

THE INFLUENCE OF GENDER AND DIGITAL GRAPHIC ORGANIZERS ON WRITING AND READING PERFORMANCE AT HIGHER EDUCATION

Tazkiyatunnafs Elhawwa^{1*}

University of Muhammadiyah Palangkaraya
(tazkiyatunnafs.elhawwa@umpr.ac.id)

Received: November 2024; Revised: November 2024; Accepted: December 2024

ABSTRACT

Abstract: The study attempted to elaborate the effect of gender and digital graphic organizers toward reading and writing at higher education. The 50 subjects were L2 learners consisting of male (n=24) and female (n=26). The analysis of two-way MANOVA demonstrated The F value of Wilks' Lambda for gender was , $F(1, 49) = 6.765, p = 0.003$; Wilks' $\Lambda = 0.769, \eta^2 = 0.23$; digital graphic organizer was $F(1, 49) = 5.474, p = 0.007$; Wilks' $\Lambda = 0.804, \eta^2 = 0.19$. Since the eta squared was 0.23 (for gender) and 0.19 (for digital graphic organizers), it indicated that the effect size for gender was larger than digital graphic organizers. Then, the p value of Wilks' Lambda for the interaction effect between gender and digital graphic organizers toward reading and writing was $p = 0.144$. This demonstrated no interaction effect between gender and digital GOs simultaneously on reading and writing at $F(1,49) = 2.024, p = 0.144$; Wilks' $\Lambda = 0.917, \eta^2 = 0.083$. This finding revealed that females had better achievement on reading and writing; and teaching using digital graphic organizer can improve both reading and writing.

Key Words: gender; graphic organizers; influence; reading; writing

ABSTRAK

Penelitian ini mencoba untuk menguraikan pengaruh gender dan pengatur grafis digital terhadap membaca dan menulis di pendidikan tinggi. Subjek yang berjumlah 50 orang adalah pembelajar L2 yang terdiri dari laki-laki (n=24) dan perempuan (n=26). Analisis MANOVA dua arah menunjukkan nilai F Wilks' Lambda untuk gender adalah , $F(1, 49) = 6,765, p = 0,003$; Wilks' $\Lambda = 0,769, \eta^2 = 0,23$; pengatur grafis digital $F(1, 49) = 5,474, p = 0,007$; Wilks' $\Lambda = 0,804, \eta^2 = 0,19$. Karena eta kuadratnya adalah 0,23 (untuk gender) dan 0,19 (untuk penyelenggara grafis digital), hal ini menunjukkan bahwa ukuran efek untuk gender lebih besar dibandingkan penyelenggara grafis digital. Kemudian, nilai p value Wilks' Lambda untuk pengaruh interaksi antara gender dan digital grafis organiser terhadap membaca dan menulis adalah $p = 0,144$. Hal ini menunjukkan tidak adanya pengaruh interaksi antara gender dan GO digital secara simultan terhadap membaca dan menulis pada $F(1,49) = 2.024, p = 0.144$; Wilks' $\Lambda = 0,917, \eta^2 = 0,083$. Temuan ini menunjukkan bahwa perempuan mempunyai prestasi lebih baik dalam membaca dan menulis; dan pengajaran menggunakan pengatur grafis digital dapat meningkatkan kemampuan membaca dan menulis.

Kata Kunci: gender; pengatur grafis; pengaruh; membaca; menulis

How to Cite: Elhawwa, T. (2024). The Influence of Gender and Digital Graphic Organizers on Writing and Reading Performance at Higher Education. *IJEE (Indonesian Journal of English Education)*, 11(2), pages 343-356, doi: 10.15408/ijee.v11i2.42349

INTRODUCTION

Writing is urgently needed in today's world. Through writing, people can share ideas, and inform some important things. Kassem (2017) states that writing is a complex course. It is a complicated skill and it is hard to learn. It requires grammar rule mastery, vocabulary, sentence structure, and organizing ideas. Additionally, learners should focus on linguistic skills such as diction, spelling,

*Corresponding author

IJEE (Indonesian Journal of English Education), 11 (2), 2024

P-ISSN: 2356-1777, E-ISSN: 2443-0390 | DOI: 10.15408/ijee.v11i2.42349

This is an open access article under CC-BY-SA license (<https://creativecommons.org/licenses/by-sa/4.0/>)

punctuation, capital-small letters, conjunctions, subject verb agreement, planning the essay, and structuring ideas. Some investigations indicated that university students still got difficulties in composing essays (Abbas & Herdi, 2018; Ariyanti & Fitriana, 2017; Boyle, 2024; Liunokas, 2020; Peloghitis, 2017; Sabarun, et.al, 2024; Syafe'i & Miftah, 2020). They found that most learners frequently got difficulties in vocabulary, organization, mechanics, written conventions etc.

This study focuses on argument essay writing. It is the hardest writing genre (Zhao, 2017). It involves critical thinking skills to structure the argument (Vögelin et al., 2019). Moreover, Rahmawati, et.al (2018) found that learners had problems in writing argument essay in four aspects. They are cognitive aspect (less information on argument essay features), linguistic aspect (thesis statement, claim, counterclaim, mechanics, sentence structure, and evidences), and psychological aspect (unmotivated, making errors, low self-efficacy, and low of self-esteem). Some scholars suggest using collaborative writing in second language writing instruction (Susanti, et.al.2020). Some others proposed graphic organizers as an alternative technique to improve the quality of teaching (Enighe, 2024). Therefore, it is necessary to apply the effective learning interventions to promote learners' writing skills.

Besides writing, mastering reading skill is also important for EFL learners. Being able to comprehend the written texts is very crucial for EFL learners. To strengthen the learners' ability in both skills, this investigation proposes the application of graphic organizers (GOs). A graphic organizer (so-called GO) is a visual technique to assist learners to structure ideas (Daniels, 2020; Janelle, 2020; Lynch, 2021; Marchant, 2023). Boykin et al. (2019) described GOs as tools that allow students to visually collect, relate, and display ideas. Meanwhile, Colliot and Jamet (2021) defined GOs as a tool for representing, modeling, and illustrating ideas in graphic or visual formats that teachers use to help students learn. GOs are useful pedagogical tools because they let learners to visually and physically arrange content and concepts, which facilitates learning and information acquisition. Brady et al. (2021) argued that students who employ GOs are more likely to internalize the content of what they are taught. Teaching students how to use GOs in the classroom can greatly improve their CT skills. Combining GOs with the teaching content significantly promotes instructions and understanding (Samba et al., 2020).

There are some studies investigating GOs in reading comprehension, such as Khalaji (2016) and Rahmat (2020). Moya and Tobar (2017) examined various reading comprehension techniques for EFL instruction. They emphasized the use of GOs in reading since they promoted peer cooperation and interaction and aided in students' effective learning. Furthermore, students have little trouble remembering the primary idea or ideas. Then, Hazaymeh & Alomery (2022) and Kurniaman and Zufriady's (2019) study revealed that GOs might be utilized to categorize data and help students with critical reading analysis and critical thinking.

Abdul Aziz (2018) found that the advantage of GO is that it improves students' learners' creativity and critical thinking that enable them to look at information as a whole. Next, Batinga (2020) found that GOs were able to motivate learners to learn. Additionally, Sari (2019) found that GOs gave effect on the L2 learners' reading comprehension. Then, Kelly (2020) found increased reading comprehension scores over the course after treated using GOs; Santika, et.al, (2021) also confirmed an improve performance of reading skill after treated using GOs. Next, Rahat & Rahman (2020) found a significant difference on GO class than the other class. Kurniaman, et.al, (2018) demonstrated an improvement in the recall of reading texts.

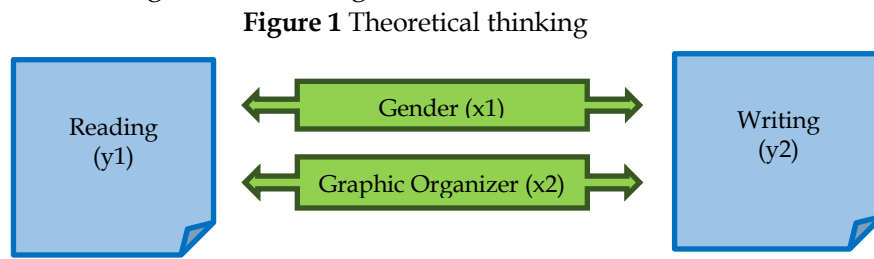
Another important factor contributing to the successful successfull of learning is gender difference. Prior studies studes elaborated gender differences in L2 writing. Some scholars found many differences between female and male learners in writing. For example, Mutar & Nimehchisalem, (2017) found that the difference occurs on male and female in writing performance. Girls displayed more frequently frequancies than boys in writing product. Additionally, girls applied more strategies than

boys. Then, girls tend to use more lexical density than boys (Ginting, 2018). The other investigations evidenced that girls outperformed better than boys in writing (Castro & Limpo, 2018; De Smedt et al., 2018; Adams & Simmons, 2019; Urquhart-Cronish & Otto, 2019; Zhang et al., 2019).

Despite the facts some valuable investigations above, further investigation on GOs is strongly needed to improve the quality of EFL teaching. All of which present evidences on a number of advantages of using GOs. However, in the current study the focus lies on the essay development. As a result, to fill the gap, the investigation attempts to examine the influence of gender and GOs on reading and writing at higher education. The novelty is that the study involves gender; and reading and writing as the outcome variables being investigated. This study has two independent categorical variables: gender (girls and boys) graphic organizers (Non- Graphic Organizer/ NGO versus Digital Graphic Organizer/DGO); and two dependent variables: learners' reading and writing score. The research questions are: (a) does gender give effect significantly on reading and writing score? (b) Does Graphic Organizer (GO) give effect significantly on reading and writing score? (c) Do gender and GOs give effect simultaneously on both scores?

The study measures the effect of two independent categorical variables: gender (male versus female) and graphic organizers (Non- Graphic Organizer/ NGO versus Digital Graphic Organizer/DGO) on two dependent variables: learners' reading and writing score.

The theoretical thinking is shown in Figure 1.



METHODS

The quasi experiment design was employed in the current investigation. The participants were 50 L2 learners at reading and writing class at Islamic higher education as distributed in Table 1.

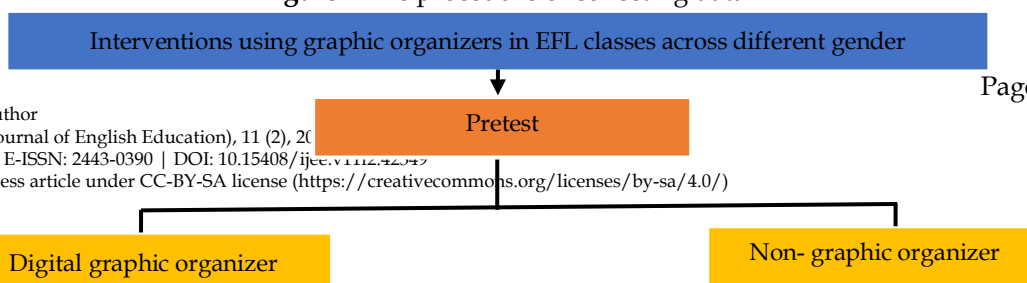
Table 1 The Participants

Treatment	Course			
	Reading		Writing	
	Male	Female	Male	Female
Non- Graphic Organizer (NGO)	19	9	19	9
Digital Graphic Organizer (DGO)	5	17	5	17
Sub-total	24	26	24	26
Total	50		50	

Research design

The data collection was seen in Figure 2.

Figure 2 The procedure of collecting data



*Corresponding author

IJEE (Indonesian Journal of English Education), 11 (2), 2023

P-ISSN: 2356-1777, E-ISSN: 2443-0390 | DOI: 10.15408/ijee.v11i2.4247

This is an open access article under CC-BY-SA license (<https://creativecommons.org/licenses/by-sa/4.0/>)

Research site and participants

The investigation was performed in reading and writing class. First of all, the subjects were given pretest in reading and writing essay to see the early ability of the subjects. This was done to make the subjects were comparable to be analyzed. In reading class, learners were given reading text using GOs in three stages. In pre-reading stage, the language instructor made a preparation for students by distributing reading text and talking about them. This was intended to elicit learners' information on the theme, content and other relevant materials. Afterwards, the language instructor explained the topic and assigned students to create GOs about the topic. Learners were assigned to share ideas with peer during while-reading stage. Learners were also asked to read silently the text while looking at GOs and take notes to identify the main idea. They were also asked to complete GOs provided. In post-reading stage, the learners' comprehension was explored through comprehension question session, small group discussion, and reading assessment.

The same procedures were performed in writing class using GOs. The experiment class was treated using Digital Graphic Organizer (DGO) by (1) choosing a template. (2) Using Symbol. (3) Adding Text in the Graphic Organizers. (4) Customizing details of the Graphic Organizer. (5) Exporting and sharing the File. After the treatment was given, the posttests were performed. The participants were tested on reading and writing performance. In reading test, they were given 50 multiple choice tests. They should select the right answer of each test given. They should complete the test in 90 minutes. Meanwhile, in writing test, learners were assigned to write an argumentative essay

on the selected topic. They should write an argumentative composition having introductory paragraph, body paragraphs, and a concluding paragraph. They should complete the test in 100 minutes.

Data collection and analysis

The null hypotheses are: (a) Gender did not give effect on reading and writing score; (b) Graphic organizers did not give effect to reading and writing score; (c) The interaction effect did not occur between gender and GOs on reading and writing. A two-way MANOVA test was applied.

Result

The description of scores was presented in Table 2.

Table 2 Mean Score

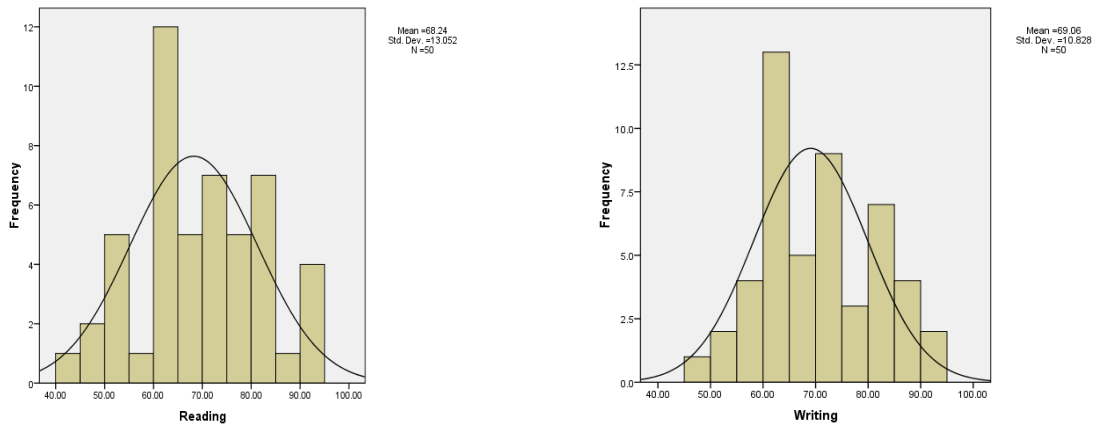
Variable	Gender	Graphic Organizers	Mean	Std. Deviation	N	
Reading	Male	Non- Graphic Organizer (NGO)	58.26	9.36	19	
		Digital Graphic Organizer (DGO)	68.60	9.84	5	
		Total	60.42	10.19	24	
	Female	Non- Graphic Organizer (NGO)	69.78	10.46	9	
		Digital Graphic Organizer (DGO)	78.47	10.65	17	
		Total	75.46	11.20	26	
	Total	Non- Graphic Organizer (NGO)	61.96	10.99	28	
		Digital Graphic Organizer (DGO)	76.23	11.08	22	
		Total	68.24	13.05	50	
	Writing	Male	Non- Graphic Organizer (NGO)	60.90	7.36	19
			Digital Graphic Organizer (DGO)	67.60	7.77	5
			Total	62.29	7.79	24
Female		Non- Graphic Organizer (NGO)	68.56	7.70	9	
		Digital Graphic Organizer (DGO)	78.88	8.42	17	
		Total	75.31	9.46	26	
Total		Non- Graphic Organizer (NGO)	63.36	8.18	28	
		Digital Graphic Organizer (DGO)	76.32	9.43	22	
		Total	69.06	10.83	50	

The data showed demonstrated that the means of Reading for male students with Non- GOs was 58.26, SD 9.36 (n=19); Digital Graphic Organizer (DGO) was 68.60, SD 9.84 (n=5); for female learners using Non- Graphic Organizer (NGO) was 69.78, SD 10.64 (n=9); Digital Graphic Organizer (DGO) was 78.47, SD 10.65 (n=17). The total mean for reading was 68.24 (n=50). Then, the means of Writing for male learners using Non- Graphic Organizer (NGO) was 60.89, SD 7.36 (n=19); Digital Graphic Organizer (DGO) was 67.60, SD 7.77 (n=5); for female learners using (NGO) was 68.56, SD

*Corresponding author

7.70 (n=9); Digital Graphic Organizer (DGO) was 78.88, SD 8.42 (n=17). The total mean for writing was 69.06 (n=50). The data were illustrated in Figure 3.

Figure 3 The Learners' score of reading and writing



Assumption tests

Tests of Normality

The Shapiro-Wilk was applied since the number of participants was only 50.

Table 3 The Shaphiro-Wilk

Course	Gender	statistics	df	p values	conclusion
reading	male	0.97	24	0.65	Normally distributed
	female	0.96	26	0.44	Normally distributed
writing	male	0.98	24	0.96	Normally distributed
	female	0.96	26	0.42	Normally distributed

The output showed that the value for Reading male learners was 0.97, $p = 0.65$; female learners was 0.96, $p = 0.44$. In contrast, the statistic value for Writing male learners was 0.98, $p = 0.96$; female learners were 0.96, $p = 0.42$, indicating the data came from normal distribution.

Test Homogeneity

The homogeneity of variance was shown below.

Table 4 Levene Test

	F	df1	df2	Sig.	conclusion
Reading	.09	3	46	.97	accepted
Writing	.15	3	46	.03	accepted

The table showed F value of Reading score was 0.09, $p = 0.97$; F value of Writing was 0.15, $p = 0.93$; it indicated that all variables had the same varian and Manova test was performed. The result of homogeneity of matrices covariance was shown in Table 5.

Table 5 Box's Test

Box's M	F	P value	conclusion
9.951	0.975	0.459	Accepted/ equal

It showed that the Box's M was 9.951, $p = 0.459$, indicating variables were equal.

FINDINGS AND DISCUSSION

Findings

The two way Manova tested the difference among the independent variables toward dependant variables. The independent variables were gender/ x1 (male versus female) and graphic organizers/ x2 (non- versus digital). Meanwhile, the outcome variable covers learners' reading score/y1 and learners' writing score /y2 as shown in Table 6.

Tabel 6 Two Way Manova

Factor		Value	F	Df 1	Df 2	P value	Partial Eta Squared	conclusion
Gender (A)	Wilks' Lambda	0.77	6.77	2	45	0.00	0.23	significant
Graphic organizers (B)	Wilks' Lambda	0.80	5.47	2	45	0.01	0.20	significant
gender * graphic organizers (AB)	Wilks' Lambda	0.92	2.02	2	45	0.14	0.08	Not significant

It demonstrated the F values and the p-values. The F value of Wilks' Lambda for gender was, $F(1, 49) = 6.77, p = 0.00$; Wilks' $\Lambda = 0.77, \eta^2 = 0.23$; graphic organizer was $F(1, 49) = 5.47, p = 0.01$; Wilks' $\Lambda = 0.80, \eta^2 = 0.20$. This meant that both independent variables separately contributed to both reading and writing. Then, the p value of Wilks' Lambda for the interaction effect between gender and graphic organizers toward reading and writing was $p = 0.144$, describing no significant interaction effect between gender and graphic organizer simultaneously on reading and writing at $F(1, 49) = 2.024, p = 0.144$; Wilks' $\Lambda = 0.917, \eta^2 = 0.083$. The hypotheses were: (a) gender did not give effect to reading and writing score; (b) graphic organizers did not give effect to reading and writing score; (c) the interaction effect between gender and graphic organizers did not occur on reading and writing at higher education.

a. *First hypothesis: gender did not give effect on reading and writing score.*

Table of Tests of Between-Subjects Effects gave explanation, as described in Table 7.

Table 7 Test of Between-Subjects Effects

Source	Dependent Variable	df	Mean Square	F	Sig.	Partial Eta Squared	conclusion
Corrected Model	Reading	3	1230.82	12.16	.00	.44	significant
	Writing	3	973.28	15.85	.00	.51	significant
Intercept	Reading	1	179111.22	1.77	.00	.98	significant
	Writing	1	180181.99	2.93	.00	.99	significant
Gender (A)	Reading	1	1082.26	10.70	.00	.19	significant
	Writing	1	849.20	13.83	.00	.23	significant
Graphic organizers (B)	Reading	1	856.97	8.47	.00	.16	significant
	Writing	1	686.50	11.18	.00	.20	significant
gender * graphic organizers (AB)	Reading	1	6.40	.06	.80	.00	Not significant
	Writing	1	31.04	.51	.48	.01	Not significant
Error	Reading	46	101.19				
	Writing	46	61.41				
Total	Reading	50					
	Writing	50					
Corrected Total	Reading	49					
	Writing	49					

The output indicated the effect of gender for reading was $F(1,49) = 10.70, p = 0.00, \eta^2 = 0.19$, for writing $F(1,49) = 13.83, p = 0.00, \eta^2 = 0.23$. This demonstrated that gender gave significant effect for reading and writing. The F value of Wilks' Lambda for gender was, $F(1, 49) = 6.77, p = 0.00$; Wilks' $\Lambda = 0.77, \eta^2 = 0.23$. The next step was to find the mean score for each course as explained in Table 8.

Table 9 Pairwise Comparisons

Dependent Variable	(I) Gender	(J) Gender	Mean Difference (I-J)	Std. Error	Sig.	Conclusion
Reading	Boys	Girls	-10.69*	3.27	.00	Significant
	Girls	Boys	10.69*	3.27	.00	Significant
Writing	Boys	Girls	-9.47*	2.55	.00	Significant
	Girls	Boys	9.47*	2.55	.00	Significant

The table confirmed that the mean difference of reading score between male and female was -10.69, SE 3.27, $p = 0.00$. Then, the mean difference of writing score between male and female was -9.47, SE 2.55, $p = 0.00$. It meant that the different was significant and female was better than male for both reading and writing. The mean score of each gender was seen in Table 9.

Table 9 Gender

Outcome Variable	Gender	Mean	Std. Error
Reading	Boys	63.43	2.53
	Girls	74.12	2.07
Writing	Boys	64.25	1.97
	Girls	73.72	1.62

b. *Second hypothesis: graphic organizers did not give effect on reading and writing score.*

To respond the question number 2, Table 7 gave explanation. The value of Graphic organizers for reading at $F(1, 49) = 8.47$, $p = 0.01$, $\eta^2 = 0.16$, for writing $F(1, 49) = 11.18$, $p = 0.00$, $\eta^2 = 0.20$. This meant that GOs facilitated for both reading and writing. The F value of Wilks' Lambda for graphic organizer was $F(1, 49) = 5.47$, $p = 0.01$; Wilks' $\Lambda = 0.80$, $\eta^2 = 0.20$. The following was the mean score for each course as shown in Table 10.

Table 10 Pairwise Comparisons

Outcome Variable	(I) Graphic Organizers	(J) Graphic Organizers	Mean Difference (I-J)	Std. Error	Sig.	conclusion
Reading	NGO	DGO	-9.52*	3.27	.01	Significant
	DGO	NGO	9.52*	3.27	.01	Significant
Writing	NGO	DGO	-8.52*	2.55	.00	significant
	DGO	NGO	8.52*	2.55	.00	significant

NGO= Non- Graphic Organizer, DGO= Digital Graphic Organizer

The table explained that the mean difference of reading within NGO and DGO was -9.52, SE 3.27, $p = 0.01$. It meant that the different was significant and DGO was better than NGO for reading. Then, the mean difference of writing score using NGO and DGO was -8.52, SE 2.55, $p = 0.00$. It meant that the different was significant and DGO outperformed higher than NGO for writing. The average of each intervention was explained in Table 11.

Table 11 The mean score

Outcome Variable	Graphic Organizers	Mean	Std. Error
Reading	Non- Graphic Organizer (NGO)	64.02	2.04
	Digital Graphic Organizer (DGO)	73.54	2.56
Writing	Non- Graphic Organizer (NGO)	64.73	1.59
	Digital Graphic Organizer (DGO)	73.24	1.99

c. *Third hypothesis: the interaction effect between gender and graphic organizers did not occur on reading and writing at higher education.*

To respond the research question 3, Table 7 gave explanation. The value of gender and graphic organizers for reading was $F(1,49) = 0.63$, $p = 0.803$, $\eta^2 = 0.001$, for writing $F(1,49) = 0.505$, $p = 0.481$, $\eta^2 = 0.211$). Additionally, the p-value of Wilks' Lambda for the interaction effect between gender and graphic organizers toward reading and writing was $p = 0.144$. This demonstrated there was no interaction effect between gender and graphic organizer simultaneously on reading and writing at $F(1, 49) = 2.02$, $p = 0.14$; Wilks' $\Lambda = 0.98$, $\eta^2 = 0.08$. The next was the mean score for each gender and the treatment using graphic organizers as shown in Table 12.

Table 12 Gender * Graphic Organizers

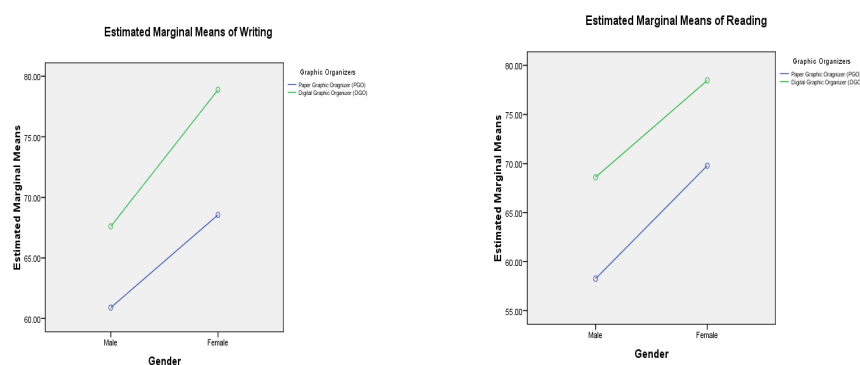
Outcome Variable	Gender	Graphic Organizers	Mean	Std. Error
Reading	Boys	NGO	58.26	2.31
		DGO	68.60	4.50
	Girls	NGO	69.78	3.35
		DGO	78.47	2.44
Writing	Boys	NGO	60.90	1.80
		DGO	67.60	3.51
	Girls	NGO	68.56	2.61
		DGO	78.88	1.90

NGO= Non- Graphic Organizer, DGO= Digital Graphic Organizer

The result demonstrated that the reading average score for male using NGO was 58.26, SE 2.31, DGO was 68.60, SE 4.50; female using NGO was 69.78, SE 3.35, DGO was 78.47, SE 2.44. Meanwhile, the writing mean score for male using NGO was 60.90, SE 1.80, DGO was 67.60, SE 3.51; female using NGO was 68.56, SE 2.61, DGO was 78.88, SE 1.90.

To sum up, the statistical calculation using a two way Manova demonstrated The F value of Wilks' Lambda for gender was $F(1, 49) = 6.77$, $p = 0.00$; Wilks' $\Lambda = 0.77$, $\eta^2 = 0.23$; graphic organizer was $F(1, 49) = 5.47$, $p = 0.01$; Wilks' $\Lambda = 0.80$, $\eta^2 = 0.20$). This meant that gender and GOs separately contributed reading and writing. Then, the p value of Wilks' Lambda for the interaction effect between gender and graphic organizers toward reading and writing was $p = 0.14$. This demonstrated there was no interaction between gender and graphic organizer simultaneously on reading and writing at $F(1, 49) = 2.02$, $p = 0.14$; Wilks' $\Lambda = 0.92$, $\eta^2 = 0.08$, as illustrated in Figure 4.

Figure 4 Result summary



Discussion

The investigation was directed by three questions to be presented to the result and relevant literature. The study revealed that gender and GOs separately contributed reading and writing. However, the study found that there was no interaction between gender and graphic organizer simultaneously on reading and writing. The study gave a clear evidence that female outperformed better than male in reading and writing performance. For example, female tend to have better

performance on hand writing. Language use, and mechanics. Meanwhile, male tend to have lack performance on hand writing, and misspelled words.

This finding was in accordance with some investigations conducted by Powell et.al (2022; Restrepo et.al. 2021), De Smedit, et.al. (2018), Ginting (2018), Adams and Simmons, (2019), Zhang, et al., (2019), Al-Saadi (2020). The study highlights educational implications, as there was a difference in performance between males and females. As a result, it was recommended that the gender gap be reduced by strengthening writing teaching for male students. Language instructors required to improve boys' writing performance by offering extra writing classes and assigning more writing projects. The findings of this investigation were significant since some teachers did not take gender differences into account while teaching writing. As a result, language instructors should focus more on the gender gap in L2 writing classes.

Furthermore, language instructors should give more encouraging and constructive feedback to male students in order to improve boys' writing skills. In L2 writing class, teachers needed to dispel the myth that writing was a feminine activity. There were several suggestions to increase male motivation to write better. Reading was another way to improve one's writing. Learners required a large number of reads to develop their writing since reading supplied effective examples for writing. As a result, teachers needed to present students with a variety of reading books that served as appropriate models for writing activities. It was recommended that teachers give students the opportunity to read both within and outside of class.

Dealing with GOs gave facilitative effect on reading, the finding was supported by previous investigations such as Al Halim (2024); Aprianto & Syarifaturrahman (2020); Ramos Lorenzo (2024); Guo (2020). They found that GOs enhanced deeper reading by building learners' autonomy, and guide reading more selectively. The finding was also in accordance with prior investigation demonstrating that GOs assisted students to improve reading skills (Hazaymeh & Alomery, 2022; Kelly, 2020; Kurniaman, et.al, 2018; Min et, al., 2023; Nehru, 2019; Nurah, 2019; Rahat & Rahman, 2020; Santika, et.al, 2021; Sari,2019 Souisa, 2020). with the text; (e) assigning learners to summarize the text from GOs they made.

Dealing with GOs gave facilitative effect on writing, the finding was supported by previous investigations such as Rahmat, (2020) stating that GOs help learners in the process of writing and it helped to generate ideas. Other scholars such as Anderson, et.al (2018), Anggraeni and Pentury (2018); Ansi (2023); Jumariati, & Sulistyono (2017); Hasibuan (2022); Liu, et.al. (2024); Lopez & Campoverde (2018); Maharani (2018); Wang (2021), found similar findings.

In writing class, GOs help learners organize ideas. By applying GOs learners understand to structure ideas such as providing thesis statement, claim, supporting claim, denying counterclaim, and making a conclusion. GOs also motivate learners to write better, since they provide a conducive atmosphere to learn. They help learners to perform a better writing in argumentative essay. In reading class, GOs are helpful to determine the main ideas in the texts. Learners are easy to comprehend the whole text using GOs. It is, therefore, GOs are powerful tool in both writing and reading class. For example, in reading, GOs help learners catch the main idea of the text. Meanwhile, in writing, GOs help learners to generate ideas and develop into essay.

CONCLUSIONS AND SUGGESTION

This study provided an empirical data on the implementation of GOs in reading and writing. It had a positive result. First, in EFL writing class, it was suggested that the teachers taught the writing process explicitly and they should focus on each step in writing process, especially in pre-writing step. Second, it was advisable that teachers encouraged learners to use various techniques in pre-writing stage to plan their writing. It was advisable that teachers should give opportunities for learners to practice writing. Learners should practice writing as many as possible. Additionally, learners were

recommended to take their responsibility of their writing process. Since, the study limits on the implementation of GOs in reading and writing, the study suggests to conduct researches on GOs in other language components, such as GOs in vocabulary class, grammar class, or speaking class. Therefore, it is advisable that teachers consider gender difference in learning process. The future researchers are recommended to conduct further investigation using different types of GOs. The further investigation is needed to improve the quality of EFL teaching.

Acknowledgments

The deepest appreciation is indebtedness, appreciation, gratitude. and awarded to the Universitas Muhammadiyah Palangkaraya and above all, the blessing of God for completing this research report.

REFERENCES

- Adams, A. M., & Simmons, F. R. (2019). Exploring individual and gender differences in early writing performance. *Read Write*, 32, 235-263. doi:10.1007/s11145-018-9859-0.
- Abbas, M. F. F. & Herdi. (2018). Solving The Students' Problems in Writing Argumentative Essay through Collaborative Writing Strategy. *Proceedings of English Review: Journal of English Education*, 7, 105-114. <https://doi.org/10.25134/erjee.v7i1.1499>
- Abdul Aziz, A. Z., Rahmat, N. H., & Othman, N. A. (2018, August). Exploring the Use of Direct and Indirect Learning Strategies on Graphic Organizers in the ESL Classroom. 4th International Conference ILANNS 2018 (pp. 30- 38). Concorde Hotel, Shah Alam, Malaysia.
- Al-Saadi, Z., & Heidari-Shahreza, M. A. (2020). Gender differences in writing: The mediating effect of language proficiency and writing fluency in text quality. *Cogent Education*, 7(1). <https://doi.org/10.1080/2331186X.2020.1770923>
- Al Halim, M. L. (2024). The Use of Graphic Organizer Strategies to Improve Students' Writing Skills in English Language Teaching. *SAGA: Journal of English Language Teaching and Applied Linguistics*, 5(1), 45-54. <https://doi.org/10.21460/saga.2024.51.182>
- Anderson, C. E., Mora González, C. A., & Cuesta Medina, L. M. (2018). Graphic Organizers Support Young L2 Writers' Argumentative Skills. *GiST Education and Learning Research Journal*, 17(17), 6-33. <https://doi.org/10.26817/16925777.433>
- Anggraini, D. (2017). The effect of applying web graphic organizer on the students' achievement in writing descriptive text. *Unpublished thesis*. Universitas Muhammadiyah Sumatera Utara. <http://repository.umsu.ac.id/handle/123456789/4197>
- Anggraeni, A.D., & Pentury, H.J. (2018). Using Graphic Organizer as a Media in Students' Writing Project. *Scope : Journal of English Language Teaching*, 2(2), 105. <https://doi.org/10.30998/scope.v2i02.2307>
- Ansi, R. Y., Harahap, D. A. ., Ginting, D., Karimaliana, K., & Pane, A. H. (2023). The Effect of the Graphic Organizer Method on Students' Ability to Write Recount Text at Grade X. *Edunesia : Jurnal Ilmiah Pendidikan*, 4(1), 391-400. <https://doi.org/10.51276/edu.v4i1.363>
- Aprianto, D., & Syarifaturrahman, W. K. (2020). ESL Learners' perception of the use of graphic organisers (GOS) as class presentation strategies. *Exposure: Jurnal Pendidikan Bahasa Inggris*, 9(1), 143-157
- Batinga, E. M. L., Jubay, R. P., & Avila, R. A. (2020). Enhancing students' metacognition and reading comprehension using graphic organizers. *PAFTE Research Journal*, 9(1), 223-233. <http://dx.doi.org/10.2139/ssrn.3731200>
- Boyle, J. R. (2024). Argumentative Writing for Students with Disabilities in Inclusive Science Classes: A Pilot Study. *Reading & Writing Quarterly*, 1-18. <https://doi.org/10.1080/10573569.2024.2389776>
- Boykin, A., Evmenova, A.S., Regan, K., & Mastropieri, M. (2019). The impact of a computer-based graphic organizer with embedded self-regulated learning strategies on the argumentative writing of students in inclusive cross-curricula settings. *Computers & Education*, 137, 78-90. <https://doi.org/10.1016/j.compedu.2019.03.008>
- Brady, K. K., Evmenova, A. S., Regan, K. S., Ainsworth, M. K., & Gafurov, B. S. (2021). Using a technology-based graphic organizer to improve the planning and persuasive paragraph writing by adolescents with disabilities and writing difficulties. *The Journal of Special Education*, 55(4), 222-233. 00224669211008256. <https://doi.org/10.1177/00224669211008256>.
- Colliot, T., & Jamet, É. (2021). Improving students' learning by providing a graphic organizer after a multimedia document. *British Journal of Educational Technology*, 52(1), 252-265. <https://doi.org/10.1111/bjet.12980>.
- Cox, J. (September 16, 2020). What is a graphic organizer and how to use it effectively. *teachhub.com*.

<https://www.teachhub.com/classroom-management/2020/09/what-is-a-graphic-organizer-and-how-to-use-it-effectively/>

- Coombs, H. (2017). *The effects of graphic organizers to identify main idea and supporting details in informational text on students with learning disabilities*. Theses and Dissertations. <https://rdw.rowan.edu/etd/2458>.
- Damayanti, A. (2019). Graphic Organizer as Strategy to Teach Extensive Reading on Non-Fiction for EFL Learners. *Journal of English Language Teaching and Linguistics*, 4(2), 251-262. <http://dx.doi.org/10.21462/jeltl.v4i2.284>
- Daniels, S. (2020). *Visual Learning and Teaching: An Essential Guide for Educators K-8*. Free Spirit Publishing.
- De Smedt, F., Merchie, E., Barendse, M., Rosseel, Y., De Naeghel, J., & Van Keer, H. (2018). Cognitive and motivational challenges in writing: Studying the relation with writing performance across students' gender and achievement level. *Reading Research Quarterly*, 53(2), 249-272. <https://doi.org/10.1002/rrq.193>
- Enighe, J-M. (2024). Effects of graphic organisers on junior secondary school students' achievement in composition writing. *Int. J. Education, Arts and Social Issues in Africa*, Vol. 1, No. 1, pp.8-20
- Ginting, S. A. (2018). Lexical Complexity on Descriptive Writing of Indonesian Male and Female EFL Learners. *International Journal of English Linguistics*, 8(3), 297. <https://doi.org/10.5539/ijel.v8n3p297>
- Guo, D., Zhang, S., Wright, K. L., & McTigue, E. M. (2020). Do You Get the Picture? A Meta-Analysis of the Effect of Graphics on Reading Comprehension. *AERA Open*, 6(1), 233285842090169. <https://doi.org/10.1177/2332858420901696>.
- Hasibuan, A., Pricilia, G. M., Hasibuan, D., & Tumanggor, A. (2022). The Effect of Using Graphic Organizers Technique on Students' Writing Recount Text Ability. *Journal Education and Development*, 10(2), 586-589. <https://doi.org/10.37081/ed.v10i2.3761>.
- Hazaymeh, W. A., & Alomery, M. K. (2022). The effectiveness of visual mind mapping strategy for improving English language learners' critical thinking skills and reading ability. *European Journal of Educational Research*, 11(1), 141-150. <https://doi.org/10.12973/eu-jer.11.1.141>
- Kadhim MT & Chilab AN. (2024) The effect of the formal organizer strategy on the achievement and visual thinking skills of first-year intermediate female students in social studies subject. *Salud, Ciencia y Tecnología - Serie de Conferencias* [Internet]. 2024 Jan. 1 <https://conferencias.ageditor.ar/index.php/sctconf/article/view/829>
- Kelly, K. (2020). *Principal instructional leadership effect on high school students' literacy achievement*. Doctoral Dissertations and Projects. 2325. <https://digitalcommons.liberty.edu/cgi/viewcontent.cgi?article=3384&context=doctoral>
- Khalaji, H. R. (2016). The effect of graphic organizers on students' writings: the case of EFL Students, Islamic Azad University, Malayer Branch. *International Journal of Educational Investigation*, 3(3), 94-105. <http://www.ijeionline.com/attachments/article/52/IJEEI.Vol.3.No.3.08.pdf>
- Kurniaman, O., & Zufriady, Z. (2019). The effectiveness of teaching materials for graphic organizers in reading in elementary school students. *Journal of Educational Sciences*, 3(1), 48-62.
- Kurniaman, O., Zufriady, Z., Mulyani, E. A., & Simulyasih, N. (2018). Reading comprehension skill using graphic organizer for elementary school students. *Journal of Teaching and Learning in Elementary Education*, 1(2), 75- 80. <http://dx.doi.org/10.33578/jtlee.v1i2.5876>
- Liunokas, Y. (2020). Assessing Students' Ability in Writing Argumentative Essay at an Indonesian Senior High School, in: *Proceedings of IDEAS: Journal of Language Teaching and Learning, Linguistics, and Literature*, 8, 284-296, <https://doi.org/10.24256/ideasv8i1.1344>
- Lopez, J., & Campoverde, J. (2018). Development of reading comprehension with graphic organizers for students with dyslexia. *Journal of Technology and Science Education*, 8(2), 105-114. <http://dx.doi.org/10.3926/jotse.414>
- Lynch, A. (2021). What is a Graphic Organizer? Edrawsoft. <https://www.edrawsoft.com/what-is-graphic-organizer.html>
- Lasaka, C. O., Jamiluddin, J., & Erniwati, E. (2018). Effect of using paragraph hamburger strategy on students writing achievements. *E-Journal of ELTS (English Language Teaching Society)*, 6 (1), 1-15. <http://jurnal.untad.ac.id/jurnal/index.php/ELTS/article/view/11494/8830>
- Liu, Q., Zhong, Z. & Nesbit, J.C. (2024). Argument mapping as a pre-writing activity: Does it promote writing skills of EFL learners?. *Educ Inf Technol* 29, 7895-7925 (2024). <https://doi.org/10.1007/s10639-023-12098-5>
- Ma, Y., Teng, Y., Deng, Z. (2023) Does writing style affect gender differences in the research performance of articles?: An empirical study of BERT-based textual sentiment analysis. *Scientometrics* 128, 2105-2143 (2023). <https://doi.org/10.1007/s11192-023-04666-w>
- Marchant-Araya, P. (2023). *Assessing with Graphic Organisers: How and When to Use Them*. In: Förster, C.E. (eds) *The Power of Assessment in the Classroom*. Springer Texts in Education. Springer, Cham.

https://doi.org/10.1007/978-3-031-45838-5_8

- Maharani, M. M. (2018). Graphic Organizers to Improve Students' Writing on Recount Paragraphs. *Metathesis: Journal of English Language, Literature, and Teaching*, 2(2), 211. <https://doi.org/10.31002/metathesis.v2i2.942>
- Min, G. S., Albakri, I. S. M. A., Ismail, N., Mokhtar, M. M., Zulkepli, N., Tahir, M. H. M., & Khalid, P. Z. M. (2023). Fostering critical thinking using Graphic Organizers in English language reading class. *Studies in English Language and Education*, 10(3), 1309-1325.
- Moya, N. P. G., & Tobar, M. C. S. (2017). Formative evaluation and formative feedback: An effective practice to promote student learning in higher education. *Revista Publicando*, 4(12(1)), 321-333.
- Nehru, A.P. (2019). A Systematic Review of Research on Mind Mapping and Concept Mapping to Develop Reading Comprehension. *Vol-5 Issue-6 2019. IJARIII-ISSN(O)-2395-4396*
- Ng, S. (2010). Gender differences in learning English writing in Hong Kong. *Unpublished Master's thesis*. University of Hong Kong, Pokfulam. <http://hub.hku.hk/handle/10722/132095>
- Nindya, M.A. Widiati, U. (2020) Cohesive devices in argumentative essays by Indonesian EFL learners, in: *Proceedings of Journal on English as a Foreign Language*, 10(-), 337-358. <https://doi.org/10.23971/jefl.v10i2.1949>
- Nurah. A. (2019). EFL Teachers' Perceptions of Using Graphic Organisers in the Language Classroom. *Advances in Social Sciences Research Journal*, 6(2), 131-150.
- Ozfidan, B. & Mitchell, C, (2020). Detected Difficulties in Argumentative Writing: The Case of Culturally and Linguistically Saudi Backgrounded Students. *Proceedings of Journal of Ethnic and Cultural Studies*, 7, 15-29. <https://doi.org/10.29333/ejecs/382>
- Pratama, S., Rahmawati, I. N., & Irfani, B. (2017). Graphic Organizer as One Alternative Technique to Teach Writing. *English Education: Jurnal Tadris Bahasa Inggris*, 10 (2), 334-357. <https://doi.org/10.24042/ee-jtbi.v10i2.1755>
- Powell, S. N., Hunting, J. C., Frazier, L. P., Keeling, L. E., & Janowski, J. (2022). Evolution and trends in male versus female authorship of articles in flagship orthopaedic journals from 1995 to 2020. *Journal of the American academy of orthopaedic surgeons*, 30(12), E878-E885. <https://doi.org/10.5435/JAAOS-D-21-01113>
- Qi, W., & Jiang, Y. (2021). Use of a graphic organizer as a pedagogical instrument for the sustainable development of EFL learners' English reading comprehension. *Sustainability*, 13(24), 13748. <https://doi.org/10.3390/su132413748>
- Restrepo, N., Unceta, A., & Barandiaran, X. (2021). Gender diversity in research and innovation projects: The proportion of women in the context of higher education. *Sustainability*, 13(9), 5111. <https://doi.org/10.3390/su13095111>
- Rahmat, N.H. (2020). Information Processing As Learning Strategy: the Case of Graphic Organisers. *European Journal of Education Studies*, 7(4), 1-15. <https://doi.org/10.5281/zenodo.3762575>
- Rahat, L., & Rahman, G. (2020). Impact of graphic organizers on reading comprehension of English learners at intermediate level. *Sir Syed Journal of Education & Social Research*, 3(3), 128-134. [https://doi.org/10.36902/sjesr-vol3-iss3-2020\(128-134\)](https://doi.org/10.36902/sjesr-vol3-iss3-2020(128-134))
- Ramos Lorenzo, Beckylee (2024) *The Use of Graphic Organizers on the Reading Comprehension of High School Students*. Graduate Thesis and Dissertation 2023-2024. 226. <https://stars.library.ucf.edu/etd2023/226>
- Rahmawati, F.S. Cahyono, B.Y. Anugerahwati, M.(2018). Effect of story maps on EFL students' achievement in writing narrative texts, in: *Proceedings of Journal on English as a Foreign Language*, 8. 130-148. <http://dx.doi.org/10.23971/jefl.v8i2.877>
- Rubiaee, A. M., Darus, S., & Abu Bakar, N. (2019). The Effect of Writing Knowledge on EFL Students' Ability in Composing Argumentative Essays. *Arab World English Journal (AWEJ)*, 10 (4) 263-287. <https://dx.doi.org/10.24093/awej/vol10no4.20>
- Styati, E. W., & Irawati, L. (2020). The Effect of Graphic Organizers on ELT Students' Writing Quality. *Indonesian Journal of EFL and Linguistics*, 5(2), 279-293. <https://doi.org/http://dx.doi.org/10.21462/ijefl.v5i2.283>
- Sabarun, Rodhatul Jennah, Nursamsu, Mazrur, Tazkiyatunnafs Elhawwa, Abdul Qodir; The effect of using bubble mind map on L2 writing performance at University learners. *AIP Conf. Proc.* 16 August 2024; 3199 (1): 020002. <https://doi.org/10.1063/5.0217377>
- Samba, R., Achor, E. E., Bash, A., & Iortim, S. (2020). Fostering students' critical thinking and achievement in basic science using graphic organizer and experiential learning strategies with feedback. *Science Education International*, 31(2), 220-225. <https://doi.org/10.33828/sei.v31.i2.12>
- Santika, EE, Anita, F & Darajad, A. (2021). A Systematic Review Of Graphic Organizers Method In Reading Comprehension. *Journal of English Language Teaching and Education (JELTE)*, 2(2), 31-41. <https://doi.org/10.31571/jelte.v2i2.65>

- Saputra, A.B.B., Jumariati, Febriyanti, E.R. (2021). EFL Students' Problems in Writing Argumentative Essays. *Proceedings of the 2nd International Conference on Education, Language, Literature, and Arts (ICELLA 2021)*. ISBN: 978-94-6239-442-1, ISSN: 2352-5398. <https://doi.org/10.2991/assehr.k.211021.002>
- Sari, N. K., Drajadi, N. A., & Rochsantiningsih, D. (2019). Promoting students' reading comprehension using graphic organizer: A classroom action research. *International Journal of Language Teaching and Education*, 3(2), 118-129. <https://doi.org/10.22437/ijolte.v3i2.7394>
- Souisa, T. R. (2020). The influence of graphic organizers, language aptitude and attitude towards students' English learning achievement. *IJET (Indonesian Journal of English Teaching)*, 9(1), 33-43. <http://dx.doi.org/10.15642/ijet2.2020.9.1.33-43>
- Syafii, M.L., Miftah, M.Z. (2020). Venn-diagram strategy in EFL class to enhance learners' writing skill and motivation. *Proceedings of Journal on English as a Foreign Language*, 10. 141-162. <https://doi.org/10.23971/jefl.v10i1.1556>
- Styati, E.W., & Latief, M. A. (2018). Investigating dominant and passive students on pair work towards the students' writing performance. *3L: Language, Linguistics, Literature*, 24(3). <https://doi.org/10.17576/3L-2018-2403-11>
- Shahriari, H., & Shadloo, F. (2019). Interaction argumentative essays: The case of engagement. *Discourse & Interaction*, 12(1), 96-110. <https://doi.org/10.5817/DI2019-1-96>
- Susanti, A.; Widiati, U., & Cahyono, B.Y. (2020). The effect of proficiency pairings on EFL students' writing ability in genre-based approach context. *International Journal of Evaluation and Research in Education (IJERE)*, 9(1). 1-15. <https://dx.doi.org/10.11591/ijere.v9i1.20439>.
- Urquhart-Cronish, M., & Otto, S. P. (2019). Gender and language use in scientific grant writing. *FACETS*, 4(1), 442-458. <https://doi.org/10.1139/facets-2018-0039>
- Vögelin, C., Jansen, J., Kellar, S. D., Machts, N., & Möller, J. (2019). The influence of lexical features on teacher judgements of ESL argumentative essays. *Assessing Writing*. 39, 50-63. <https://doi.org/10.1016/j.asw.2018.12.003>
- Wang, X., Mayer, R. E., Zhou, P., & Lin, L. (2021). Benefits of interactive graphic organizers in online learning: Evidence for generative learning theory. *Journal of Educational Psychology*, 113(5), 1024-1037. <https://doi.org/10.1037/edu0000606>
- Wangzom, P. (2019). The use of graphic organizers in teaching history to grade seven students in Bhutan. *St. Theresa Journal of Humanities and Social Sciences*, 5(2), 44-69.
- Zhang, M., Bennett, R. E., Deane, P., & Rijn, P.W. (2019). Are there gender differences in how students write their essays? An analysis of writing processes. *Educational Measurement: Issues and Practice*, 38(2), 1-13. <https://doi.org/10.1111/emip.12249>