Measuring the Effect of Learning Style Preference on Learners' Argumentative Essay Writing Across Different Writing Strategies

Sabarun
Universitas Negeri Malang

Utami Widiati
Universitas Negeri Malang

Nunung Suryati
Universitas Negeri Malang

Mohamed Nor Azhari Azman
Universiti Pendidikan Sultan Idris

The investigation attempted to measure the effect of learning style preference across two different writing strategies in writing classes. The 58 subjects recruited from L2 classes comprised 19 visual, 21 auditory, and 18 kinesthetic learners. A 3x2 analysis of variance test was applied to work with the experimental data. The output confirmed a statistically significant interaction effect occurred among types of writing strategy (x1) and learning style preference (x2) on learners' writing performance (y) at $F (2, 57) = 5.754, p = 0.006$. There was also a significant effect of learning style preference at $F (1, 57) = 70.949, p = 0.000$. The analysis showed that learning style preference differed significantly among the three groups. Here, visual and auditory performed better on average than kinesthetic learners for writing performance. The main effect also confirmed a statistically significant effect of types of writing strategy occurred at $F (2, 57) = 22.884, p = 0.000$. Here, graphic organizers (GOs) differed significantly from non-graphic organizers (NGOs).

Keywords: effect, learning styles, writing strategy, writing performance

INTRODUCTION

Individuals' learning style is regarded as an essential factor in English Foreign Language classes (Castro & Peck, 2005). It plays a vital role to select the appropriate teaching style, strategies, and approach (Cimermanová, 2018). Learning style is the student's way to learn better (Ajideh, Zohrabi, & Pouralvar, 2018; Moenikia & Babelan, 2010). Students study differently and the way students' study will determine the learning success (Afshar & Bayat, 2018). The most frequently applied learning styles are visual, auditory, and kinesthetic (Gilakjani, 2012; Bishka, 2010). Understanding how learners study a new language is a vital component to the process (Tabatabaei & Mashayekhi, 2013) as this helps learners to

increase their L2 learning (Liu & He, 2014). Ajideh et al. (2018) stated that learners use their own styles of learning in the classroom.

In this case, a suitable atmosphere should be created by teachers to accommodate learners' needs. Because learning style is important for successful learning, the study applied the VAK (visual, auditory, and kinesthetic) model proposed by Fleming (2006) in learning argumentative essay. The VAK model by Siregar, Siregar, and Melani (2018) is a type of learning that focuses on three learning styles: seeing (visual), hearing (auditory), and moving (kinesthetic). VAK theorists believe that learning will be effective with regard learning styles and utilize the potential of learners. Previous investigations revealed that the VAK model is appropriate to improve writing skills (Masela & Subekti, 2021; Kusumawarti, Subiyantoro, & Rukayah, 2020; Sabarun, Hamidah, & Marsiah, 2020; Aliakbari & Tazik, 2019; Ramadian, Cahyono, & Suryati, 2019; Foroozandehfar & Khalili, 2019; Setyoningsih, 2019; Rahmawati, Cahyono, & Anugerahwati, 2018; Pratama, Rahmawati, & Irfani, 2017; Tyas & Safitri, 2017; Kayalar & Kayalar, 2017; Rahayu, Riyana, & Silvana, 2017; Balci, 2017; Kazemi, Mahdavi-Zafarghand, & Tahriri, 2016; Rambe, 2014). While some scholars have investigated learners' learning style preference in L2 writing, only limited attention has been given on learning style involving writing strategy in writing an argumentative essay as a basis for analysis. It is, therefore, the purpose of this study to look for the effect of learners' learning style preference of VAK in writing argumentative essay using two different writing strategies.

For some college learners, writing an argument essay is considered to be the hardest of writing skills to learn (Zarrabi & Bozorgian, 2020; Liunokas, 2020; Mohamed Rubiaee et al., 2020; Morris et al., 2018; Maysuroh, 2017; Zhao, 2017). Argumentative essay is a type of discourse is which the writer presents a pattern of reasoning supported by evidence, facts, and examples while making refutation of counterclaim to support the claim (Billings & White, 2016). This technique allows a writer to take a stance, disagree with opposing ideas, refute the counterclaim, and convince the audience to agree with his/her ideas (Chase, 2011). It requires critical thinking skills (Vögelin et al., 2019). Argument essay is the most essential genres learn at higher education and plays a vital role as a soft skill needed in today's life. Being able to write an appropriate argument essay gives learners many benefits. In higher academic settings, the argument essay is an important instrument for learners to persuade other people, to argue their stance, and defend their opinion.

In college and public places, learners can persuade others and support proposals and ideas. Therefore, it is obvious that writing an argument essay is a strongly needed skill for college students. However, learners still have difficulties when composing an argument essay. Previous studies have elaborated learners' problems in composing an argument essay (Nindya & Widiati, 2020; Beckett & Kobayashi, 2020; Ozfidan & Mitchell, 2020). Dang, Chau, and Tra (2020) confirmed that learners met problems in linguistic competence and insufficient critical thinking. Meanwhile, Zhao (2017) found the general problems in composing argument essays are organizing ideas, stating the thesis, combining sources, stating the claim, presenting supporting evidence, making refutation content, and developing the essay. Oktoma (2014) found that L2 students have difficulties in linguistic, cognitive, and psychological problems. Many investigations also mentioned the lack of the features of argument patterns and having limited knowledge of transition words (Uzun, 2017; Mohamed, 2016; Saito, 2010).

Based on teaching experience, the researcher also faces similar problems in argumentative essay classes. Students frequently have difficulties in organizing ideas, refuting counterclaims, and defending the claim. Learners also still have problems with grammar rules, writing conventions, taking a stance on a debatable topic, providing support, and convincing readers to agree with their stance. Some scholars have identified some factors contributing to these problems such as inadequate teaching methods (Tayib, 2015) such as teacher-centered classroom instruction (Shah et al., 2014). It is, therefore, necessary to improve the teaching method (French & Kennedy, 2016) and avoid conveying materials monotonously and not enjoying the presentation (Zakrajsek, 2018). Consequently, there should be more chance for learners to practice writing and share ideas in the argument writing class (Styati & Latief, 2018). Learners should be more frequent in developing ideas into an argument essay. They should be familiar to collect ideas and manage their organization. Here, learners need a process to provide the writing product.

In addition, some scholars have suggested using graphic organizers (GOs) in argumentative writing class (Hafidz, 2021; Boykin et al., 2019). Other scholars also suggested the implementation of GOs to improve writing skills (Parker, 2013; Servati, 2012). Therefore, to cope with the difficulties in writing class, the study proposes graphic organizers (GOs) as an alternative method in argument writing class. The graphic organizer is a learning tool that assists learners to organize ideas (Bishop et al., 2015, p. 6). Numerous investigations have been made on the use of GOs in L2 writing. Tayib (2015) found that GOs promote understanding and improve text organization. Miller (2011) confirmed that GOs help learners summarize their thoughts in a systematic way. Bishop et al. (2015) believed that GOs are powerful in addressing the difficulties of low-skilled writers. Likewise, Dexter and Hughes (2011) stated that GOs can increase higher-order thinking skills. Despite investigations on the use of GOs in L2 writing, little attention has been given to the significance of GOs and learning style preference. Figure 1 describes the model of argumentative graphic organizers used in this study.

FIGURE 1
ARGUMENTATIVE GRAPHIC ORGANIZERS
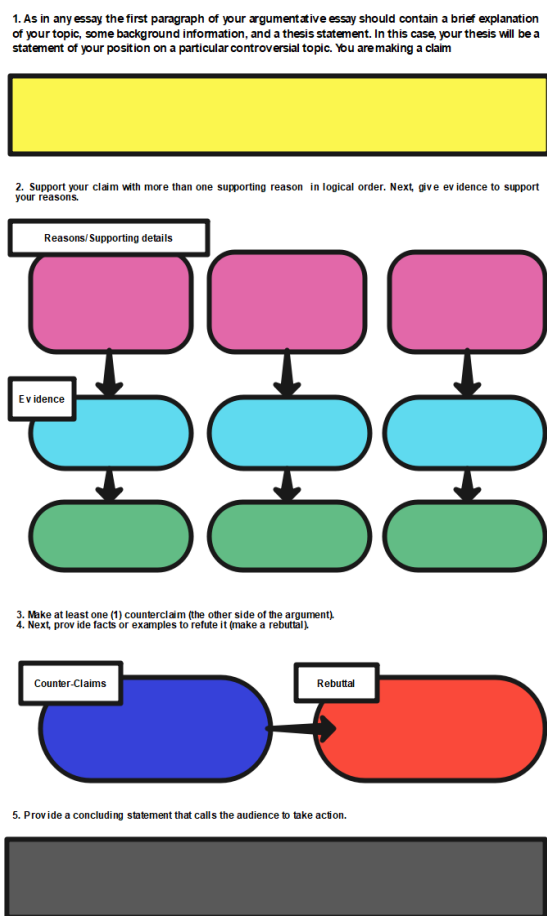
The study attempts to measure the effect of the learners' learning style preference of VAK in writing an argumentative essay using two different writing strategies (GOs versus non-GOs). This study has some differences from previous studies. The current study measures the interaction effect among learning styles preference and writing strategy (graphic organizers versus non-graphic organizers). The research questions were: (a) Do learning styles give effect on learners' argumentative writing performance? (b) Do writing strategies (graphic organizer versus listing ideas) give effect on learners' argumentative writing

performance? (c) Is there any interaction effect between learning styles and writing strategies on learners' argumentative writing performance? The novelty is that the research involves learning styles, which are assumed to be the factors contributing to successful learning.

METHODOLOGY

The investigation used a quasi-experimental design and a 3x2 analysis of variance with participants' types of learning style: visual versus auditory versus kinesthetic (x1); and types of writing strategy: non-graphic organizers versus graphic organizers (x2): as between-participants factors. The study involved EFL participants consisting of three groups based on learning style (x1): visual ($n = 19$), auditory ($n = 21$), kinesthetic ($n = 18$); types of writing strategy (x2): types of writing strategy: non-graphic organizers ($n = 28$), graphic organizers ($n = 30$). The total number of the subjects was 58 students. The independent variables were learning styles (x1) and writing strategy (x2). Meanwhile, the dependent variable was argumentative writing performance (y). The theoretical framework is illustrated in Figure 2.

FIGURE 2
THEORETICAL FRAMEWORK

A 3x2 ANOVA was applied to analyze the two-way interaction between variables and simple main-effects. In the present study, it was applied to determine if the interaction among learning styles (x1) and writing strategy (x2) differed significantly on the learners' argumentative writing performance (y). Here, writing strategy and learning styles were factors that affected learners' writing performance. Table 1 summarizes the writing strategies (GO/non-GO) and learning styles of the 58 L2 participants.

TABLE 1
THE PARTICIPANTS

Writing Strategy	Learning Styles			Total
	Visual	**Auditory**	**Kinesthetic**	
Non-Graphic Organizers (NGOs)	12	8	8	28
Graphic Organizers (GOs)	7	13	10	30
Total	19	21	18	58

Study Design

This investigation applied a pre/post-test experiment design in order to collect data on learners' progress in writing performance. The study process is summarized in Figure 3.
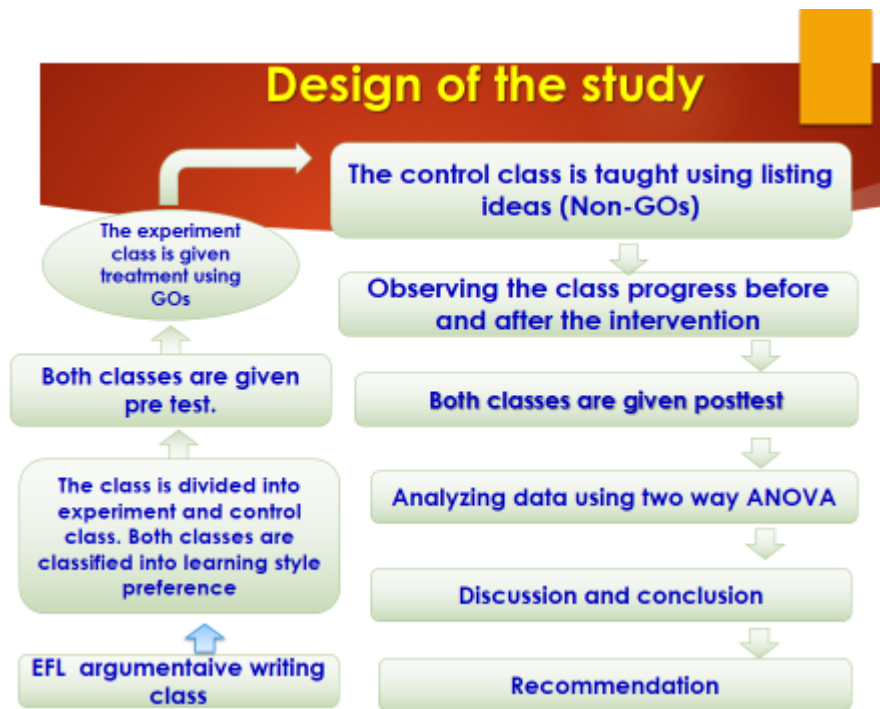
FIGURE 3
THE RESEARCH DESIGN

Figure 3 describes how the data of two intact classes were collected. The two predictor variables involved in the study were learning styles (x1), writing strategy (x2), and learners' argumentative writing performance (y) as the outcome variable. To collect the data, a test and questionnaire were administered. At the first meeting, subjects were classified into two groups: experiment and control groups. Additionally, both groups were also classified into visual, auditory, and kinesthetic based on their learning style preference using the VAK questionnaire. Here, a perceptual learning-style preference questionnaire of the VAK model was used. Then, treatment was given in weeks 4–10 to both groups. The experiment group (n = 30) was treated using GOs in a pre-writing strategy. In contrast, the control group (n = 28) was taught using listing ideas in pre-writing strategy. It took six weeks to implement the two conditions in both groups. During the class, each class was given the same materials on argumentative essay writing, covering the structure of argument essay, claim, counterclaim, evidence, and conclusion. They were directed to apply three stages in writing. Stage 1 was planning. In the planning stage, both classes received the features of argumentative essay. In this case, each learner selected the topic. Stage 2 was drafting, where learners composed their draft. Each class was taught using a different treatment. Here, before writing the first draft, each class was given different treatments: GOs for the experimental class and listing ideas for the control class. Stage 3 was editing and publishing. In this stage, each learner should revise and edit his/her composition. Finally, they composed their argumentative essay and handed this to the lecturer. Then, individually, each learner was assigned to do the post-test (meeting 14) to see the effect of the treatment procedure. Both groups were asked to compose an argument essay of about 550–600 words. The learners' composition was scored using the scoring method proposed by Oshima and Hogue (2006, p. 316).

Significance Test

The 3x2 two-way analysis of variance meant that there were two categorical independent variables and a total of six conditions (3 x 2 = 6). The two-way ANOVA tested for main effects and interaction effects among all combinations of two factors on an outcome variable. In the present study, a significance level of

0.050 worked well. It indicated a 5% risk of concluding that a difference existed. The differences among the means were considered significant if the *p* value was smaller than 0.050, meaning that the levels in the corresponding factor differed significantly and conversely. In the present study, there were two factors contributing the learners' writing performance—factor A (learning style preference) and factor B (types of writing strategy)—and factor interaction (AB). Therefore, the model was:

$$Y_{ij} = \mu + \alpha + \beta + {} + \alpha\beta + \varepsilon_{ijkl}$$

Notes:

Y_{ij}	:	1st observation in cell (i,j)
μ	:	overall (grand) mean
$\alpha\ \beta$	:	main effects of factors A (types of learning style), factor B (writing strategy).
$\alpha\beta$	:	two-way interactions
ε_{ijkl}	:	independent random variables

Data Analysis

To answer the three research questions, a two-factor ANOVA was conducted to measure the interaction effect between types of learning style and writing strategy, simultaneously on writing performance. The analysis also measured the main effect of both variables partially.

Assumption Test

The test assumptions applied in the study were the normality test and homogeneity test. The sig. value of Kolmogorov–Smirnov was 0.891 > 0.050, showing that the data were normally distributed. Meanwhile, the output Levene's Test confirmed that the sig. value of writing performance based on mean was 0.303 > 0.05, indicating the data did not violate the homogeneity.

RESULT

Data Presentation

Table 2 presents the average score for each combination of groups of the outcome variables. The table explains that the average score for visual learners of non-graphic organizers (NGOs) was 71.75 (SD 8.44; *n* = 12); auditory learners 69.88 (SD 8.09; *n* = 8); kinesthetic learners 52.75 (SD 6.96; *n* = 8). The total mean was 65.78 (SD 11.38; *n* = 28). Then, the average score for visual learners of graphic organizers (GOs) was 88.71 (SD 5.02; *n* = 7); auditory learners was 80.46 (SD 6.77; *n* = 13); kinesthetic learners 53.30 (SD 7.18; *n* = 10). The total mean was 73.33 (SD 16.08; *n* = 30). The output confirmed that the participants using graphic organizers (GOs) had higher achievement than those who did not use graphic organizers. The average score for each variable is included in Table 2.

TABLE 2
THE MEANS SCORE

Learning Style	Pre-writing Strategy	Mean	Std. Deviation	N
Visual learners	Non-Graphic Organizers (NGO)	71.7500	8.44366	12
	Graphic Organizers (GO)	88.7143	5.02375	7
	Total	78.0000	11.07550	19
Auditory learners	Non-Graphic Organizers (NGO)	69.8750	8.09652	8
	Graphic Organizers (GO)	80.4615	6.76530	13
	Total	76.4286	8.84065	21

Kinesthetic learners	Non-Graphic Organizers (NGO)	52.7500	6.96419	8
	Graphic Organizers (GO)	53.3000	7.18099	10
	Total	53.0556	6.88111	18
Total	Non-Graphic Organizers (NGO)	65.7857	11.38991	28
	Graphic Organizers (GO)	73.3333	16.07597	30
	Total	69.6897	14.40176	58

The Interaction Effect Between Learning Style Preference and Types of Writing Strategy

Table 3 confirms the interaction effect between learning style preference and types of writing strategies.

TABLE 3
TESTS OF BETWEEN-SUBJECT EFFECTS

| Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Corrected model	9075.029a	5	1815.006	34.353	.000	.768
Intercept	266055.740	1	266055.740	5035.662	.000	.990
Learning style	7497.131	2	3748.566	70.949	.000	.732
Writing strategy	1209.064	1	1209.064	22.884	.000	.306
Learning style * prewriting strategy	608.038	2	304.019	5.754	.006	.181
Error	2747.384	2	52.834			
Total	293508.000	58				
Corrected total	11822.414	57				

a. R Squared = .768 (Adjusted R Squared = .745)

The important rows are the types of learning styles, writing strategy, and learning styles * writing strategy rows, and these are highlighted. The table confirms that the Adjusted R Squared was 0.745. This means that the variables' (learning styles and writing strategy) contribution to writing performance was about 74.50%. The rest was outside the investigation of the study. The output showed a statistically significant interaction between learning style preference and types of writing strategy on the learners' writing performance at the MS 304.019, $F_{(2.57)} = 5.754$, $p = 0.006$, eta 0.181. The multiple comparison is made in Table 4.

TABLE 4
LEARNING STYLE * PRE-WRITING STRATEGY

Learning Style	Writing Strategy	Mean	Std. Error	95% Confidence Interval	
				Lower Bound	Upper Bound
Visual	Non-Graphic Organizers (NGO)	71.750	2.098	67.539	75.961
	Graphic Organizers (GO)	88.714	2.747	83.201	94.227
Auditory	Non-Graphic Organizers (NGO)	69.875	2.570	64.718	75.032
	Graphic Organizers (GO)	80.462	2.016	76.416	84.507
Kinesthetic	Non-Graphic Organizers (NGO)	52.750	2.570	47.593	57.907
	Graphic Organizers (GO)	53.300	2.299	48.688	57.912

The table explained that the mean score of for visual learners of non-graphic organizers (NGOs) was 71.75 (SE 2.10); of GOs was 88.71 (SE 2.75); for auditory learner non-graphic organizers (NGOs) was 69.88 (SE 2.57); of GOs was 80.46 (SE 2.02); for kinesthetic learner non-graphic organizers (NGOs) was 52.75 (SE 2.57); of GOs was 53.30 (SE 2.30). The output confirmed that the participants using graphic organizers (GOs) had higher achievement than those who did not use graphic organizers. It was said that graphic organizers (GOs) outperformed better than non-graphic organizers in their writing performance for every learning style preference. The plot of mean writing performance for each combination of groups is shown in Figure 4.

FIGURE 4
INTERACTION EFFECT BETWEEN LEARNING STYLE PREFERENCE AND WRITING STRATEGY (NON-GOs VERSUS GOs) IN WRITING AN ARGUMENTATIVE ESSAY
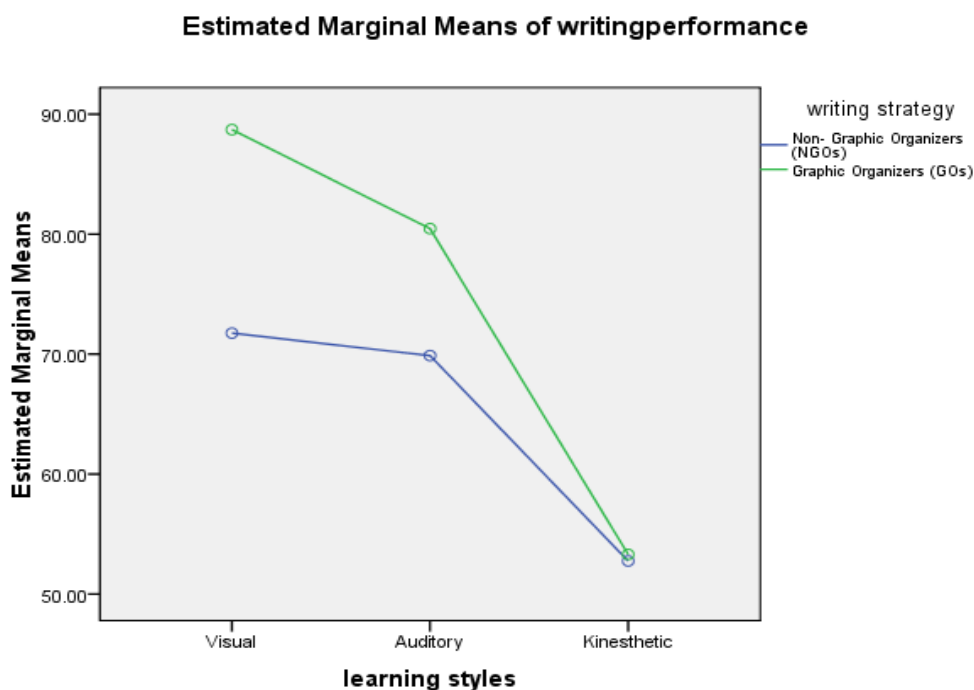
The Main Effect of Learning Style Preference

Table 3 shows that the mean square (MS) of learning style was 3748.566, $F_{(2.57)} = 70.949$, $p = 0.000$, eta 0.732. As α was smaller than 0.05, it was believed that the different learning style preference gave facilitative effect on writing performance. This means that learning style preference differed significantly in writing an argumentative essay. It was evidenced that visual learners obtained the highest scores followed by auditory and kinesthetic learners as shown in Table 5.

TABLE 5
LEARNING STYLE

Learning Style	Mean	Std. Error	95% Confidence Interval	
			Lower Bound	Upper Bound
Visual	80.232	1.728	76.764	83.701
Auditory	75.168	1.633	71.891	78.445
Kinesthetic	53.025	1.724	49.566	56.484

The output shows the means score and standard errors of each group of learners. The means score for visual learners was 80.23 (SE 1.73); for auditory learners was 75.17 (SE 1.63); for kinesthetic learners was 53.03 (SE 1.72). This indicates that the visual learners achieved better than auditory and kinesthetic learners. The multiple comparison in Table 6 describes the mean difference among the three types of learning styles.

TABLE 6
MEAN DIFFERENCE

(I) Learning Style	(J) Learning Style	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
Visual	auditory	1.5714	2.30145	.775	-3.9810	7.1239
	kinesthetic	24.9444*	2.39081	.000	19.1764	30.7125
Auditory	visual	-1.5714	2.30145	.775	-7.1239	3.9810
	kinesthetic	23.3730*	2.33477	.000	17.7402	29.0059
Kinesthetic	visual	-24.9444*	2.39081	.000	-30.7125	-19.1764
	auditory	-23.3730*	2.33477	.000	-29.0059	-17.7402

The output indicates pairwise differences between (1) visual and auditory learners; (2) visual and kinesthetic learners; and (3) auditory and kinesthetic learners. From the output, the mean differences among three types of learning styles can be seen. The mean difference (Md) between visual and auditory learners was 1.57 (SE 2.30, $p = 0.775$). As these are not significant, the types of learning style were equal and both contributed to writing performance. Then, the Md between visual and kinesthetic learners was 24.94 (SE 2.40, $p = 0.000$), indicating a significant difference between visual and kinesthetic learners. Next, the Md between auditory and kinesthetic learners was 23.37 (SE 2.33, $p = 0.000$). It was stated that there is a significant difference between visual and kinesthetic learners, and between auditory and kinesthetic learners. However, there was no significant difference between visual and auditory learners as shown in Table 7.

TABLE 7
WRITING PERFORMANCE

Tukey HSD		Subset	
Learning Style	N	1	2
Kinesthetic	18	53.0556	
Auditory	21		76.4286
Visual	19		78.0000
Sig.		1.000	.781

The Main Effect of Writing Strategy
Table 8 reports the mean square (MS) of types of *writing strategy* on the learners' writing performance as 1209.064, F (1.57) = 22.884, $p = 0.000$, eta 0.306; α was lower than 0.05, indicating that types of *writing strategy* gave effect on the learners' writing performance. It was also evidenced that NGOs (M= 64.79) scored lower than GOs (M= 74.16).

TABLE 8
WRITING STRATEGY

Writing Strategy	Mean	Std. Error	95% Confidence Interval	
			Lower Bound	Upper Bound
Non Graphic Organizers (NGO)	64.792	1.399	61.985	67.599
Graphic Organizers (GO)	74.159	1.370	71.409	76.908

The output confirmed that the Estimated Marginal mean score of non-graphic organizers (NGOs) was 64.79 (SE 1.40). In contrast, the Estimated Marginal mean score of graphic organizers (GOs) was 74.16 (SE 1.37). It can be stated that graphic organizers (GOs) outperformed the non-graphic organizers (NGOs) in their writing performance as seen in the pairwise comparison in Table 9.

TABLE 9
PAIRWISE COMPARISONS

(I) Writing Strategy	(J) Writing Strategy	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval for Difference	
					Lower Bound	Upper Bound
Non-Graphic Organizers (NGOs)	Graphic organizers (GOs)	-9.367*	1.958	.000	-13.296	-5.438
Graphic organizers (GOs)	Non-Graphic Organizers (NGOs)	9.367*	1.958	.000	5.438	13.296

The output indicated pairwise differences between (1) non-graphic organizers (NGO) and graphic organizers (GOs). From the output, a significant difference is observed between non-graphic organizers (NGOs) and graphic organizers (GOs) ($p < .0005$). The output showed that the mean difference between non-graphic organizers (NGOs) and graphic organizers (GOs) was −9.367*, SE 1.958, $p = 0.000$. The p values were smaller than 0.05, indicating that the mean difference was significant, i.e., that the writing strategy differed significantly in writing an argumentative essay. Students using graphic organizers (GOs) achieved better than those who did not.

To sum up, the two-way analysis of variance concluded the whole analysis of interaction effect among predictor variables on the learners' writing performance and the simple main effect of each variable as seen in Table 10.

TABLE 10
SUMMARY OF TWO-WAY ANALYSIS OF VARIANCE

Source	Variable	df	Sum of squares	Mean square	F value	P value	Conclusion
Main effect (1)	Learning style preference	1	7497.131	3748.566	70.949	0.000	significant
Main effect (2)	Types of writing strategy	2	1209.064	1209.064	22.884	0.000	significant
Interaction effect (1,2)	Learning style preference and types of writing strategy	2	608.038	304.019	5.754	0.006	significant
Error		52	2747.384	52.834			
Total		58	293508.000				

The analysis was used to examine the effect of learning style preference (x1) and types of writing strategy (x2) on learners' writing performance (y). The output confirmed a statistically significant interaction effect between types of learning style preference (x1) and writing strategy (x2) on learners' writing performance (y) at F (2.57) =5.754, p = 0.006. The simple main effect analysis confirmed a statistically significant effect of learning style preference at F (1.57) = 70.949, p = 0.000. The analysis showed that learning style preference differed significantly among the three groups in argumentative writing performance. Here, both visual and auditory learners performed better in writing performance than kinesthetic learners on average. The main effect also confirmed a statistically significant effect of types of writing strategy at F (2, 57) = 22.884, p = 0.000. Here, graphic organizers (GOs) differed significantly from non-graphic organizers (NGOs).

DISCUSSION

The findings reveal a significant interaction effect between learning style preference (x1) and types of writing strategy (x2) on learners' writing performance (y) at F (2.57) =5.754, p = 0.006. The simple main effect analysis confirms a statistically significant effect of learning style at F (1.57) = 70.949, p = 0.000. The analysis shows that learning style preference differs significantly among the three groups in argumentative writing performance. On average, both visual and auditory learners outperform kinesthetic learners on writing performance. The main effect also confirms a statistically significant effect of types of writing strategy at F (2.57) = 22.884, p = 0.000 on writing performance. In this case, graphic organizers (GOs) differ significantly from non-graphic organizers (NGOs).

Dealing with the finding that learning style preference gives effect on learners' writing performance, the finding is supported by other scholars (Kusumawarti et al., 2020; Pratama et al., 2017; Kayalar & Kayalar, 2017; Rahayu et al., 2017; Rambe, 2014; Gilakjani, 2012). There are some advantages of the VAK learning model in L2 writing classes; e.g., learners can learn in different styles and be more easily focused and engaged. However, there are also disadvantages such as teachers that find it hard to teach learners with various learning styles. In such cases, teachers may need more energy to teach writing. The implication is that language instructors should consider learners' learning style as well as the teachers' teaching styles, and these should be complementary Due to limited time, this study focuses only on two predictor variables and one outcome variable. Further investigation can expand to other variables considered to be potential factors for successful writing, such as involving learners' motivation, gender difference, parent economic status, learning environment, school discipline, self-efficacy, and interest in writing. The research is also limited by a small sample size of only 58 learners. It is expected that further investigation will yield sample sizes adequate for generalizing the results to the larger population.

The finding that graphic organizers (GOs) differ significantly from non-graphic organizers (NGOs) on writing performance is in accordance with earlier studies that found GOs to be an effective strategy to improve writing skills (Ningrum & Crosthwaite, 2020; Rahmat, 2020; Setyowati, Sukmawan, & El-Sulukiyyah, 2020; Anderson et al., 2018; Anggraeni & Pentury, 2018; Maharani, 2018; Wahyuni & Umam, 2017; Vitanofa & Anwar, 2017; Setyowati, Sukmawan, & Nurmansyah, 2017; Jumariati & Sulistyo, 2017; Khalaji, 2016; Aunurrahman, Hamied, & Emilia, 2016; Khatib & Meihami, 2015; Mustafa & Samad, 2015; Meera & Aiswary, 2014; Robinson & Kiewra, 1995). The study evidence that GOs can be used successfully in L2 argumentative writing classes. It encourages learners to motivate writing argumentative essay better. It fosters learners to write, improves writing skills, and establishes a connection among learners. To conclude, the use of GOs helps learners gain better writing quality by prompting ideas before writing. Learners can easily decide the concept before writing, which assists them to develop ideas. The other advantages of using GOs in argumentative writing class are that learners can easily determine the thesis statement/claim, give evidence, and give refutation to the counterclaim. Therefore, GOs are effective for learners' mastery of the features of an argumentative essay.

RECOMMENDATION

This study only focuses on types of learning styles and writing strategy within a small sample of learners. It is recommended, therefore, that the researchers next investigate similar topics involving other potential variables assumed to give contribution for successful learning such learners' motivation, self-efficacy, and interest. Additionally, it is advisable that other investigators perform similar studies with other writing genres, such as narrative, descriptive, or expository essay, with a broader sample size. Lastly, another investigation needs to be performed to measure whether GOs are equally effective or not as learning tools for learning other language skills.

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