students are also given the opportunity to develop themselves in their way without being limited (Chen et al., 2021; Ennis & Jolivet, 2014; Graham et al., 2005; Harris et al., 2006). In this case, the teacher only needs to facilitate students with the strategies they use in completing their work (Harris et al., 2012, 2015; Lane et al., 2008).

5.2 The Impact of The Self-Regulated Strategy Development Learning Model Based on Local Culture

The self-regulated strategy development learning model was modified into a local culture-based self-regulated strategy development learning model. This modification is needed to apply the self-regulated strategy development learning model in the writing learning process. Related to this, the writing ability that needs to be improved is the students' explanatory writing skills. Explanatory writing skills are a new writing skill in elementary school students (Fukaya, 2014). Explanatory writing also still feels foreign to elementary school students in Indonesia (Rayana et al., 2019). In addition, students are confused about the type of explanatory writing (Ainsworth & Burcham, 2007; Palupi et al., 2020; Ricoeur, 2018; Watts et al., 2020). For this reason, the self-regulated writing strategy development learning model based on local culture was developed to help students understand the meaning of explanatory writing.

One variation of an explanatory essay is a type of essay describing local culture (Ainsworth & Burcham, 2007; Becerra et al., 2020; Coleman et al., 1997; Ozuru et al., 2010; Palupi et al., 2020; Rayana et al., 2019; Ricoeur, 2018). Local culture is a noble heritage that should be preserved (Ratminingsih et al., 2020; Suciati & Erzad, 2018). However, currently, involving local culture as an object of writing study is an act of progress in improving students' creative writing (Ratminingsih et al., 2020). Local culture involved in explanatory writing is the local culture in non-material form. Local culture in non-material forms can be in the form of continuous habits of local communities, which are still maintained (Ratminingsih et al., 2020; Suciati & Erzad, 2018).

The non-material local culture used as the basis for research on the development of a self-regulated writing strategy development learning model was the culture of the Minangkabau tribe. The local Minangkabau culture used consisted of tabuik, plate dance, pasambahan dance, pacu itik, pacu jawi, and silek (Aziz et al., 2020; Indrayuda, 2017). The local culture of the Minangkabau tribe was employed as a theme in developing students' explanatory writing skills. This theme can change according to the place and local culture in implementing a self-regulated writing strategy development learning model based on local culture. For example, the self-regulated writing strategy development learning model based on local culture was applied in Riau, so the theme of writing explanation was replaced with local culture in Riau, such as pacu jalur, tandak dance, Joged Lambak dance, and other non-material cultures.

6. Conclusion

The self-regulated strategy development learning model based on local culture is the latest in accordance with the explanatory writing learning process. Pengembangan Model pembelajaran self regulated strategy development berbasis budaya lokal terbukti efektif untuk meningkatkan kemampuan menulis eksplanasi. This study aimed to improve explanatory writing skills by developing a self-regulated strategy development learning model based on local culture. This research then developed a self-regulated strategy development learning model based on local culture to improve explanatory writing skills. The final result of this development research is syntax, comprising

basic skills in writing, writing strategy discussion, modeling, memorization, applying strategies in writing, and post-writing. In addition, local culture is embedded in the theme of the explanatory writing essay. Thus, the theme can be adapted to the local culture at the location of the application of this learning model or the local culture already attached to individual students. Further, developing a self-regulated strategy development learning model based on local culture is a novelty to improve students' creative writing skills, maintain students' local cultural insights, and make it easier for students to master explanatory writing skills. Future researchers need to conduct research by testing the effectiveness of local culture-based learning models on the abilities of other students, such as the ability to write essays, critical thinking skills, or others, both at the same level (elementary school) or higher school level. In addition, teachers need to conduct further research with a similar focus in various regions, so that the formation of an appropriate learning model with the same quality is needed to improve the ability to write explanations.

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