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The Creativity Level in Writing Mini Fiction Based on Ecopreneurship through Design Thinking in Online Learning

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ABSTRACT

The aim of this research is to determine the effect of the design thinking approach assisted by synchronous media Zoom and asynchronous media Google Classroom on writing skills for mini fiction based on ecopreneurship in terms of the creativity level (low, medium, and high). Method of research used was quasi-experimental method with 3 x 2 factorial design and involving 60 students from the Elementary School Teacher Education Study Program as samples in Universitas Islam 45 Kota Bekasi, Universitas Pendidikan Indonesia, and Universitas Kristen Indonesia Toraja. The results of research prove that there is an interaction effect between learning using the design thinking approach assisted by synchronous media Zoom and asynchronous media GCR with levels of creativity together towards improving writing skills for mini fiction based on ecopreneurship with a sig. (0.004) < α (0.05). which has implications for increasing the quantity and quality of innovative learning approaches in elementary education

Keywords: *Writing Mini Fiction, Ecopreneurship, Design Thinking*

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INTRODUCTION

Based on the results of the 2023 Global Competitive Index (CGI) released by the Institute for Management Development, it can be seen that Indonesia is ranked 34th out of 64 countries due to factors including: (1) economic problems; (2) natural environmental problems that have implications for the health sector; and (3) problems in the field of basic education. Ecopreneurship is considered the right option for anticipating the impact of the three main problems facing the Indonesian nation. Conceptually, ecopreneurship is a form of integration between ecological and entrepreneurial concepts (Afiani et al., 2022) and was first developed by Shaper (2002) making natural systems and entrepreneurial values the basis for behavior.

Every candidate of elementary school teacher must be able to initiate efforts to internalize ecopreneurship values in all creative learning. One of the lessons that can be chosen to internalize values and character in students is learning children's literature (Bela, N., et al., 2022; Aslan, A., & Shiong, P. K. 2023; Khumairo, A., & Anggriliana, P. 2022), which is interpreted in the form of mini fiction. Mini fiction is

believed to be the right way to internalize human values and is related to the nature of education in an effort to humanize humans (Aryanto & Widiansyah, 2019). Through mini fiction, children will experience events in their surroundings.

Mini fiction provides life experiences, meaning that children's experiences are explored through their experiences when reading mini fiction. In addition, mini fiction teaches characters without having to teach (Aryanto, Rahman, Hartati, Sumirat, et al., 2021; Aryanto, Rony, et al., 2021). The principle of humanism is very attached to the context of fictional learning; this is in line with the design thinking approach, which makes the principle of humanity the foundation of each stage. Design thinking is a pattern of thinking from a designer's perspective that solves problems based on a human-oriented approach (Fauzi, I., et al., 2023). There are four pillars in design thinking, namely the pillar of balance, framework of thinking, use of tools and toolkits, and approach patterns. (Wrigley et al., 2018). The stages in design thinking include discovery, interpretation, ideation & experiment, and evaluation (Chu et al., 2018; Cross, 2023; Suyanto, S. (2023).

In practice, the design thinking approach in mini fiction learning can be done online. synchronous media Zoom and asynchronous media Google Classroom are considered to be appropriate alternatives to stimulate students in compiling mini fiction based ecopreneurship. These two online learning media are considered the most appropriate based on the results of surveys and interviews with the research population, namely PGSD students at Ubhara Jaya, Unisma, UPI, and UKI Toraja. Based on survey results at FIP Ubhara Jaya, it was stated that 58% of students preferred online learning using Google Classroom asynchronous media, and 20% of students stated they preferred online learning using Zoom or Google Meet synchronization. This is supported by the results of interviews with lecturers at Unisma, UPI, and UKI Toraja, which stated that the majority of students prefer online learning through synchronous media Zoom and asynchronous media Google Classroom because the features are easy and tend to be stable.

Zoom synchronization media and Google Classroom asynchronous media are two online learning media that are considered relevant to learning in the digital era (Hilal et al., 2022; Mubin et al., 2022; Lestari, F., et al., 2023). Several researches have proven that Zoom synchronization media makes the learning process more interactive through various features that are easy to apply by teachers or lecturers (Islam et al., 2023; Li et al., 2022; Rostiani et al., 2023; Tosto et al., 2023). The results of the research by Dharma et al., (2017) state that the features in the Zoom application encourage activities to be more interactive, dynamic, and practical. Apart from that, the use of Google Classroom asynchronous media is also considered to really support the online learning process because various features designed in Google Classroom are explicitly prepared for the learning process (Harjanto & Sumarni, 2019; Ketut Sudarsana et al., 2019). The research results of Mohd Shaharanee et al., (2016) confirm that the existence of the Google Classroom application makes it easier for teachers to communicate with students. Several features available in Google Classroom make it easier for teachers to process data compilation and provide various assignment bills. Therefore, this research is very appropriate to carry out to prove the effectiveness of Zoom synchronization and Google Classroom asynchronous media in online learning. These two online learning media are very relevant in stimulating students' thinking processes to become more creative, so they are very relevant to the design thinking approach in the context of this research.

One of the fundamental requirements for improving mini fiction based on ecopreneurship writing skills is creativity in reconstructing words that represent the developmental characteristics of elementary school children and ecopreneurship values. Therefore, the ability to think creatively becomes the main capital during the process of making mini fiction based on ecopreneurship. The ability to think creatively is to think about finding, synthesizing, building, deciding, and producing new ideas (Darmawan et al., 2013; Nurkaeti et al., 2020; Shalsabila et al., 2018). So this study categorizes the ability of the sample based on the level of creativity (low, medium, and high) to find out differences in their ability to make mini fiction based ecopreneurship.

However, unfortunately the research and availability of reading materials for children's literature in elementary schools is still limited, especially mini fiction that contains ecopreneurship values. Based on several relevant previous research findings, the concept of ecopreneurship was initially researched and developed by (Schaltegger, 2002; Schaper, 2002a) with research results in the form of an overview of the ecopreneurship concept, which is implemented in the economic sector and has not yet penetrated the world of education. This was followed up by Supriatna (2016) who began studying the concept of ecoliteracy as part of the framework for developing the concept of ecopreneurship in the world of education and became the basis for research conducted by Aryanto & Syaodih, (2017) with research results related to the implementation of ecopreneurship programs in elementary schools. The next research discusses the development of ecoliteracy-based storybooks and is complemented by the results of the latest research by Aryanto, Nurkaeti, et al., (2020) which explains the development of an ecopreneurship-based poetry anthology. However, the anthology compiled is in the form of poetry and has not yet expanded into the development of mini fiction. The research relevant to mini fiction based on ecopreneurship was carried out by Aryanto, Rahman, et al., (2021) but still conceptual. Therefore, based on the various previous relevant studies above, the position of this research is development research from various previous similar studies with a novelty value; that is, there are no research results related to the effect of the design thinking approach assisted by synchronous media Zoom and asynchronous media Google Classroom on on writing skills for mini fiction based on ecopreneurship in terms of the creativity of elementary school teacher candidates (low, medium, and high).

RESEARCH METHODOLOGY

Research Design

This research used a quasi-experimental method with a 3 x 2 factorial design, as shown in Table 1.

Table 1. 3x2 Factorial Design

Level of Creativity	Design Thinking Approach (X)	
	Assisted by Zoom Meeting Synchronization Media (X_1)	Assisted with Google Classroom Asynchronous Media. (X_2)
Low (Y_1)	X_1Y_1	X_2Y_1
Medium (Y_2)	X_1Y_2	X_2Y_2
High (Y_3)	X_1Y_3	X_2Y_3

A factorial design is a modification of the between-group design in which the researcher examines two or more categorical independent variables, each of which is examined at two or more levels.

Table 2. Research Variable

Independent Variable	*Dependent Variable*
✓ The design thinking approach is assisted by Zoom meeting synchronous media, and the design thinking approach is assisted by Google Classroom asynchronous media ✓ Level of Creativity	✓ Mini fiction based ecoprenuership writing skills

Population and Sample

1. The characteristics of Population

The characteristics of this research population are the based Ecoprenuership writing skills writing skill scores of students in the Elementary Teacher Studi Program with a design thinking approach assisted by Zoom meeting synchronous media, and the design thinking approach is assisted by Google Classroom asynchronous media.

2. Sampling

The sample of this research is Elementary School Teacher Education Students, Universitas Islam 45 Kota Bekasi, Universitas Pendidikan Indonesia, dan Universitas Kristen Indonesia Toraja There were 60 selected by purposive sampling. The reason for selecting the sample was based on the experience of students who had taken literary studies courses.

3. Sample Size

The number of samples in this research was 60 students from four campuses who collaborated in this research. The sample will be divided into two experimental class groups, where each experimental class consists of 30 students. Experimental class 1 (PGSD Ubhara Jaya and PGSD Unisma) was given treatment using a design thinking approach assisted by Zoom meeting synchronized media, while experimental class 2 (PGSD UPI and PGSD UKI Toraja) was given treatment using a design thinking approach assisted by Google Classroom asynchronous media. Each experimental class was divided into 3 groups according to the level of creativity of the students (low, medium, and high).

Research Instruments

There are two types of tests used, namely:

1. The test measures the level of creativity through the Alternative Uses Test that has been tested by J.P. Guilford (1964) as a way to classify students by their level of creativity.
2. The second test is a student worksheet to get scores on the pretest and posttest of minifiction based on ecopreneurship writing skills.

Data Analysis

The analysis of this research data was carried out using inferential statistical testing. To answer the problem formulation regarding differences in improving mini fiction based on ecoprenuership writing skills between two experimental groups, differences in improving mini fiction based on ecoprenuership writing skills between students with low, medium, and high levels of creativity, as well as the joint interaction effect between all independent variables on The dependent variable was analyzed simultaneously using the two-way ANOVA test.

The analysis process uses the SPSS 20 application with the following hypothesis test results criteria:

a. Accept H_o if the value is Sig. ≥ α value (0.05).
b. Reject H_o if the Sig. ≤ value of α (0.05)

RESULT AND DISCUSSION

The research began by grouping the samples into two experimental classes, which were categorized into three categories based on the level of creativity (low, medium, and high) through the Alternative Uses Test, which was tested by J.P. Guilford (1964). This test measures indicators of creativity based on the alternatives given by students in identifying the benefits of an item or object. The more alternatives students are given, the higher their level of creativity.

The following are the results of the grouping of experimental 1 and experimental 2 classes in terms of the results of the creativity test.

Table 3. Experimental Class of Low Creativity

	Experimental Class 1		**Experimental Class 2**	
	Low Creativity Level (X_1Y_1)		**Low Creativity Level (X_2Y_1)**	
No.	**Name Code**	**Affiliation**	**Name Code**	**Affiliation**
1	FR	UBJ	EA	UKI TORAJA
2	MR	UNISMA	MM	UKI TORAJA
3	SC	UBJ	OP	UKI TORAJA
4	AS	UBJ	AW	UKI TORAJA
5	DA	UNISMA	DY	UPI
6	EP	UBJ	TE	UPI
7	AK	UBJ	GS	UKI TORAJA
8	AM	UBJ	NA	UPI
9	IS	UBJ	EK	UKI TORAJA
10	NR	UNISMA	WM	UKI TORAJA

Table 4. Experimental Class of Medium Creativity

	Experimental Class 1		**Experimental Class 2**	
	Medium Creativity Level (X_1Y_2)		**Medium Creativity Level (X_2Y_2)**	
No.	**Name Code**	**Affiliation**	**Name Code**	**Affiliation**
1	IK	UNISMA	WS	UKI TORAJA
2	FO	UNISMA	AP	UKI TORAJA
3	MG	UBJ	RP	UKI TORAJA
4	DK	UBJ	SA	UPI
5	DA	UBJ	VS	UPI
6	AA	UBJ	AB	UKI TORAJA
7	HN	UNISMA	PL	UPI
8	TS	UBJ	DA	UPI
9	IP	UNISMA	SM	UKI TORAJA
10	DSW	UBJ	NS	UPI

Table 5. Experimental Class of High Creativity

	Experimental Class 1		**Experimental Class 2**	
	High Creativity Level (X_1Y_3)		**High Creativity Level (X_2Y_3)**	
No.	**Name Code**	**Affiliation**	**Name Code**	**Affiliation**

1	MN	UNISMA	IG	UPI
2	EL	UNISMA	KA	UPI
3	RO	UNISMA	IP	UPI
4	PP	UBJ	RR	UPI
5	AD	UNISMA	DO	UPI
6	RW	UBJ	SR	UKI TORAJA
7	IA	UNISMA	VT	UPI
8	MW	UNISMA	BN	UPI
9	SF	UNISMA	SC	UKI TORAJA
10	MA	UNISMA	DL	UKI TORAJA

After the research sample was grouped based on their level of creativity, students were then given an example of mini fictions based on ecopreneurship and general guidelines for writing as an effort by the research team to get an overview of students' initial abilities in composing ecopreneurship-based mini-fictions, and this was the first step in getting pre-test scores.

Figure 1. Pre-Test Scores : Low Creativity

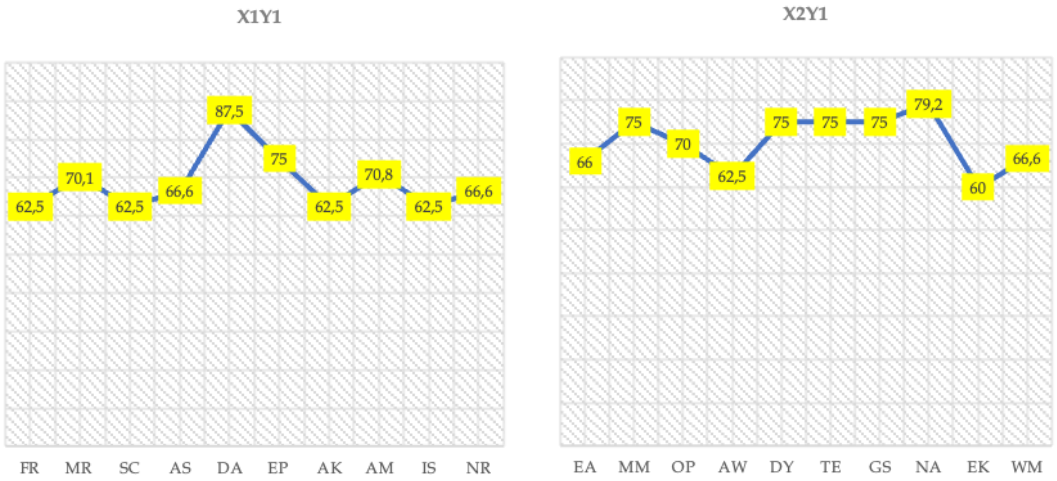


Figure 2. Pre-Test Scores : Medium Creativity

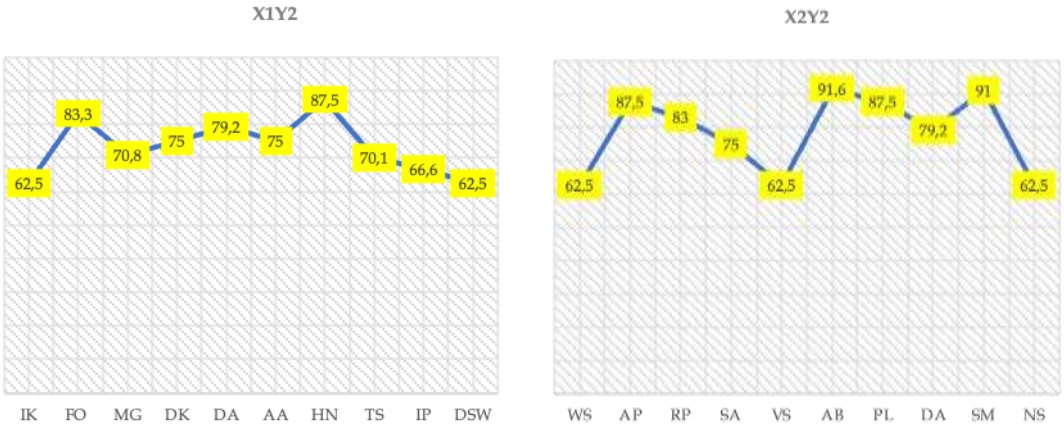
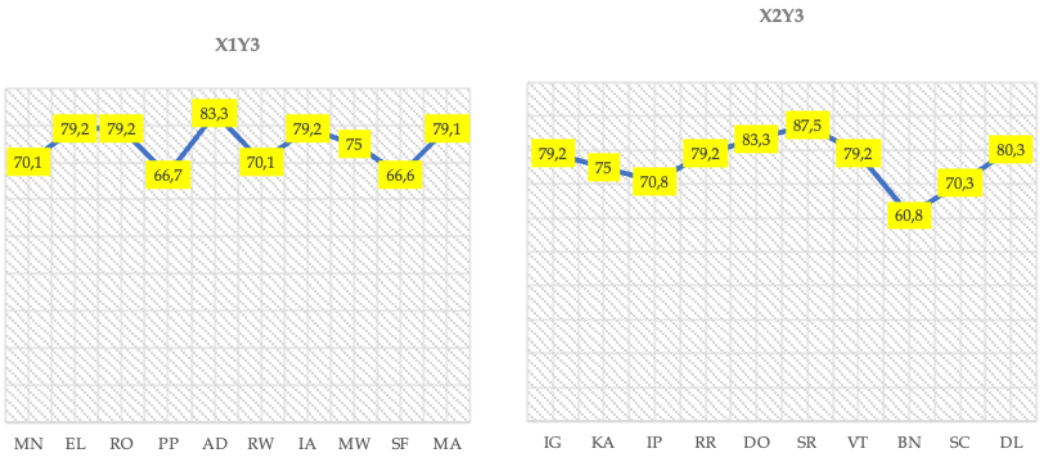


Figure 3. Pre-Test Scores : High Creativity



After the pre-test scores are known, the next step is to provide treatment according to the division of experimental class 1 and experimental class 2. Experimental class 1 (PGSD Ubhara Jaya and PGSD Unisma) is given treatment using a design thinking approach assisted by Zoom meeting synchronous media, while experimental class 2 (PGSD UPI and PGSD UKI Toraja) is given treatment using a design thinking approach assisted by Google Classroom asynchronous media. The implementation of experimental research 1 was fairly smooth, and there were no significant obstacles. Every design thinking syntax could be conveyed systematically, and the material was also conveyed well. Likewise, research activities in experimental class 2 Research activities in experimental class 2 were not very communicative when compared to experimental class 1. However, the research process in experimental class 2 was still relatively smooth, and there were no significant obstacles until it continued with the post-test.

Figure 4. Post-Test Scores : Low Creativity

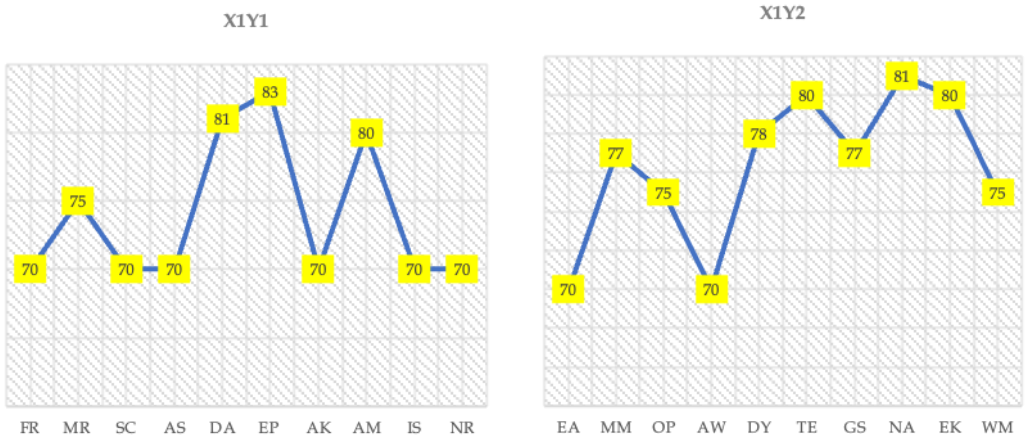


Figure 5. Post-Test Scores : Medium Creativity

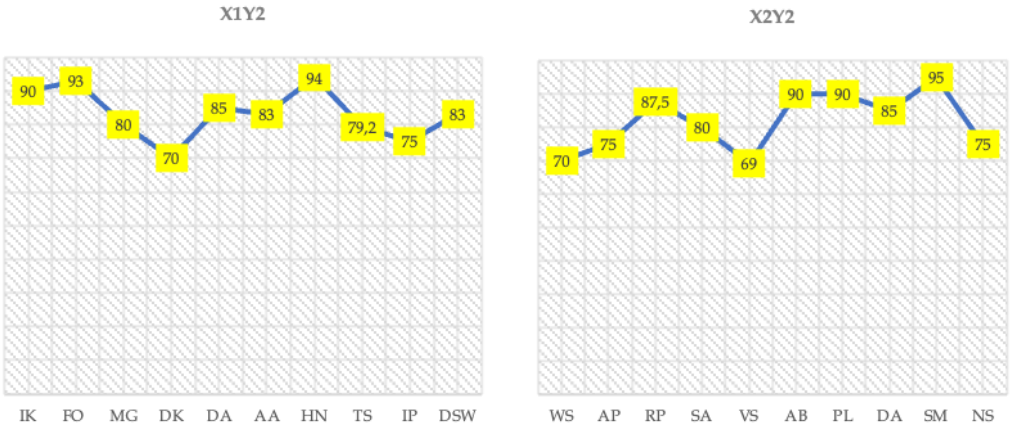
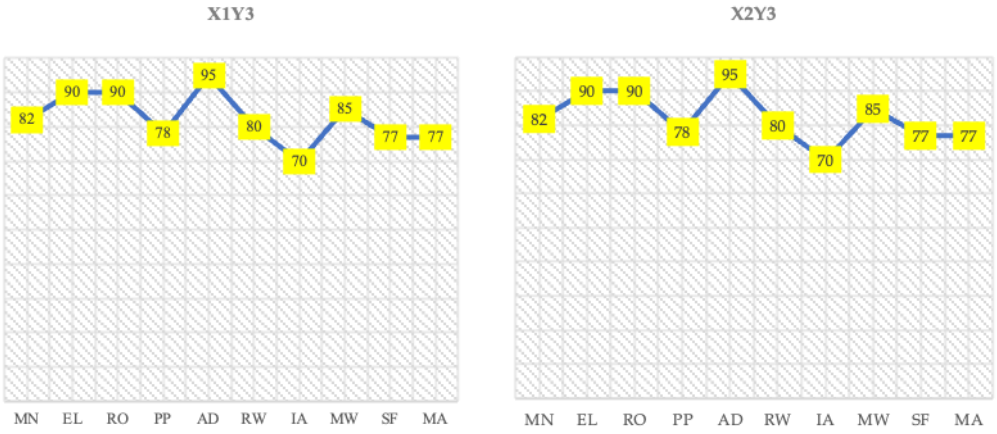


Figure 6. Post-Test Scores : High Creativity



After the pre-test and post-test values are known, the next step is to determine the N-Gain scores

Table 6. N-Gain Scores

Design Thinking Approach	Level of Creativity		
	Low (Y_1)	Medium (Y_2)	High (Y_3)
Zoom Synchronous Media Assist (X_1)	4	5	8
	1	4	14
	2	2	9
	6	5	6
	8	7	8
	1	6	12
	4	6	12
	1	4	10
	3	3	7
	4	7	8
GCR Asynchronous Media Assist (X_2)	8	8	11
	8	5	8
	7	8	11
	3	7	10

7	8	10
7	8	9
7	9	11
1	6	10
4	8	10
3	7	10

Furthermore, to analyze the data contained in Table 6, the data analysis used the two-way ANOVA test to prove the three hypotheses of this study. The following results of data analysis using the two-way ANOVA test can be seen through the output:

Table 7. Between-Subjects Factors

		Value Label	N
Design Thinking Approach (X)	1,00	Zoom	30
	2,00	GCR	30
Level of Creativity (Y)	1,00	Rendah	20
	2,00	Sedang	20
	3,00	Tinggi	20

Table 8. Tests of Between-Subjects Effects

Dependent Variable: Skor_KMF					
Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	644,333[a]	5	128,867	5,534	,000
Intercept	4100,267	1	4100,267	176,089	,000
Design_Thinking	336,067	1	336,067	14,433	**,000**
Tingkat_Kreativitas	19,633	2	9,817	,422	**,658**
Design_Thinking * Tingkat_Kreativitas	288,633	2	144,317	6,198	**,004**
Error	1257,400	54	23,285		
Total	6002,000	60			
Corrected Total	1901,733	59			
a. R Squared = ,339 (Adjusted R Squared = ,278)					

Based on the SPSS 20 Table Tests of Between-Subjects Effects output, the sig. for learning ecopreneurship-based fiction mini writing skills between students who study with a design thinking approach assisted by Zoom meeting synchronization media and Google Classroom asynchronous media is sig. (0.000) < α (0.05), then H_o is **rejected**, meaning that there is a significant average increase in mini fiction based on ecopreneurship writing skills between students who study with the design thinking approach assisted by Zoom meeting synchronization media and Google Classroom asynchronous media. Furthermore, based on the sig value of Creativity Level = (0.658) > α (0.05), H_o is accepted, meaning that there is no increase in mini fiction based on ecopreneurship writing skills between students who have low, medium, and high creativity. Furthermore, for the sig value of the interaction effect between learning using the design thinking approach assisted by zoom meeting synchronization media and google classroom asynchronous media with levels of creativity (low, medium, and high) together towards improving mini fiction based on ecopreneurship writing skills with a sig value of (0.004) < α (0.05), then H_o is **rejected,** meaning that there is an

interaction effect between learning using the design thinking approach assisted by zoom meeting synchronization media and google classroom asynchronous media with levels of creativity (low, medium, and high) together towards improving mini fiction based on ecopreneurship writing skills.

DISCUSSION

Based on the description of the findings and data analysis, it can be said that learning that uses the design thought approach assisted by Zoom meeting synchronization media and Google Classroom asynchronous media as well as levels of creativity (low, medium, and high) together can improve ecopreneurship-based minifiction writing skills. This is because there is an interaction effect between learning using the design thinking approach assisted by Zoom meeting synchronization media and Google Classroom asynchronous media in terms of the level of student creativity (low, medium, and high), jointly encouraging students to be able to produce true fiction. represents entrepreneurial values. The following ecopreneurship values that can be internalized in fiction include: (1) independence; (2) creativity; (3) daring to take risks; (4) action-oriented; (5) leadership; (6) hard work; (7) honesty; (8) discipline; (9) innovative; (10) responsibility; (11) cooperation; (12) never give up; (13) commitment; (14) realistic; (15) curiosity; (16) communicative; (17) strong motivation; (18) Caring for the environment includes respecting the earth, caring for life, and implementing patterns of production, consumption, and reproduction. (Aryanto et al., 2022; Nacu & Avasilcăi, 2014).

The results of this research are in accordance with the supporting theory, where theoretically the design thinking approach emphasizes four main pillars, namely: the pillar of balance, framework of thinking, use of tools, and pattern of approach (Georgiev & Georgiev, 2023; Liu, 2023; Suryanti et al., 2020). With these four pillars, design thinking can complement the competency mastery process to run more effectively in a fun pattern and stimulate students to be able to think creatively. It is also seen as an appropriate learning approach for improving their ecopreneurship-based mini fiction writing skills. The following stages of design thinking include discovery, interpretation, ideation and experimentation, and evaluation (Chu et al., 2018; Kangas, 2013; Tsai et al., 2023). Apart from that, the existence of supporting media, such as Zoom meeting synchronous media and Google Classroom asynchronous media, allows students to more easily carry out online learning (Mubin et al., 2022). Zoom is more secure and effective in conducting discussions or discussions of material with communication, which is supported by the features found in Zoom, such as group messaging, so that if there are audio problems, you can help with the available chat feature (Far-Far, 2021; Haqien & Rahman, 2020; Irmada & Yatri, 2021).

Google Classroom can be elevated to become a pedagogical tool to assist in changing the focus of the classroom from one that is teacher-centered and controlled to one that is learner-centered and open to inquiry, dialogue, and creative thinking on the part of learners as active participants (Budiarti, 2019; Harjanto & Sumarni, 2019; Izenstark & Leahy, 2015; Ketut Sudarsana et al., 2019; Mohd Shaharanee et al., 2016),. In addition, many Google Classrooms are chosen to be used as teaching and learning media. Apart from being easy to access and use, this application can be a means of communicating and interacting between lecturers and students in virtual classes (Graham & Borgen, 2018). By utilizing existing features, it is natural that this asynchronous medium is more often chosen in online learning.

The results of this research prove that the concept of ecopreneurship, which was internalized at mini fiction through a design thinking approach with Zoom Meeting synchronization media and Google Classroom asynchronous media based on creativity levels (low, medium, and high), was proven to have a significant influence. The results of this research include the development of several relevant researches, including: Schaltegger, (2002) revealed the results of research regarding the terminology and framework of the ecopreneurship concept in the economic field. Then the results of this research were developed again by Schaper, (2002) revealed the importance of environmental values in running a business in the economic sector. These two studies illustrate the conceptual basis for this research, although the results of these two studies are not related to the field of education. The concept of ecopreneurship is considered a form of business activity that is based on human life as part of an ecosystem (Schaltegger, 2014; Schaltegger & Wagner, 2011)

The research results that were proven to explicitly develop the concept of ecopreneurship in the field of education were carried out by Aryanto & Syaodih, (2017) providing a comprehensive picture of the implementation of ecopreneurship programs in elementary schools. The results of this research form the conceptual basis for the findings of this research because the process of internalizing ecopreneurship values can be carried out in intracurricular, co-curricular, and extracurricular learning. The results of this research are similar to this research because the concept of green behavior is an important element during the fictional mini-creation process.

The results of subsequent research, carried out again by Aryanto et al., (2019) revealed the urgency of student creativity in developing ecopreneurship-based children's literature. In its development, children's literature is considered an appropriate medium in the process of internalizing values and character formation, so that the results of this research underlie several other research results such as the process of internalizing ecopreneurship values in the preparation of children's poetry(Aryanto, Rahman, Hartati, Nurkaeti, et al., 2021), development of ecopreneurship-basedfictionmini in the context of research and development (Aryanto, Rahman, Hartati, Sumirat, et al., 2021; Aryanto, Rony, et al., 2021), assistance process for the development of ecopreneurship-basedfictionmini through the scaffolding method (Aryanto, Rony, et al., 2020), and the development of ecopreneurship-based children's literature as financial literacy content in elementary schools (Aryanto et al., 2022).

The results of research, which are explicitly relevant based on variables and research methodology, were carried out by Aryanto, Widiansyah, et al., (2020) which stated that there was a significant influence of using the design thinking approach on students' creativity in writing ecopreneurship-based poetry, but the results of this research were more focused on the composition of children's poetry and non-fiction. Apart from that, the results of this research do not explain the influence of the design thinking approach through the use of Zoom meeting synchronization media and Google Classroom asynchronous media based on the level of creativity (low, medium, and high) and are very different from the variables of this research. Therefore, based on various previous relevant studies, the position of this research is a development of research from various previous similar studies with novelty value, namely that there are no research results related to the influence of the design thinking approach assisted by Zoom synchronization media and Google Classroom asynchronous media on ecopreneurship-based mini-fiction writing skills. from the level of creativity of prospective elementary school teacher students.

The results of this research are proven to reveal the interaction effect between learning using a design thinking approach assisted by zoom meeting synchronized media and Google Classroom asynchronous media with levels of creativity (low, medium, and high) together on improving ecoprenuership-based mini-fiction writing skills with a sig value of (0.004) < α (0.05), which indicates that the design thinking approach assisted by zoom meeting synchronized media and Google Classroom asynchronous media with the level of creativity can be correlated in improving ecoprenuership-based mini-fiction writing skills. Therefore, it is hoped that the results of this research will have implications for increasing the quantity and quality of knowledge in the field of basic education. In addition, the research that has been carried out is expected to have implications for teacher innovation and creativity in using the design thinking approach through the use of the Zoom and Google Classroom applications in online learning.

This research has limitations in the methodological aspect because the characteristics of the population and sample selected purposefully cannot be generalized to measure creativity in creating mini fiction based on ecopreneurship. Therefore, there needs to be further, more complex research with random sample selection and more developed variables.

CONCLUSION

The results of this study prove that the design thinking approach assisted by Zoom meeting synchronization media and Google Classroom asynchronous media can improve students' ability to write mini fiction based on ecopreneurship with sig. (0.000) < α (0.05). However, there was no increase in mini fiction based on ecopreneurship writing skills between students who had low, medium, and high creativity. This is because the size of the creativity test in the alternative uses Guildford test does not correlate with students' creativity in writing mini fiction based on ecopreneurship. However, there is an interaction effect between learning using the design thinking approach assisted by zoom meeting synchronization media and Google Classroom asynchronous media with levels of creativity (low, medium, and high) together towards improving mini fiction based on ecopreneurship writing skills with a sig. (0.004) < α (0.05), which indicates that the design thinking approach assisted by Zoom Meeting synchronous media and Google Classroom asynchronous media with the level of creativity can be correlated in improving mini fiction based on ecopreneurship writing skills.

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AUTHOR CONTRIBUTION STATEMENT

SA, TH, and BM conceptualized the study; SA wrote the original draft; DD and BC reviewed and edited the manuscript

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