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THE EFFECT OF GENDER, LEARNING STYLES ANDWEBBING GRAPHIC ORGANIZERS IN ARGUMENTATIVE WRITING CLASS AT HIGHER EDUCATION

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ABSTRACT- This research investigated the effect of webbing graphic organizers in l2 argumentative writing class at higher education with involving gender and learners' learning stylefactors.The study applied quasi experimental design using a pretest-posttest. The participants were 66 learners. The treatment class 1 was treated withICT based webbinggraphic organizers (ICT-GO);the treatment class 2 was treated usingpaper based webbinggraphic organizers (P-GO); and the control classwas not given any treatments or No graphic organizers (N-GO). Athree-wayanalysis of variance was applied for analyzingdata.The analysisconfirmed types of treatments(F= 48.775; p=0.000); and learners'learning styles(F= 7.228; p=0.002)contribute to writing ability. Italso indicated that an interaction effect occurred between gender and treatments (F=4.764, p=0.013)on the learners' writing ability. In contrast, the finding found that gender (F= 0.894, p= 0.349); and interaction between gender and learning styles(F=1.030, p=0.364);learning styles and types of treatment(F=0.669, P=0.617); gender, learning styles and types of treatment 0.456 (F=0.884, p=0.456) did not give interaction effect to learners' writing ability. The study concluded that gender, learning styles and graphic organizers had no effectsimultaneously on argumentativeessayability, and ICT based graphic organizer and visual learners got the highest score in their writing ability. The finding made some contribution on the knowledge body on graphic organizer theory.

Keywords: graphic organizer,gender, learning styles, writing ability.

I. INTRODUCTION

An argumentative essay is an academic written discourse discussing a controversial topic, where a writer's stance is taken, reasons and supporting evidences are displayed, claim, counter claim is presented, and refutation is performed (Tsai, 2006, p.17). It isa type of essay, in which the goal is to provide evidences theauthor's claim. An argumentative essay needs higher order of reasoningand drawing conclusions. Additionally, a good argument should have cover both sides: pro-con. Cho and Jonassen (2002) confirm that teaching argumentative writing can aid learners to improve their cognitive skills.In facts,writing argumentative essay needs complex cognitive skills (Nippold & Ward-Lonergan, 2010). Thus, undergraduate students are expected to understand those skills in order to make persuasively written arguments on the basis of logical supports (Botley & Hakim, 2014). Dealing with this, Baxendell (2003) believes that graphic organizers displayed a helpful instrument used learnersto expressthoughts and to organize ideas.Graphic organizers are a helpful instruments for learners to organize and simplify information. They aid learners to construct understanding through an exploration of the relationships between concepts. Basically, the capability of writing arguments helps learners both for becoming critical thinkers and reflective thinkers (Ponnudurai, 2011). Students often get difficulties in writing argumentative essay. Some investigations found that EFL learners have less proficiency to write argumentatively (Spawa & Hassan, 2013).. Besides, Bipinchandra et al. (2014) found that learners could not connect ideas since it emphasized on product than process. Moreover, Ponnudurai (2011) states that learners unable to write a good argumentative essay because of inadequate content. Additionally, studies found that learners are lack ability to argue, propose a thesis statement in writing arguments (Ka-kan-Dee & Kaur, 2015); lack knowledge on argumentative pattern, (Udomyamokkul, 2004 as cited in Saito, 2010); using inappropriate transition words (Mohamed, 2016; Uzun, 2017; Muftah, 2014); and inadequate method of teaching (Tayib, 2015). The parts of argumentative writing is shown in Figure 1.

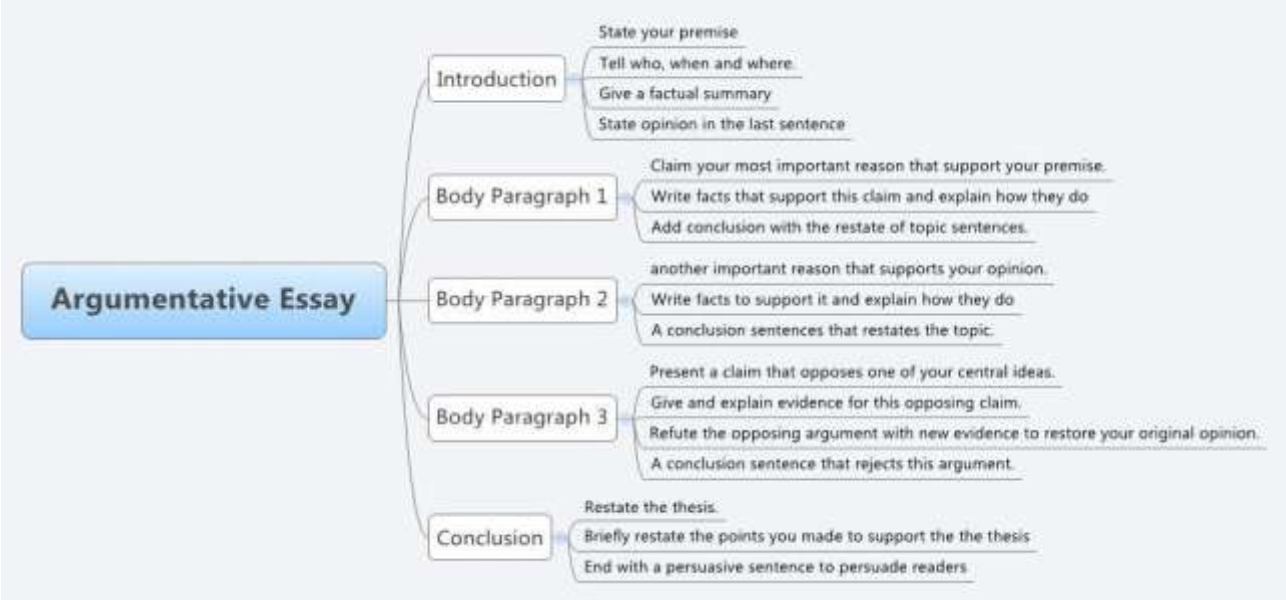

Figure 1. The parts of argumentative writing

Mastering argumentative writing skill is considered as the hardest task (Tayib, 2015;Hirvela & Du, 2013). This is supported by Thompson stating that mastering argumentative writing is challenging(2017). Therefore, becoming a good argumentative writer is believed to aid learners in developing critical thinking. The learners need to increase the argumentative skills for academic success (Graff, 2004; Hillocks, 2011).For l2 writing teachers, teaching argumentative writing is not an easy task. L2 learners commonly have poor argumentative writing skills. In addition, L2 learners seldom engage with argumentative writing practices (Neff-van Aertselaer, 2013). Argumentation is regarded as more cognitive compared to othermodels of composition. In facts, the opportunities to develop argumentative writing skills are not adequatein EFL class (Neff-van Aertselaer, 2013). Since, language instructors teach using traditional instruction whichis not in accordance with the21st-century skills (Scott, 2015). In facts, argumentative skill is required for academic success (Jonassen & Kim, 2010). Effective instruction in EFL writing class help studentsprovide cognitive skills and prepare them for academic challenges. In the current research, the study proposes thewriting process to be designed by Graphic Organizer (GO) web based (Brovero, 2004).Participants use webbing graphic organizer to generate idea, develop argumentative essay structure for their texts. The model of argument structure is shown in Figure 2.

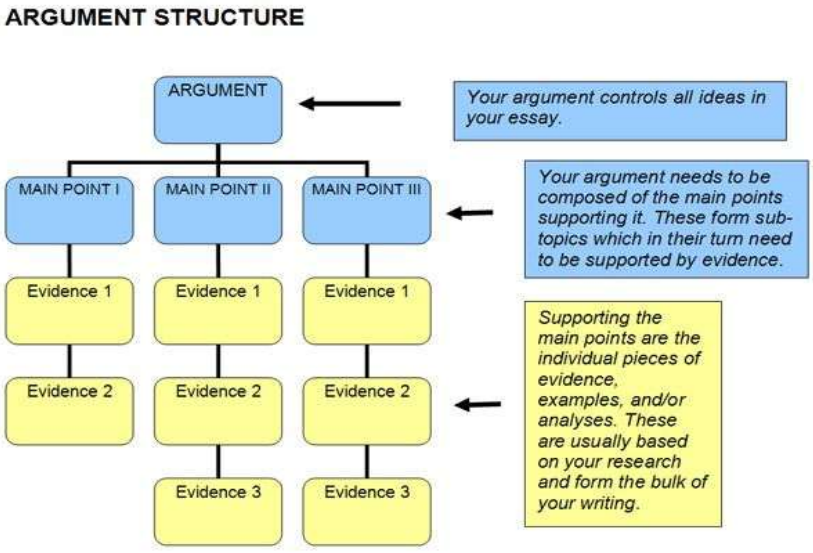

Figure 2. The model of argument structure

WEBBING GO.

Graphic Organizer (GO)is a type of planning instrument used to aid learners in organizing thoughts and structuring essays correctly (Bishop et al., 2015,p.6).Meanwhile, Egan (1999) states that GO is a visual display of information, a way to structure information, and to arrange ideas.GOs are visual tool to convey data (Ellis & Howard, 2007). Additionally, Sorenson (2010, p.6) states thatgraphic organizers aredrawings to indicate the idea connection.Graphic organizers help L2 learners arrange the ideas of ideas (Miller, 2011). It provides a prior organizational idea plan (Ruddell, 2001). Graphic organizers also help learners decrease cognitive load (Adcock, 2000).The model of GO as shown in Figure 3.

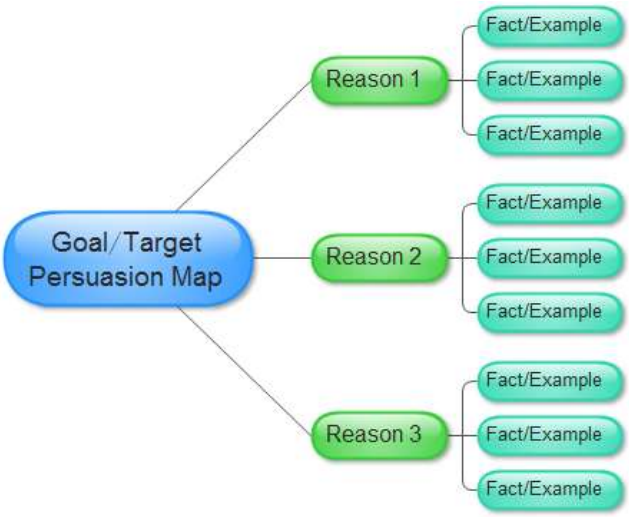

Figure 3. GO for argumentative essay.

GOs are able to guide learners' attentions to keep on tasks(Miller, 2011). GOs can aid learnersfocusing on the topic, In this case, Miller (2011) confirms GO functions as visual display. Kajder (2005) believes graphic organizer makes learners easy to understand the text. Ellis (2004) revealed that graphic organizer can aid learners to separate ideas, address the content and become strategic learners. The concept of graphic organizers is shown in Figure 4.

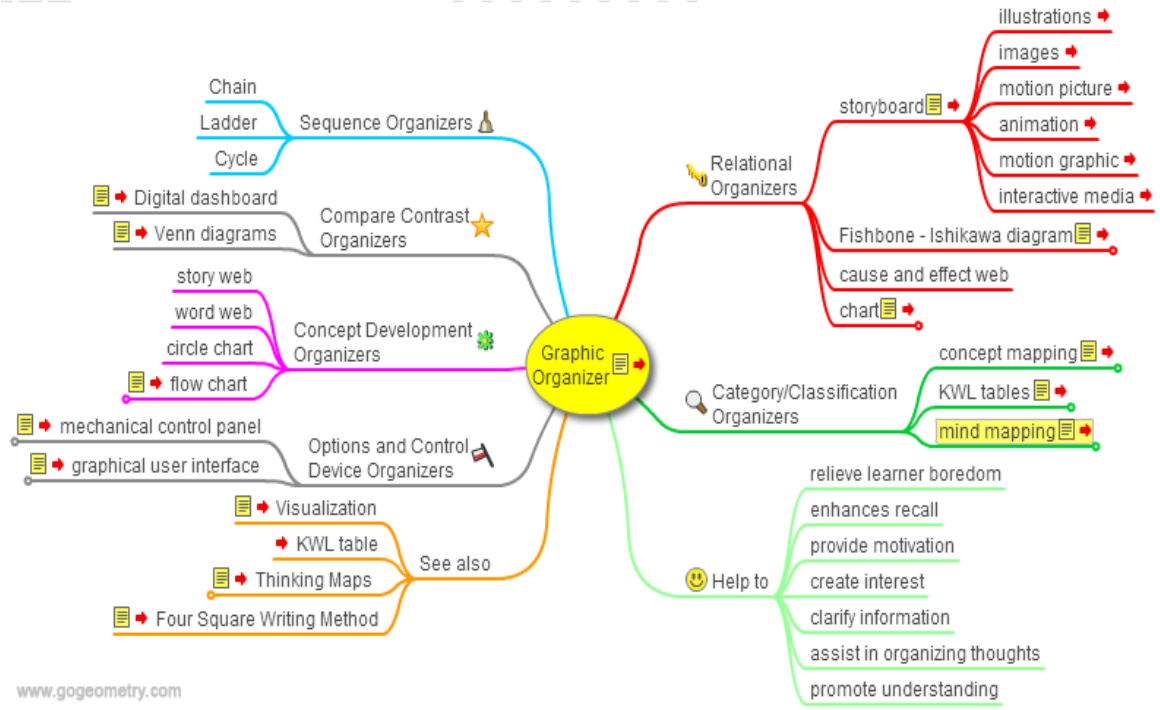

Figure 4. The concept of graphic organizers

There are some previous investigations concerning GO in argumentative essay writing such as Brovero, 2004; Hirose, 2003; Uba et al., 2016). The other study conducted by Myrick & Siders, (2007) on the usage

of GOs to aid learners to organize ideas. Then, Nussbaum & Schraw (2007) investigatesGOsin helping the construction of argumentative essay. Meanwhile, investigation on GOs with L2 young studentsin argumentative essay writing were conducted by Roa Pinzón (2012); Reyes(2011). The investigation conducted by Bishop et al. (2015) investigating theinfluence of graphic organizer on argumentative writing found that the learners' argumentative writing outperformed better as a result of the treatment given. Then, Meera and Aiswarya (2014) showed that GOs improved English writing skills. Next, Mahmudah (2016) found that graphic organizers can increase both writing skillsand motivation. Currently, Maad and Maniam (2017) examined theinfluence of GO in argumentative writing. They revealed an improvement occurs in the experimental group. Next, Hamiche (2017) investigated the influence of GOs on the organization patterns of the argumentative essay. He reveals that GO is an effective technique for argumentative essay writing. To sum up, the previous investigations examined theeffect of GOs in argumentative essay writing. Although there have been many studies on graphic organizer, a few attention has been conducted to effect of webbing graphic organizers in l2 argumentative writing class at higher education with involving gender and learners' learning stylefactors.This study fuilfills the gap.The objective of the investigation was to calculate the influence of GOsin l2 writing class with involving gender: male and female; and learners' learning style: visual, auditory, and kinesthetics. Therefore, the research question is: Do gender, learners' learning style and types of graphic organizersgive interaction effect on learners' writing ability?

II. METHODS

The method of the study applied a pre-posttest quasi-experimental design. The participants were 66 L2 learners attending argumentative class. The participants were devided into twoclasses based on gender (male 30 and female 36); and three classes based their learning styles: visual (27), auditory (23), and kinesthetics (16). They were also classifiedinto three classes consisting of the first treatment group (n=25), the second treatment class (n=21), and one control class (n=20). The predictor variables in the study were gender, learning style, and webbing graphic organizers. Meanwhile, the outcome variable was the learners' writing score.The participants was illustrated in Table 1.

Table 1. The Participants

Types of treatment	Learners' Learning Styles						Total
	Visual		Auditory		Kinesthetics		
	Male	Female	Male	Female	Male	Female	
ICT graphic organizers (ICT-GO)	9	6	3	3	3	1	25
Paper graphic organizers (P-GO)	2	3	6	5	0	5	21
Non graphic organizers (N-GO)	3	4	2	4	2	5	20
Sub total	14	13	11	12	5	11	66
Total	27		23		16		66

THE STEPS

The study was performed for a semester. The participants were divided based on gender (male versus female) and their learning style preferences of VAK model as proposed by Fleming (2001) (Visual, auditory, and kinesthetic learners). Before the intervention, all participants were given pretest to make sure that all groups were comparable. During the class, the treatment class 1 was given treatment usingICT based graphic organizers (ICT-GO). Here, the teacher provided graphic organizers shoftware to the class. The learners should download the software. Then, the treatment class 2 was given treatment usingPaper based graphic organizers (P-GO). Here, the teacher provided conventional graphic organizers in the form of paper. On the contrary, the control class was not given treatments. They were only taught using outlining. After the class end, they were given a task to write an arugemntative essay about 450- 500 words.

THE ANALYSIS

The null hypothesis was that gender, learners' learning stylesand types of graphic organizerdid not give effect to writing ability. To respond the single research question, a three-wayANOVA test was used to calculate interaction effect among variables.

III. RESULT

The test assumptions were performed before testing the hypothesis such as the normality and homogeneity tests. The result of Kolmogorov Smirnovindicated the data were in normal distribution (the sig. value (p- value) for 0.480>0.050). Meanwhile, the result of Levene's Test of Equality was (p= 0.017<0.050). It meant the data were homogenous.

Data Presentation

The test was followed by 66 participants consisting of 30 males and 36 females; 27 visual, 23 auditory, and 16 kinesthetic learners. The learners' writing ability was illustrated in Table 2.

Table 2. The learners' writing ability

gender	Learning Style	treatments	Mean	Std. Deviation	N
Male	Visual	ICT Based Graphic Organizers	87.3333	8.09321	9
		Paper Based Graphic Organizers	67.5000	9.19239	2
		Non-Graphic Organizers	65.6667	4.04145	3
		Total	79.8571	12.56893	14
	Auditory	ICT Based Graphic Organizers	83.0000	.00000	3
		Paper Based Graphic Organizers	69.8333	8.13429	6
		Non-Graphic Organizers	71.5000	16.26346	2
		Total	73.7273	9.76822	11
	Kinesthetics	ICT Based Graphic Organizers	75.0000	5.00000	3
		Non-Graphic Organizers	58.5000	9.19239	2
		Total	68.4000	10.73778	5
	Total	ICT Based Graphic Organizers	84.0000	8.10643	15
		Paper Based Graphic Organizers	69.2500	7.77817	8
		Non-Graphic Organizers	65.2857	9.58670	7
		Total	75.7000	11.77417	30
Female	Visual	ICT Based Graphic Organizers	89.6667	4.54606	6
		Paper Based Graphic Organizers	78.6667	7.09460	3
		Non-Graphic Organizers	63.7500	6.39661	4
		Total	79.1538	12.71381	13
	Auditory	ICT Based Graphic Organizers	85.6667	3.05505	3
		Paper Based Graphic Organizers	71.6000	2.60768	5
		Non-Graphic Organizers	62.2500	1.70783	4
		Total	72.0000	9.51554	12
	Kinesthetics	ICT Based Graphic Organizers	87.0000	.	1
		Paper Based Graphic Organizers	68.6000	7.60263	5
		Non-Graphic Organizers	50.6000	6.58027	5
		Total	62.0909	13.77283	11
	Total	ICT Based Graphic Organizers	88.2000	4.15799	10
		Paper Based Graphic Organizers	72.0769	6.77571	13
		Non-Graphic Organizers	58.2308	8.07418	13
		Total	71.5556	13.70181	36
Total	Visual	ICT Based Graphic Organizers	88.2667	6.79776	15
		Paper Based Graphic Organizers	74.2000	9.14877	5
		Non-Graphic Organizers	64.5714	5.19157	7
		Total	79.5185	12.39842	27
	Auditory	ICT Based Graphic Organizers	84.3333	2.42212	6

		Paper Based Graphic Organizers	70.6364	6.05430	11
		Non-Graphic Organizers	65.3333	8.80152	6
		Total	72.8261	9.45637	23
	Kinesthetics	ICT Based Graphic Organizers	78.0000	7.25718	4
		Paper Based Graphic Organizers	68.6000	7.60263	5
		Non-Graphic Organizers	52.8571	7.60326	7
		Total	64.0625	12.89687	16
	Total	ICT Based Graphic Organizers	85.6800	7.01617	25
		Paper Based Graphic Organizers	71.0000	7.12039	21
		Non-Graphic Organizers	60.7000	9.06178	20
		Total	73.4394	12.93312	66

The table showed the average writing scores of each group. The mean score of male visual learners using ICT based graphic organizerwas 87.33; Auditory83.00; Kinesthetic 75.00. The mean score of male visual learners using Paper based graphic organizer was 67.50; Auditory69.83; Kinesthetic 75.00. The mean score of male visual learners with non- graphic organizer was 65.66; Auditory71.50; Kinesthetic 58.50. On the contrary,average score of femalevisual learners using ICT based graphic organizer was 89.67; Auditory85.67; Kinesthetic 87.00. The mean score of female visual learners using Paper based graphic organizer was 78.67; Auditory71.60; Kinesthetic 68.60. The mean score of female visual learners with non- graphic organizer was 63.75; Auditory62.25; Kinesthetic 50.60.The average score of ICT Based Graphic Organizers without involving gender and learning styles was 85.68; Paper Based Graphic Organizers was 71.00; and Non-Graphic Organizers was 60.70. The learners' writing ability was described in Figure 5.

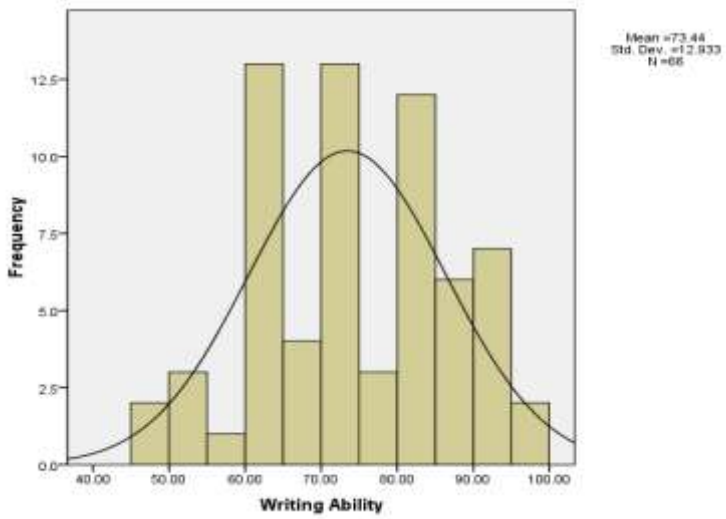

Figure 5. The learners' writing ability

Thethree-way Analysis of Variance table described as illustrated in Table 3.

Table 3. Three-Way Analysis of Variance

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	8715.491[a]	16	544.718	12.376	.000
Intercept	260362.662	1	260362.662	5.915E3	.000
gender	39.330	1	39.330	.894	.349
Learningstyle	636.323	2	318.162	7.228	.002
typesoftreatment	4293.691	2	2146.846	48.775	.000
gender * Learningstyle	90.705	2	45.352	1.030	.364
gender * typesoftreatment	419.342	2	209.671	4.764	.013

Learningstyle * typesoftreatment	117.782	4	29.445	.669	.617
gender * Learningstyle * typesoftreatment	116.681	3	38.894	.884	.456
Error	2156.767	49	44.016		
Total	366833.000	66			
Corrected Total	10872.258	65			

The table showedthe effect of all predictor variables and interaction effect of gender, types of learning styles, andtypes of treatment) to writing ability. The sig. of the corrected model was 0.000 < 0.050 and F=12.376, indicating it was valid to measure the interaction effect among the variables.The gender significance value was 0.349(F=0.894)>0.05 indicating gender did not influence learners' writing ability. The learning styles significance value styles was 0.002 (F=7.228)<0.05. indicating learning styles gave influence learners' writing ability.The treatments(ICT-GO, P-GO, N-GO) significance value (Sig.) was 0.000 (F=48.775)<0.05indicating types of treatment gave influence to writing ability. The gender and learning stylesp value was 0.364 (F=1.030)>0.05 showing that gender and learning styles did not give influence simultaneouslyto writing ability. The significance of gender and types of treatment was 0.013 (F=4.764)<0.05 indicating that gender and learning stylessimultaneously gaveinfluence to writing ability. The significance value of learning styles and types of treatment was 0.617 (F=0.669)>0.05 showing that learning styles and types of treatmentsimultaneously did not giveinfluence to writing ability.The significance value (Sig.) of gender, learning styles and types of treatment was 0.456 (F=0.884)>0.05 indicating that gender, learning styles and types of treatmentsimultaneously did not giveinfluence to the learners' writing ability.The further explanation of each variable contribution was as follows:

THE TYPES OF GRAPHIC ORGANIZERDID NOT GIVE INFLUENCE TO WRITING ABILITY.

Thetable 3 indicated that the significance value (Sig.) of treatments(ICT-GO, P-GO, N-GO) was 0.000 (F=48.775)<0.05indicating that null hypothesis expressing that the types of graphic organizerfactor did not give influence to writing abilitywas rejected; and the alternative hypothesisstating that the types of graphic organizerfactorgave effect to the learners' writing abilitywasaccepted. To conclude, types of treatment gave effect significantly to writing ability.In this case, both ICT based graphic organizer and paper based graphic organizer performed better than Non-graphic organizer in the learners' writing ability.The average score of ICT based graphic organizer was 84.61; paper based graphic organizer was 71.24; and Non-graphic organizerwas 62.04, as illustrated in Table 4.

Table 4. The mean score of ICT-GO, P-GO, N-GO

Dependent Variable:Writing Ability (Y)				
			95% Confidence Interval	
Types of treatments (x1)	Mean	Std. Error	Lower Bound	Upper Bound
ICT Based Graphic Organizers	84.611	1.669	81.258	87.965
Paper Based Graphic Organizers	71.240[a]	1.570	68.085	74.395
Non-Graphic Organizers	62.044	1.577	58.876	65.213

Then, based on Pairwise Comparison Table, it revealed the mean difference between ICT based GO and paper based GO was 13.371 sig. 0.000; the mean difference between ICT based graphic organizer and non graphic organizer was 22.567sig. 0.000; the mean difference between paper based graphic organizer and non graphic organizer was 9.196, sig. 0.000. It meant that a difference occurred amongst ICT based graphic organizer, paper based graphic organizer and non graphic organizer on the learners' writing ability, as illustrated in Table 5.

Table 5. Pairwise Comparisons on Treatments

Dependent Variable:Writing Ability (Y)						
					95% Confidence Interval for Difference[b]	
(I) treatments	(J) treatments	Mean Difference (I-J)	Std. Error	Sig.[b]	Lower Bound	Upper Bound
ICT Based Graphic Organizers	Paper Based Graphic Organizers	13.371*,[a]	2.291	.000	8.767	17.976
	Non-Graphic Organizers	22.567*	2.296	.000	17.953	27.180

Paper Based Graphic Organizers	ICT Based Graphic Organizers	-13.371*,c	2.291	.000	-17.976	-8.767
	Non-Graphic Organizers	9.196*,c	2.225	.000	4.724	13.667
Non-Graphic Organizers	ICT Based Graphic Organizers	-22.567*	2.296	.000	-27.180	-17.953
	Paper Based Graphic Organizers	-9.196*,a	2.225	.000	-13.667	-4.724

GENDER DID NOT GIVE INFLUENCE TO WRITING ABILITY.

The output of table 3 indicated that the F value of gender was 0.894and the p was 0.349>0.05. It showed that null hypothesis stating that the types of gender factor did not give effect to writing abilitywasaccepted; and the alternative hypothesis expressing that the types of gender factorgave effect to the learners' writing ability was rejected. It was statedthat gender did not give significant difference on writing ability. In this case, both male and female had the same ability. The average score of male was 72.29 and female was 73.09, as illustrated in Table 6.

Table 6. The average score of Male and Female

Dependent Variable:Writing Ability				
			95% Confidence Interval	
Gender(x2)	Mean	Std. Error	Lower Bound	Upper Bound
Male	72.292a	1.382	69.514	75.069
Female	73.089	1.263	70.552	75.626

Then, based on Pairwise Comparison Table, it revealed the mean difference between male and female was -0.797 sig. 0.672> 0.05 indicating there was no significance difference between male and female I on the learners' writing ability, as illustrated in Table 7.

Table 7. Pairwise Comparisons on Gender

(I) gender	(J) gender	Mean Difference (I-J)	Std. Error	Sig.b	95% Confidence Interval for Differenceb	
					Lower Bound	Upper Bound
Male	Female	-.797a	1.872	.672	-4.559	2.965
Female	Male	.797c	1.872	.672	-2.965	4.559

THELEARNERS' LEARNING STYLEDID NOT GIVE INFLUENCE TO WRITING ABILITY.

The output of table 3 indicated that the F value of learners' learning stylewas 7.228 and the significance value was 0.002<0.05 indicating that null hypothesis expressing that thelearners' learning style factor did not give influence to writing abilitywas rejected; and the alternative hypothesis statingthelearners' learning style factorgave effect to the learners' writing abilitywas rejected. To conclude , learners' learning stylegave significant difference on the learners' writing performance. In this case, visual learners performed better than the others. The average score of visualwas 75.43; auditory was 73.98; and kinesthetic was 67.97, as illustrated in Table 8.

Table 8. The average score of learners' learning style

Dependent Variable:Writing Ability (Y)				
			95% Confidence Interval	
Learning Style (x3)	Mean	Std. Error	Lower Bound	Upper Bound
Visual	75.431	1.439	72.538	78.323
Auditory	73.975	1.477	71.008	76.942
Kinesthetics	67.940a	1.983	63.955	71.925

Then, based on Pairwise Comparison Table, it revealed the mean difference between visual and auditory was 1.456 sig. 0.484;the mean difference between visual and kinestehetic was 7.491 sig. 0.004; andthe mean difference between auditory and kinestehetic was 6.035 sig. 0.018; . It meant that there was a significant significance difference amongvisual, auditory and kinestehetic learners in writing ability. In this case, visual learners improved better followed by auditory and kinesthetic learners, as illustrated in Table 9.

Table 9. Pairwise Comparisons on learners' learning styles

Dependent Variable:Writing Ability						
(I) Learning Style	(J) Learning Style	Mean Difference (I-J)	Std. Error	Sig.[a]	95% Confidence Interval for Difference[a]	
					Lower Bound	Upper Bound
Visual	Auditory	1.456	2.062	.484	-2.688	5.599
	Kinesthetics	7.491*,b	2.450	.004	2.567	12.415
Auditory	Visual	-1.456	2.062	.484	-5.599	2.688
	Kinesthetics	6.035*,b	2.472	.018	1.067	11.003
Kinesthetics	Visual	-7.491*,c	2.450	.004	-12.415	-2.567
	Auditory	-6.035*,c	2.472	.018	-11.003	-1.067

GENDER AND GRAPHIC ORGANIZERDID NOT GIVE INFLUENCE TO WRITING ABILITY

The output of table 3 indicated that the F value of gender and types of graphic organizers factors was 4.764and p value was 0.013<0.05. It showed that null hypothesis stating that gender and types of graphic organizerfactors did not give effect to writing ability was rejected, and the alternative hypothesisstating that gender and types of graphic organizerfactorsgave effect to the learners' writing ability was accepted. It meant that gender and graphic organizersimultaneously gave effect to writing ability.The average score of male ICT Based Graphic Organizerswas 81.78; Paper Based Graphic Organizers was 68.67; Non-Graphic Organizers was 62.55. Meanwhile, the average score of female ICT Based Graphic Organizerswas 87.44; Paper Based Graphic Organizers was 72.96; Non-Graphic Organizers was 58.87; as shown in Table 10.

Table 10. The interaction effect between gender and treatments

gender	treatments	Mean	Std. Error	95% Confidence Interval	
				Lower Bound	Upper Bound
Male	ICT Based Graphic Organizers	81.778	1.950	77.858	85.697
	Paper Based Graphic Organizers	68.667[a]	2.708	63.224	74.110
	Non-Graphic Organizers	65.222	2.554	60.091	70.354
Female	ICT Based Graphic Organizers	87.444	2.708	82.002	92.887
	Paper Based Graphic Organizers	72.956	1.894	69.150	76.761
	Non-Graphic Organizers	58.867	1.850	55.148	62.585

LEARNERS' LEARNING STYLE AND TYPES OF GRAPHIC ORGANIZERDID NOT GIVE INFLUENCE TO WRITING ABILITY

The output of table 3 indicated that the F value of learners' learning style and types of graphic organizers factors was 0.669and the significance value was 0.617>0.05 showing that null hypothesis expressing that learners' learning style and types of graphic organizer did not give effect to writing ability was accepted; and the alternative hypothesisstating that learners' learning style and types of graphic organizergave effect to the learners' writing ability was rejected. It meant that learning styles and types of treatmentsimultaneously did not give effect significantly to writing ability.The average score of visualICT Based Graphic Organizerswas 88.50; Paper Based Graphic Organizers was 73.08; Non-Graphic Organizers was 64.71. Meanwhile, the average score of auditoryICT Based Graphic Organizerswas 84.33; Paper Based Graphic Organizers was 70.72; Non-Graphic Organizers was 66.88. Then, the average score of kinesthetic ICT Based Graphic Organizerswas 81.00; Paper Based Graphic Organizers was 68.60; Non-Graphic Organizers was 54.55. as illustrated in Table 11.

Table 11. The interaction effect between learners' Learning Style and treatments

Learning Style	treatments	Mean	Std. Error	95% Confidence Interval	
				Lower Bound	Upper Bound
Visual	ICT Based Graphic Organizers	88.500	1.748	84.987	92.013
	Paper Based Graphic Organizers	73.083	3.028	66.998	79.169
	Non-Graphic Organizers	64.708	2.534	59.617	69.800
Auditory	ICT Based Graphic Organizers	84.333	2.708	78.890	89.776
	Paper Based Graphic Organizers	70.717	2.009	66.680	74.753

	Non-Graphic Organizers	66.875	2.873	61.102	72.648
Kinesthetics	ICT Based Graphic Organizers	81.000	3.830	73.303	88.697
	Paper Based Graphic Organizers	68.600[a]	2.967	62.638	74.562
	Non-Graphic Organizers	54.550	2.775	48.973	60.127

GENDER AND LEARNERS' LEARNING STYLEDID NOT GIVE INFLUENCE TO WRITING ABILITY

The output of table 3 indicated that the F value of gender and learners' learning style factors was 1.030and the significance value was 0.364>0.05 showing that null hypothesis expressing that gender and learners' learning styledid not give influence to writing ability was accepted; and the alternative hypothesisstating that gender and learners' learning stylegave effect to the learners' writing ability was acceptedwas rejected. It meant that gender and learning stylessimultaneously did not give effect significantly to writing ability. The average score of male visual was 73.50; auditory was 74.78 and kinesthetic was 66.75. Meanwhile, theaverage score of female visual was 77.36; auditory was 73.17 and kinesthetic was 68.73 as illustrated in Table 12.

Table 12. The interaction effect between gender and Learning Style

Dependent Variable:Writing Ability					
				95% Confidence Interval	
gender	Learning Style	Mean	Std. Error	Lower Bound	Upper Bound
Male	Visual	73.500	2.149	69.181	77.819
	Auditory	74.778	2.211	70.334	79.222
	Kinesthetics	66.750[a]	3.028	60.665	72.835
Female	Visual	77.361	1.915	73.512	81.210
	Auditory	73.172	1.957	69.239	77.106
	Kinesthetics	68.733	2.617	63.475	73.992

GENDER, LEARNERS' LEARNING STYLE, AND TYPES OF GRAPHIC ORGANIZERSDID NOT GIVE INFLUENCE TO WRITING ABILITY.

The output of table 3 indicated that the F value of gender,learners' learning style and types of graphic organizers factors was 0.884and the significance value was 0.456>0.05 indicating null hypothesis expressing that gender, learners' learning style, and types of graphic organizersdid not give influence to writing abilitywas accepted; and the alternative hypothesisstating that gender, learners' learning style, and types of graphic organizersgave effect to writing ability wasrejected. It meant that gender, learning styles and types of treatmentsimultaneously did not give effect significantly to writing ability, as illustrated in Table 13.

Table 13. The Interaction effect among gender * Learning Style * treatments

Dependent Variable:Writing Ability						
					95% Confidence Interval	
gender	Learning Style	treatments	Mean	Std. Error	Lower Bound	Upper Bound
Male	Visual	ICT Based Graphic Organizers	87.333	2.211	82.889	91.777
		Paper Based Graphic Organizers	67.500	4.691	58.073	76.927
		Non-Graphic Organizers	65.667	3.830	57.969	73.364
	Auditory	ICT Based Graphic Organizers	83.000	3.830	75.303	90.697
		Paper Based Graphic Organizers	69.833	2.708	64.390	75.276
		Non-Graphic Organizers	71.500	4.691	62.073	80.927
	Kinesthetics	ICT Based Graphic Organizers	75.000	3.830	67.303	82.697
		Paper Based Graphic Organizers	.[a]	.	.	.
		Non-Graphic Organizers	58.500	4.691	49.073	67.927
Female	Visual	ICT Based Graphic Organizers	89.667	2.708	84.224	95.110

		Paper Based Graphic Organizers	78.667	3.830	70.969	86.364
		Non-Graphic Organizers	63.750	3.317	57.084	70.416
	Auditory	ICT Based Graphic Organizers	85.667	3.830	77.969	93.364
		Paper Based Graphic Organizers	71.600	2.967	65.638	77.562
		Non-Graphic Organizers	62.250	3.317	55.584	68.916
	Kinesthetics	ICT Based Graphic Organizers	87.000	6.634	73.668	100.332
		Paper Based Graphic Organizers	68.600	2.967	62.638	74.562
		Non-Graphic Organizers	50.600	2.967	44.638	56.562

To see further explanation on the interaction effect among variables was illustrated in plot diagram. The figure indicated that there was no interaction effect among variables, as illustrated in Figure 2.

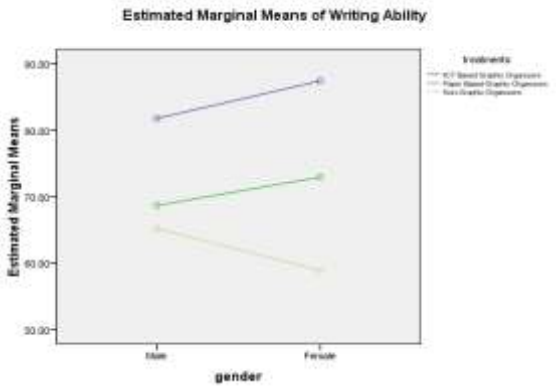

Figure 2. The interaction effect amonggender, learning styles, and treatment

IV. DISCUSSION

The finding confirmed that types of treatments (F= 48.775; p=0.000); and learners' learning styles (F= 7.228; p=0.002)gave effect on the learners' writing ability. The study also indicated that there was an interaction effect between different sex and types of treatment (F=4.764, p=0.013) on the learners' writing ability. In contrast, the finding found that gender (F= 0.894, p= 0.349)did not give influence; and gender and learning styles(F=1.030, p=0.364); learning styles and types of treatment(F=0.669, P=0.617); gender, learning styles and types of treatment 0.456 (F=0.884, p=0.456) gave no effect on learners' writing ability. The study concluded that gender, learning styles and graphic organizers did not give influence simultaneously on writing ability, and the ICT based graphic organizer and visual learners got the highest score in their writing ability. The finding was in line with (Lancaster, 2013; Miller, 2011; Myrick & Siders, 2007; Hirose, 2003; Sabarun.et.al.2020). The finding was also in accordance with Brown (2011), and Lanchaster (2013).This was in line with Miller (2011), Kajder (2005), and Ellis (2004).Capretz, Ricker, & Sasak, (2003); Delrose, (2011); Brovero, (2004); Uba et al., (2016). The finding was also in line with Myrick & Siders, 2007; Dowell, Tscholl, Gladisch, & Asgari-Targhi, 2009; Roa Pinzón,2012; Reyes, 2011; Antolini & De Bernardi, 2006; Belland, 2010; Bishop et al. (2015); Meera and Aiswarya (2014); Mahmudah (2016); Maad and Maniam (2017);andHamiche (2017). There were some potential factors why GO gave facilitative effects to learners' argumentative writing. First, GOs are able to aid learners to keep on the topic while writing. Second, GO helps learners make visualization of information and indicates how elements connected each other. Third, it enhances argumentative essay, and track correlation among thoughts, facts and ideas. Fourth, webbing GO makes easier to brainstorm ideas. Webb GO is a great way to see how various topics are interrelated. It is very useful during the brainstorm stage of the process of writing. Here, learners can visualize easily web while writing argumentative essay. To conclude, this finding contributes to the scientific works on webbing graphic organizer in L2 writing. `

V. RECOMMENDATION

This study showed a real picture about the effect on webbing graphic organizer in L2 writing. Based on the results, some recommendations were proposed. First, webbing graphic organizer has been evidenced to improve the L2 learners writing performance. Therefore, writing teachers should use webbing graphic organizer in teaching argumentative esssays. Second, learners' learning style has been evidenced to improve the L2 learners writing performance. Therefore, before starting to teach, writing teachers should identifylearners' learning style in order to choose the teaching strategy appropriately. They should employ a variety of teaching strategies and newest writing material by considering learners' learning style. Third, there was an interaction influence between gender and types of treatmenton the learners' writing ability.The use of IT in today's EFL teaching is highly needed to improve learning quality. Other researchers and academicians can conduct similar research to a larger number of samples and with different academic levels, or by using other elements that may affect learner learning writing outcomes. Since this study limited the learning outcomes to students' writing test, future researchers may also expand to a broader area of research involving other variables such as economic status, age, research design, and education level, so that next researches could be deeply investigated.

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