

The Effectiveness of Using Graphic Organiser as A Pre-Writing Strategy in Generating Ideas for Muet Argumentative Writing among Matriculation Students

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Abstract: The purpose of this research was to examine the effectiveness of employing argumentative graphic organiser at a pre-writing stage on matriculation students in order to generate better argumentative essays. 30 participants were randomly assigned to two groups during English class in Perak Matriculation College (KMPk). Both groups had the same teacher. The control group received conventional instruction while the experimental group were additionally required to plan their writing on argumentative graphic organiser (AGO) at the pre-writing stage and compose an essay based on the constructed organiser. All participants were required to sit for pre- and post-tests to track their writing performance before and after the experimental group took a tutorial on how to use and make use of A.G.O. After the implementation of the intervention, comparison of the students' mean scores of the pre- and post-tests showed a statistically significant improvement in the experimental students' ability to generate better argumentative essay in terms of point of view, unity and coherence, development, organization, and thinking. The results highlight the effectiveness of employing argumentative graphic organiser (A.G.O) as a focused instructional strategy at the pre-writing strategy in developing EFL students' writing skill. Pedagogical implications for using argumentative graphic organiser (AGO) are considered.

Keywords: Argumentative graphic organiser (A.G.O), argumentative essays, idea generation, pre-writing strategy

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I. Introduction

1.1 Background of the Study

Matriculation students are MUET candidates. MUET is a test that assesses learners' English language proficiency level and set by the Malaysian Examination Council. There are four components of the MUET assessment namely: listening, speaking, reading and writing. Every component has its own weighting. The writing component allocated 90 marks and makes up to 30% of the overall marks for the MUET score. Generally tested as Paper 4 (MUET 800/4), the writing component comprises of one report writing and one argumentative writing to be completed within one and half hour.

1.2 Problem Statement

In researcher's 13 years of teaching writing lessons and examining matriculation students' writing scripts, especially argumentative writing, we found out that most of them 1) did not plan their writing before they wrote 2) hardly generated ideas 3) presented shallow or immature-treatment of ideas 4) lacked sense of arguments in presented their writing thus disallowing the readers or examiners to see their point of view. Natalie Boyd (2011) defined argumentative writing as is a writing piece meant to persuade someone to think the way you do. If the students are unable to present their arguments convincingly, it defeats the primary objective where it is written to persuade people to change beliefs..

One of the factors why the students were not able to present ideas excellently is because they did not plan their writing beforehand. We experienced asking students how they plan their writing before they write. On average, out of 25 students in the class, only 2 students did so. Although the students were exposed to the format and how to write for instance; thesis statement, main ideas and supporting details, the contents or ideas of their writing seem to be shallow and dry.

From our observation when we asked them to compose argumentative writing, students always claim that they have no idea and do not know what to write. This was supported by psychologists where they claimed that students have two concerns when given a writing task; what to say and how to say (Bereiter & Scardamalia, 1987). At tertiary level, schemata or vocabulary should not be a debatable issue as they started learning English since they were in pre-school. Thus, this leads the researcher to investigate the effectiveness of using the graphic

organiser as a pre-writing strategy in enhancing matriculation students' ability in generating ideas for argumentative writing where through graphic organiser, it may help students to plan and organise their writing better. Briefly, graphic organiser is an instrument used to expose students to the significant of the structure and organized written in argumentative writing. Therefore, this enabling them to convey clear and meaningful content when they write as presenting content knowledge is the task demand in writing expository.

1.3 Purpose of the Study

The purpose of this study is to find out the effectiveness of argumentative graphic organizer (AGO) as a pre-writing strategy in enhancing argumentative writing. All in all, the aim of using argumentative graphic organizer is to help students in generating ideas and enabling students to write argumentative writing presentably and cohesively.

1.4 Objectives of the Study

The objectives of this study are:

- a. to find out whether argumentative graphic organizer (A.G.O) helps students to generate better ideas.
- b. to identify students' performances in presenting their arguments using graphic organizer .
- c. to find out the impact of graphic organizer on students' paragraph writing

1.5 Research Questions

This study is conducted to answer the following research questions:

- a. to what extent does graphic organiser helps students generates ideas when writing?
- b. to what extent does graphic organiser helps students in presenting their arguments?
- c. what is the impact of graphic organizer on students' paragraph writing?

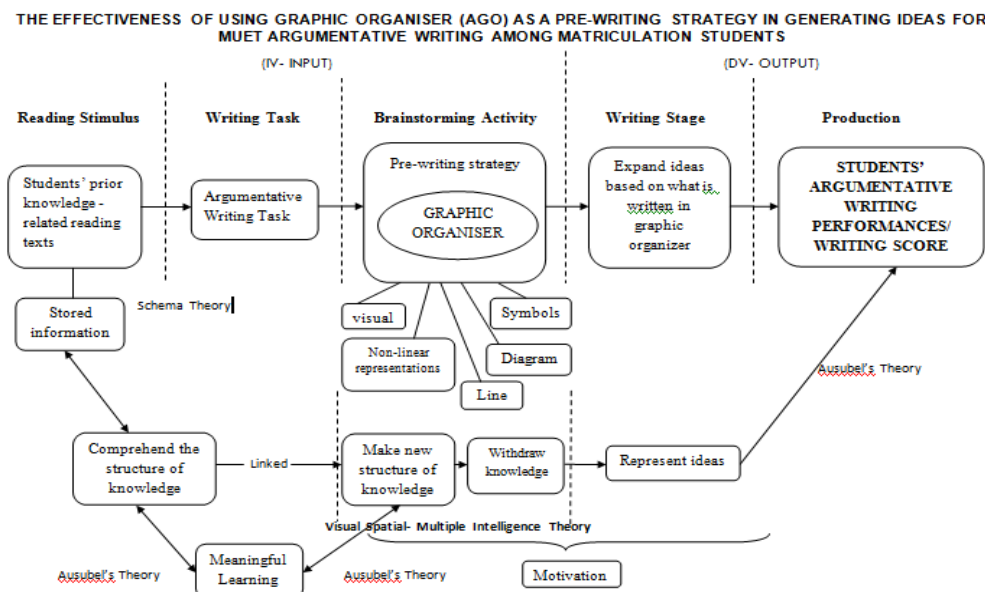
1.6 Research Significance

In Malaysian context, the grades in the English Paper in the secondary school certificate, Sijil Pelajaran Malaysia (SPM) and the MUET (Malaysian University English Test) are a primary entrance requirement for local universities or programmes of institutions of higher learning. In both examinations, a writing component is tested. In fact, both examinations give significance to writing as it is an important component, which reflects language ability. It is hope that through this study, it i) prepare students for strategic learning – using argumentative graphic organizer and ii) help students to achieve better score for MUET writing question 2.

Due to above reasons, this study will try to examine the effectiveness of using graphic organiser in enhancing matriculation students' ability in generating ideas for argumentative writing. It is hope that this study will enlighten English teachers or lecturers who are teaching MUET candidates to opt for this strategy in helping the students in preparation to write a good piece of essay during MUET writing (800/4) examination.

1.7 Theoretical Framework

Theoretical framework below draws the relationship of graphic organiser amongst three learning theories namely the Multiple-intelligence (visual-spatial), the Schema Theory and the Ausubel's assimilation learning theory.



1.7.1 Brainstorming Vs Graphic Organiser

Writing is a complicated process which involves a number of cognitive and metacognitive activities, for instance; brainstorming, planning, outlining, organizing, drafting, and revising. Learning to write is difficult since students do not know enough about how to generate ideas for writing. As effective writing is considered to be a problem for the ESL students, a serious consideration should be put to find out some ways of teaching that can help students improve their writing performance specifically for writing. One way of helping students to overcome some problems that they face in writing tasks is the use of brainstorming activities. According to Scane, Guy and Wenstrom (1991) "brainstorming activities motivate students who do not usually want to write by creating a nonthreatening atmosphere" (p.14). In the same vein, brainstorming is beneficial in giving students the opportunity to see their ideas down on paper before they actually begin to write (Harmer, 2001).

Thus, this study proposes a procedure to writing specifically at the brainstorming stage by using graphic organiser. The use of graphic organiser as a pre-writing strategy during brainstorming stage has positive effects on the students' task performance in many ways according to previous studies. It helps to stimulate creativity, activate prior background knowledge, generate ideas, arouse their interest to stay on task, and thus promote the quality of their language production. (Rao, 2007).

1.7.2 Theory of Multiple-Intelligence (Visual-Spatial)

The theory of multiple intelligences that was introduced by Howard Garner is inserted in this study as the major instrument of this research. Graphic organiser is used and it represents the visual-spatial intelligence. Graphic organiser has been defined as 'visual, non-linear representations of ideas and their relationships' (Biktimirov and Nilson 2006). To put it in context, graphic organiser is a visual graphic display that shows the relation between facts, terms or ideas within a learning task (Hall & Strangman, 2002). The visual representation of graphic organisers provides students with a structural framework of information to be learned. In this light, Alamsyah (2009) explains that graphic organiser work well as their visual design enables students to see the relationship between ideas, and encourages them to group certain ideas together as they proceed. Graphic organizer is seen as a tool to help students overcome problems with the organization of their ideas and thoughts (McGriff, 2000).

1.7.3 The Schema Theory

In order for the students to write with content, they need to have schemata, which is known as background knowledge or stored information. All our generic knowledge is embedded in schemata and continues to change as new information is received. In this study, the schemata are a series of reading texts that are related to the argumentative writing task. Once students are equipped by related knowledge, they would be able to write better. In conjunction to that, through the knowledge received by the students, they would be able to withdraw the knowledge onto graphic organizer; a readily-designed graphic organiser for them to generate and organise their ideas for argumentative writing. In other studies, Gabriele Wulf (1991) was further able to show that individuals who utilized a motor schema for learning were better able to transfer this knowledge to other situations.

1.7.4 Ausubel's Assimilation Learning Theory

The schema theory is interrelated with Ausubel's Assimilation learning theory by cognitive psychology, Ausubel's who believes that learning of new knowledge relies on what is already known. That is, construction of knowledge begins with the observation and recognition of events and objects through concepts we already have. Primarily, Ausubel's theory focuses on meaningful learning. According to his theory, to learn meaningfully, individuals must relate prior knowledge with the new information. New knowledge must interact with the student's knowledge structure in order for the students to learn effectively. It is a process where students comprehend the structure of knowledge and consciously make new structures fit with the organisation of ideas in the brain. Adding to the above statement, meaningful learning according to Ausubel's (2000) theory occurs when students intentionally attempt to integrate new knowledge with existing knowledge or simply put connects some structure develop from previous knowledge. A student who attempts to integrate knowledge has a more extensive network of knowledge and therefore more retrieval paths.

1.7.5 Putting Theory into Practice

How this theory related with graphic organiser? Graphic organiser helps represent ideas in a way that models an individual's cognitive structure. Most importantly, the goal of graphic organiser is the meaningful learning on certain conditions (1) students must have relevant background knowledge (2) knowledge structure should be relevant and well-organised relevant (3) students' knowledge should be represented in a form of a graphic organiser. In this study, for whatever schemata that are received by the students, a graphic organiser should be integrated it to the current task given to make it meaningful. According to Chohan (2011), writing is better learned when students are engaged, helped to organize their thoughts, and allowed to express their own experiences. It is worth noting that, Lancaster (2013) reports that when students have the chance to participate in writing workshops and used a variety of graphic organisers, writing becomes meaningful, creative and more

enjoyable. The use of such organisers, thus promotes understanding, and enhances organization and long-term retention of information. It stresses meaningful learning, which serves to facilitate learning and minimize boredom (Janssen, Beissner & Yacci, 1993).

All in all, the combinations of these three theories have directed the researcher to see the relationship of a social process in this study vividly.

II. Literature Review

2.0 Literature Review

2.1 Learning Strategies

In recent years, the trend has been shifted away from the focus on what people learn to how they learn and owing to this reason, teachers play a vital role to impart new strategies in their students' learning process. According Weinstein and Mayer (1986, p. 315) took learning strategies as "behaviours and thoughts that a learner engages in during learning and that are intended to influence the learner's encoding process". However Oxford (1990) proposed that learning strategies are actions on the part of learner that facilitate and expedite learning in a more self-directed and effective mode.

If the students know how a piece of text is organized, it would help them to make better sense and awareness of the information presented in the text and this would assist the students when they start writing.

2.2 Graphic Organiser, Concept Maps and Mind Mapping Strategy

According to Ellis (2004) Graphic organisers (also known as concept maps and mind maps, among other terms) can take many forms, including a page of loosely organized notes, a simple outline, a Venn diagram, a connected organisational chart, or a bubble graph. Besides, graphic organisers enable the writer to organize material logically and to see relationships between and among ideas. Graphic organiser can be a very powerful tool for assessing students' (a) knowledge of the content (e.g: social studies, sciences) (b) thinking skills such as the ability to structure information and (c) some habits of the mind such as creativity, and commitment to quality.

To add into context, poor writers are likely to use the knowledge telling strategy where students think and write whatever comes to their mind meanwhile experts writers use the knowledge transforming strategy (Chien, 2007, 1). In addition, graphic organiser used during pre- writing stage would provide students with a clear mental representation of their writing plan and lead to better essay. Chai (2006) finds there seems to be a positive association between the quality of planned writing and essay scores. The effective use of graphic organisers can help the writer to present his or her ideas in an effective and persuasive manner, resulting in a focused and coherent text. Graphic organizers can be used during the pre-writing stage or at any other time during the writing process. For example, a student who has written a draft lacking in coherence and purposeful organisation could benefit from using a graphic organizer during conferencing with the teacher or peers.

In the same vein, concept maps was introduced by Prof. Joseph D. Novak's through his research programme where the study is to understand changes in children's knowledge of science. Concept maps plays as a tool for organizing and representing knowledge. It is also allow children to understand the relationship between ideas by creating a visual map.

Similarly, another theory that supports the idea of concept maps in language learning is Multiple Intelligence theory where it falls specifically under visual-spatial intelligence category. It is the ability to perceive the visual/ spatial word accurately. The intelligence involves sensitivity to color, line, shape, space, form, and art activities. It includes the capacity to graphically represent visual or spatial ideas. According to the Multiple Intelligence theory in one of its principles, various teaching methods and techniques should be used to enable meaningful learning by using different branches of intelligence. This is due to the reason that mind mapping contains visual elements such as correlations, images, words, figures which help students use their brain more effectively. Thus, it increases students' motivation and active participation. The mind maps is one of the techniques that encourage students to use full potentials and it makes learning easier and generates mental images for memory and recall. The mind maps, a natural function of the mind, are the fastest way to think creatively (Rostron, 2002:117 cited in Taufik Hidayah). Mind mapping helps a group capture complex ideas quickly, easily, and visually, to see the big pictures and identify relationships among ideas and processes (Streibel, 2002:118 cited in Taufik Hidayah). According to Taufik Hidayah, (no year) mind mapping is a technique that is thought to contribute to the development of intelligence areas and it enables meaningful and permanent learning. To distinguish the different between mind mapping and concept maps, mind mapping are generally seen to have less formal than concept maps (Glasgow et al, 2010).

Based on Jonassen (1993), Beissner & Yacci (1993), mind-mapping strategy is suggested to be useful for brainstorming, planning, structuring ideas, thoughts, and concepts, knowledge generation, and fostering self-regulated learning and problem solving. Hence, this shows a significance point where concept maps and mind mapping can be implemented when planning writing in a way to generate ideas.

According to numerous previous studies, it is worth noting that the effect of concept mapping strategy on the writing performance of sixty Iranian EFL students at the intermediate level, Nagari (2011) found that the instruction of concept mapping strategy positively and significantly enhanced the students' writing achievement. Meanwhile, Mansor and Rahimi (2011) determined the effect of concept mapping strategy on the writing performance of Iranian EFL university students, and concluded that the experimental group significantly outperformed the control group during posttest, and stressed the value of using concept-mapping technique for developing the writing skill.

As far as this study is concerned, concept maps, as graphic representations brought myriad benefits. It helped students brainstorm and generate new ideas, organise and represent their thoughts to further understand information and discover new relationships, scaffold for cognitive processing, summarize and organize previous learning, consolidate educational experiences, develop critical thinking, defy long-held ways of thinking, boost learning achievements and interests.(Tseng, 2012: 102-115).

Considering the successfulness of previous studies and evidence where concept maps works in generating better writing, hence this study examines the effectiveness of using graphic organiser (readily-designed graphic organiser) as a pre-writing strategy in enhancing Matriculation students' ability in generating ideas for argumentative writing. It however differs to previous studies conducted in four ways. First, the use of graphic organiser is dealt at pre-writing stage which is focused on instructional strategy. Second, the type of writing is mainly focused on argumentative writing. Third, the graphic organiser is tested to a group of students, who have not yet been studied. Forth, the graphic organiser is a readily-designed-graphic organiser which is designed from the concept mapping idea.

III. Methodology

3.1 Introduction

This chapter presents the research design of the study. In addition, the rationale for utilizing the research method is described and the detailed account of the research design is provided.

3.2 Research Design

The study used a randomized Pre-test-Post-test design.

3.3 Participants

In this research, the participants consisted of 60 science students. 30 of the students were selected for experimental group and the other 30 were taken for controlled group. For the purpose of this particular research, random and purposive sampling method is applied to the research design. In this research, the participants were selected due to their representativeness of the criteria to be researched upon; the MUET writing component. Most of the students selected are those whose pre-test score for writing is band 2 and above.

3.4 Instruments

The instruments employed for this study were mainly test. However, in order to obtain students' score, other instruments were taken into account. Argumentative graphic organiser (AGO) is a readily template used as a pre-writing strategy before writing argumentative essay. Meanwhile, students' writings during pre-test and post-test were assessed by the researchers and experience MUET examiners. The test score is graded based on the argumentative marking criteria which was adapted from M.R. Al-Shaer (2014).

Research Questions	Instruments
To what extent does graphic organiser helps students generates ideas when writing?	Test score
To what extent does graphic organiser helps students in presenting their arguments?	
What is the impact of graphic organizer on students' paragraph writing?	

3.4.1 Graphic Organiser

Argumentative graphic organiser is the main instrument of all. (Refer appendix A).

3.4.2 Argumentative Marking Criteria

The marking rubric was adapted from Argumentative marking criteria. (Refer Appendix B). Raters for pre-test and post-test are the researchers and experience MUET markers. The content analyses that the researcher or raters focused on are i) point of view ii) development of content iii) organization of the ideas v) arguments.

3.5 Data Collection Procedures

The research procedures were as follows:

- a. Before the treatment session began, the students from bpth experimental and controlled group wrote pre-test essays in order to determine their level of proficiency – ensure that they were at about the same level of writing ability. The title of the pre-test essay is 'Study Locally is better than Study Oversea'. Do you agree?.

- b. The raters gave scores to each composition using argumentative marking criteria.
- c. Based on the first composition results, 60 students were selected. Then, they were randomly assigned to controlled and experimental groups.
- d. The MUET textbook and the instructional materials used were identical for both groups and they received instructions as required in the textbook under the same conditions.
- e. In treatment phase with experimental group, the researcher devoted time to introducing the features of a particular argumentative graphic organizer and explained the term used in each box besides demonstrating ways to utilize the argumentative graphic organiser.
- f. Researcher monitored this process and gave help as needed. The students handed in their AGO and their essays. The researcher examined their AGO over the topic of ‘Examination should be abolished’. Do you agree?’
- g. During the post-test session, a new essay topic entitled “Local Education System is better than Overseas education system. Do you agree?” was given to the experimental students and controlled group. The researcher decided to chose the topic under the same theme which is Education. The main reason is to prepare the students for more information and background knowledge before they write. The only difference was that the students in the experimental group were asked to employ an argumentative graphic organiser as a pre-writing strategy and compose the required essays based on an argumentative graphic organiser (AGO). However, conventional procedures were used for the controlled group.

3.5.1 Writing skill pre-test

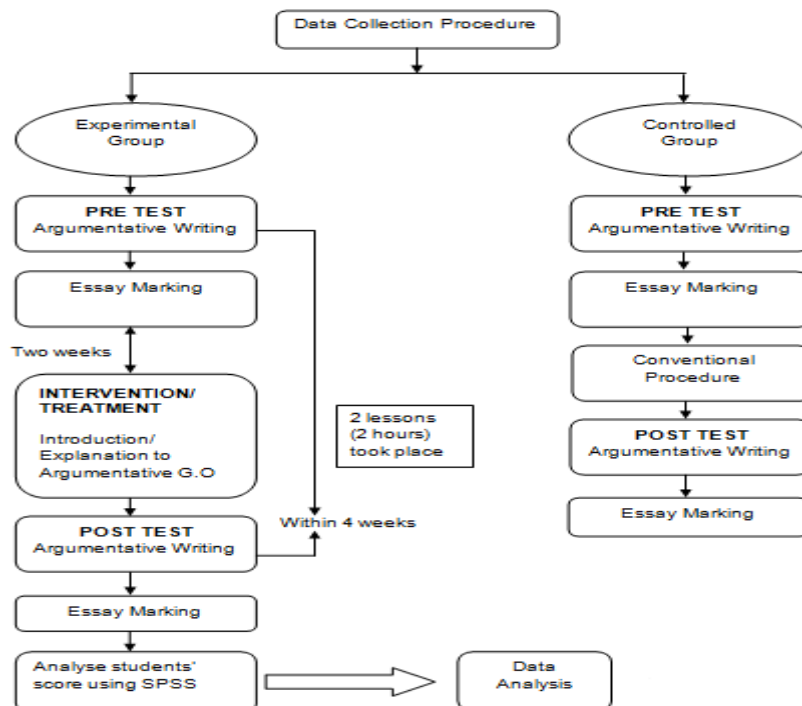
For the purpose of pre-testing the writing skill of both groups, all students were asked to write argumentative essays based on a writing task adapted from their MUET text book. The students were asked to complete the test in one hour, under test conditions. The students’ writings were examined by two English lecturers based on argumentative marking criteria.

The researcher was not one of the raters to eliminate the biasness that might come from the expectancy effect due to the interaction with the students in both groups. Inter-rater correlations were computed in order to compare the two raters’ scores. The minimum correlation was (0.87), which meant that the two raters were fairly consistent with how they assessed the students’ essays and therefore the inter-rater reliability was decent. The two raters’ scores were then calculated into average and rounded to one decimal point.

In order to test all the participants’ performance level, an independent sample t-test was performed to compare the mean scores of the two groups in the writing pre-test. The results indicated that there was a statistically significant difference between the pre-test means of both groups ($p < 0.005$).

On the other hand, paired sample T-test was also performed to compare the pre-test and post-test scores for each writing criteria namely i) points of view ii) development, content and completeness iii) unity and coherence iv) organization and v) thinking in order to response to research question 2 and 3. However, for research question 3, the researcher make use of the mean score analysis generated from paired sample T-test.

DATA COLLECTION PROCEDURES



3.6 Method of Analysing Data

The researchers in the following statistical processing used the Statistical Package (SPSS) for analyzing all processes:

- a. Calculating the mean
- b. Calculating the standard deviation.
- c. T-test to examine the difference between the performance of control and experimental groups.

IV. Findings And Discussion

4.0 Results, Analysis, and Discussion

After applying the experiment, the researchers conducted a post-test they analyzed the study outcomes to figure out the impact of using argumentative graphic organiser (AGO) on science students and the results were as follows:

Table 1: Results of the post test for the control and experimental groups. Paired Sample T-Test

Groups	Mean (SD)		t(df)	P-value
	Pre-test	Post-test		
Experimental	24.10 (7.64)	31.80 (7.43)	6.002 (29)	.000
Control	19.63 (5.92)	21.53 (6.64)	3.996 (29)	.000

Research Question (1): To what extent does graphic organiser helps students generate ideas when writing?

To answer this question, a paired-samples t-test was conducted to compare the students' achievement between experimental group and control groups. There was an escalating increase for the experimental group from pre-test scores to post-test score where the mean score recorded was 7.7. Thus, it shows a significant difference in the scores for the experimental group ($p < 0.001$, $t(df) = 6.002(29)$). Meanwhile, respondents in the control group also exhibited a significant difference with a minimal increase of mean score 1.90. ($p < 0.001$, $t(df) = 3.996(29)$)

Table 2: Results of pre test and post-test writing criteria for experimental group Paired Sample Test

Writing Criteria	Mean (SD)		t.(df)	Sig. (2-tailed)
	Pre-test	Post-Test		
Post POV- Pre POV	5.20 (1.73)	6.97 (1.47)	6.002 (29)	.000
Post DCC- Pre DCC	4.77 (1.61)	6.37 (1.67)	5.37 (29)	.000
Post UC- Pre UC	4.43 (1.59)	6.10 (1.75)	5.77 (29)	.000
Post O- Pre O	4.53 (1.59)	5.90 (1.90)	4.79 (29)	.000
Post T- Pre T	5.17 (1.51)	6.47 (1.53)	4.45 (29)	.000
TOTALpost-TOTALpre	24.10 (7.43)	31.8 (7.64)	6.303 (29)	.000

Research Question (2): to what extent does graphic organiser helps students in presenting their arguments?

In the response to this question, a paired-samples t-test was employed to compare the pre test and post test scores for each writing criteria. DCC (development, content and completeness) is the writing criterion that depicts arguments, which bring impacts to students' writing as it comply the requirement of argumentative writing. It is worth noting that there was a significant difference in the scores for DCC for experimental group ($M = 6.37$, $SD = 1.67$, $df = 29$, $p < 0.05$). It is observed that graphic organiser play as a tool to help students present their arguments.

Table 3: A comparison of pretest and post-test results between experimental group and control group.

Writing criteria	Control			Experimental		
	Pre-test Mean(SD)	Post-test Mean(SD)	Sig (2-tailed)	Pre-test Mean(SD)	Post-test Mean(SD)	Sig (2-tailed)
Point of view	4.53 (1.48)	5.17 (1.42)	.114	5.20 (1.73)	6.97 (1.47)	.000
Development, Content, Completeness	3.90 (1.40)	4.03 (1.56)	.030	4.77 (1.61)	6.37 (1.67)	.000
Unity and Coherence	3.53 (1.20)	3.67 (1.47)	.016	4.43 (1.60)	6.10 (1.75)	.000
Organisation	3.47 (1.18)	3.77 (1.48)	.004	4.53 (1.59)	5.90 (1.90)	.000
Thinking	4.20 (1.30)	4.90 (1.16)	.010	5.17 (1.51)	6.47 (1.53)	.000
TOTAL	19.63 (5.92)	24.10 (7.64)	.014	21.53 (6.64)	31.8 (7.43)	.000

Question (3): What is the impact of graphic organizer on students' paragraph writing?

Table (3) gives an overview of all data. It displays the mean scores of the pre-test and post-test scores in the five writing components for the experimental and control groups. The overall pre-test mean scores of the control and experimental groups were 19.63 and 24.10, respectively. After the implementation of the intervention, the post-test mean scores for the control and experimental groups were 24.10 and 31.8, respectively.

It is observed that the experimental improved most in the point of view aspect in which their mean score increased from 5.20 in the pre-test to 6.97 in the post-test followed in descending order by unity and coherence, development, organization and thinking.

Moreover, the results also highlight the effectiveness of the graphic organiser as a pre-writing strategy in improving the students' brainstorming ability to jot down more ideas, which enhances development, completeness, and content. This is consistent with Lin's (2003) conclusion that using graphic organiser enhances idea generation in persuasive writing. The results also highlight the effectiveness of the graphic organiser in improving the students' organization.

As shown in Table (5), a paired t-test performed on the mean scores of the pre-test versus the post-test for the control group indicates no significant differences regarding the five aspects of essay writing: point of view (0.114), unity and coherence (0.30), development (0.016), organization (0.10), and thinking.

In short, in certain contexts, graphic organiser is proved to be effective learning/ teaching writing tools. In the argumentative graphic organiser training process, students had the chance to acquire several skills, including how to reflect upon previous knowledge, how to produce new ideas, how to connect ideas, how to more clearly communicate ideas, and how to organize information. These skills enable students to contemplate the associations among concepts (Novak and Gowin 1984), and reflect upon their own (mis)interpretation of such concepts (Boxtel et al. 2002). Once students understand accurately the interrelationships among concepts, they are able to write coherent and organized text. As a result, they improve their writing performance. In the light of these results, teachers are encouraged to utilize a focused instructional strategy of graphic organiser as pre-writing strategy in enhancing their students' writing skill.

V. Limitations, Recommendations, Implications And Conclusion

5.1 Limitations

The limitations of the research are:

- a. Experimental group sessions were conducted after their prime time. Therefore, students were exhausted writing essay on that time.
- b. Process of writing part was not taught during the session. However, they have learned the writing process last semester.
- c. Argumentative graphic organiser (A.G.O) should come along with a few suggested linking words due to inappropriate used of linking words used when the students write their essay.

5.2 Recommendations

According to the study results which revealed the effective use of an argumentative graphic organiser (AGO) compared to the traditional methods of teaching, the study recommends the followings:

- a. Incorporate argumentative graphic organisers (AGO) in writing classes as brainstorming exercises or a pre-writing strategy. Students need to be carefully introduced to the AGO, therefore certain period of training is required before students can successfully master the skill. When the students have the picture of the AGO in their mind, they could remember the framework of the AGO thus this assisting them for better write argumentative essays in MUET writing examination.
- b. Expand the use of a graphic organiser (GO) in other types of writing by using and emphasising the use GO as an educational tool in teaching.
- c. Conduct more studies on GOs for other types of writing.
- d. Motivate students and make the learning of writing a more enjoyable experience by incorporating these organizers into textbook with the help of curricular designers.

5.3.1 Recommendation for Future Study

1. Explore the relationship between argumentative scores and essay writing scores
2. Explore the interaction process during collaborative concept mapping
3. Integrate the graphic organiser with computer-based learning
4. Extend the duration for AGO training.
5. Teaching the process of writing during the intervention session.
6. Provide suggested linking words that should be used in AGO's to avoid students using inappropriate linking words when writing their essays..

5.3 Implications and Conclusion

This study investigated the effectiveness of an argumentative graphic organiser as a pre-writing strategy in generating ideas for MUET argumentative writing practices among matriculation students. The results showed that the experimental group of KMPk students had significantly higher post-test scores than the control group has. The most spectacular result emerge from the data is that an argumentative graphic organiser strategy is beneficial in enhancing students' argumentative writings when it is employed as a focused instructional strategy at a specific pre-writing stage and when properly introduced and monitored. Rao (2007) found that the performance and attitude of the students who received training on a brainstorming strategy was better than the ones of those who did not experience any training.

Clearly, concentrating on the argumentative graphic organiser (AGO), establishing logical connections among ideas and organizing them based on readily constructed maps at the pre-writing stage enabled matriculation students to demonstrate improvement in composing better argumentative essays in terms of points of view, unity and coherence, development, organization and thinking.

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