

**BRAINSTORMING ACTIVITIES AND DEVELOPMENT OF IDEAS IN ACADEMIC
WRITING: A STUDY AT THE THIRD SEMESTER OF UNDERGRADUATE
STUDENTS OF ENGLISH DEPARTMENT OF IKIP MATARAM ACADEMIC YEAR
2015/2016**

BY

MARIANA

Meriyenkenneth@gmail.com

ABSTRACT

This study aims to investigate the significant development of the students' academic writing after they were taught using three techniques of brainstorming activity in the third semester of English department of IKIP Mataram academic year 2015/2016. This study is an experimental research with pretest-post test group design. There were 20 students in free writing (FW) group, 12 students in listing (L) group and 14 students in clustering (C) group involved in the study. FW group was given treatment by using free writing technique of brainstorming; L group was taught using listing technique of brainstorming and C group was taught using clustering technique of brainstorming. Writing test and open questionnaires were the instruments to collect the data. The data were analyzed by using *t-Test: Paired Two samples for Means* and *One Way Anova*. The result of the analysis indicates that: (1) FW technique can help the students to develop their academic writing performance since the t -stat is lower than t -crit (t -stat < t -crit or $-5.33124 < 2.093024$). It means that there is a significant difference of the students' writing performance after being taught using FW technique; (2) there is significant development of the students' academic writing performance after being taught using L technique as the t -crit is higher than t -stat (t -crit > t -stat or $2.200985 > -2.962808765$); (3) there is also significant development of the students' academic writing performance after being taught using C technique because the t -stat is lower than the t -crit score (t -stat < t -crit or $-3.38369 < 2.160369$); (4) those three techniques of brainstorming have equal effectiveness to the development of the students' academic writing performances. This is proven by the Anova test that P score is higher than alpha 0.05 ($0.747 > 0.05$). Meanwhile, the students' perception on the techniques of brainstorming used in their prewriting activity is described based on the result of their answers on the opened-questionnaires.

Key word: Brainstorming Techniques, Freewriting, Listing, Clustering and Academic Writing.

ABSTRAKSI

Penelitian ini bertujuan untuk menemukan perkembangan kemampuan menulis mahasiswa semester III bahasa Inggris, IKIP Mataram tahun akademik 2015/2016 setelah mereka diajarkan untuk menggunakan tiga teknik brainstorming pada kegiatan pra menulis mereka. Penelitian ini adalah penelitian experimental dengan desain kelompok pre-test dan post-test. Sample penelitian ini dibagi menjadi 3 kelompok di mana kelompok freewriting (FW) terdiri dari 20 mahasiswa, 12 mahasiswa pada kelompok listing (L) dan 14 mahasiswa di kelompok clustering (L). Kelompok FW diajarkan untuk menggunakan teknik *freewriting* dalam kegiatan mengembangkan ide ide mereka; Kelompok L diajarkan mengembangkan ide ide mereka dengan menggunakan teknik *listing*, dan kelompok C diajarkan untuk mengembangkan ide ide mereka dengan menggunakan teknik *clustering*. Instrumen yang digunakan untuk mengumpulkan data adalah tes menulis dan kuisisioner terbuka. Data dianalisis dengan menggunakan *t-Test: Paired Two Samples for Means* pada *Microsoft Excel* dan *One Way Anova* pada *SPSS*. Hasil analisis menunjukkan bahwa: (1) teknik *freewriting* dapat membantu mahasiswa untuk mengembangkan ide dan kemampuan menulis mereka yang dibuktikan dengan perolehan skor t-hitung lebih rendah dari t-tabel ($t\text{-hit} < t\text{-tab}$ atau $-5.33124 < 2.093024$). (2) terdapat perkembangan yang signifikan terhadap kemampuan menulis mahasiswa dengan menggunakan teknik *listing* untuk mengembangkan ide ide mereka yang ditunjukkan dengan skor t-tabel lebih tinggi dari t-hitung ($t\text{-tab} > t\text{-hit}$ atau $2.200985 > -2.962808765$); (3) hasil analisis statistik juga menunjukkan bahwa teknik *clustering* dapat meningkatkan kemampuan menulis akademik mahasiswa yang dibuktikan dengan perolehan skor t-hitung yang lebih rendah dibandingkan dengan t-tabel ($t\text{-hit} < t\text{-tab}$ atau $-3.38369 < 2.160369$); (4) ketiga teknik brainstorming tersebut memiliki efektifitas yang setara terhadap pengembangan ide dan peningkatan kemampuan menulis akademik mahasiswa bahasa Inggris IKIP Mataram. Kesimpulan ini didukung oleh hitungan statistik dengan menggunakan tes ANOVA, di mana nilai P lebih tinggi dari alpha 0.05 ($0.747 > 0.05$). Pendapat mahasiswa terhadap teknik brainstorming yang digunakan dipaparkan berdasarkan jawaban mereka pada kuisisioner terbuka.

Kata kunci: Teknik Brainstorming, Freewriting, Listing, Clustering, Tulisan Akademik

A. INTRODUCTION

Writing is needed and is taught to fulfill each level of education starting from the basic level such as writing an essay to the advanced one such as writing a dissertation. In other words, writing is used as the final project to be accomplished to get the label as an educated person, and to reach professionalism in certain field, for example as a researcher, an educator or a teacher, a lawyer, a doctor or an accountant. It is in line with Bailey's (2006) statement that students commonly have to complete a variety of writing task during their studies, ranging from short IELTS essays to lengthy dissertations. This writing may be done either under exam pressure or as coursework. In addition, the type of writing they are asked to do depends on the subject they are studying; future lawyer will be given quite different tasks from potential pharmacists.

There are many problems faced by the students in writing activity. One of them is the lack of reading exposure and the lack of cognitive competence. Barkaoui (2007) in his TESL report states that in order to write effectively, learners should acquire the mastery of linguistic, cognitive and sociocultural competencies. Surely, being incompetence in those three competencies mentioned earlier will hinder the students to write effectively.

I used to teach academic writing for about three and half years at the English department of undergraduate students of IKIP Mataram. Through this experience I observed that the students faced many

problems in writing such as, most of them could not make well-grammatical sentence. Many mistakes found related to the use of tenses and subject verb agreement. Another problem the students of English department of IKIP Mataram faced was they had limited corpus. So, when they were asked to write, they took longer time to prepare the words that they would use. Even, they often asked the lecturer so many questions dealing with the diction.

Above all, developing ideas in academic writing was the major problem which the students faced in writing class. Hence, the students who were not familiar with the topic given, may not be able to recall their ideas. They also felt hard to develop the ideas that support their topics. So, when they were given a writing test to be accomplished within certain time allocation, they spent much of their time thinking about the way to reach a minimum number of characters or texts instead of thinking about related ideas that should be written on their paper.

Likewise, they failed in supporting their thesis by using related supporting sentences. They even wrote too many topics within a single paragraph. The sentences in that paragraph looked like choppy sentences that did not relate to each other. As the result, the message or the information that the students wanted to convey through their writing was not clear.

Students who have limited English vocabulary tend to use certain words frequently. This condition surely causes them to be stuck, and they can hardly think creatively about their topics. In fact, when I observed their writing assignments given by their writing lecturer, there were some

students who just followed the patterns given by the lecturer without developing their own supporting ideas. This makes their writings awkward, and they did not contain a complete thought.

The students' minds set about writing as the most difficult subject also hinder them to conduct writing. Because good writing requires good mastery of English grammar, vocabulary and reading comprehension, most of the students whose mastery of grammar, vocabulary and reading comprehension are still low, find writing a hard activity to conduct.

To ensure my prior observations, I gave them a kind of writing pre-test. Those pre-tests were assigned to two classes of the third semester of undergraduate students of IKIP Mataram academic year 2015/2016. Both classes were given the same writing test, and then they were categorized into three groups namely freewriting group, listing group and clustering. The result of the pre-test showed that most of the students from those groups had low ability in academic writing. In fact, the mean score of freewriting group was 55.85. The lowest score was 40, and the highest score gotten by the student was 70. Meanwhile, the mean score of listing group was 58.4; the minimum score gotten by the student was 40, and the maximum score gotten by the student was 76. Finally, the mean score of clustering group in the pre-test was 68; the minimum score was 47, and the maximum score was 81.

Considering the problem of IKIP students to develop their ideas in academic writing, some techniques or tips to help them generating their ideas should be introduced. The

activity of developing ideas called brainstorming activity which is done before actually writing the drafts. In this activity, students can generate their ideas as many as possible without worrying the correctness of sentences' grammar, phrases, spelling of the words and organization of the text. When they feel they have produced complete ideas, they can read carefully the ideas they have written and they should prepare to do next step, outlining/planning stage. They can rearrange the ideas they have written, or they can cross out unrelated supporting ideas in this stage. Next, they can start writing their first draft, and if they are not satisfied with the result of their writing in the first draft, they can revise it for text structure and mechanic until they are ready to submit the final draft. By doing this activity, the students can gain greater control over their ability to plan, revise and edit their texts (Oshima and Hogue, 1999 and Cumming, 2001).

In recent years, many studies on brainstorming activity in academic writing have been conducted such by Styati (2010); Chrismat (2009); Zainuddin and Fransisca (2015); Pratiwi (2010); INAL (2014); Putri (2011); Hariani (2013); Rao (2007) and Devi (2006). Those studies prove the effectiveness of brainstorming activity in improving the students' ideas development in academic writing, yet most of those were focusing on a single technique (clustering technique) rather than comparing some techniques. Hence, it is interesting to explore the effectiveness of three techniques of brainstorming proposed by Oshima and Hogue (1999) and Elbow (2000). Those three techniques are freewriting technique, listing

technique and clustering technique. Hopefully, the students are able to apply various techniques to generate their ideas. Thus, by considering the reasons above, I conducted a research entitled: Brainstorming Activities and Development of Ideas in Academic Writing: A Study at the Third Semester of Undergraduate Students of English

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B. RESEARCH METHOD

This experimental research was conducted in a normal class setting of English department students of IKIP Mataram in which the teaching held within the writing lecture hours. It was designed in a pre-test post-test design, and the students' achievement before and after the treatment can be seen (Arikuto, 20014 and Sugiyono, 2015). The samples of this research were taken from two classes. The classes were grouped into three groups. The first one was free writing (FW) group, and this group would be given treatment of brainstorming activities using free writing technique; other group would be grouped into listing group (L) which was given treatment of brainstorming activity using listing technique, and the last group was clustering (C) group which was given treatment of brainstorming activity using clustering technique.

In this research, I used two instruments to collect the data: the written production test and the students' answers on the questionnaires. The writing papers were written by the third semester students on some topic lists. The test was in the form of descriptive texts. The result of the students' essay

writing used as the data to know students' writing competence before and after treatment was given. The students' post-test scores became the basis to find the effectiveness of the three techniques of brainstorming activity, and to find the most effective technique among those three. Furthermore, the students' perception on those three techniques is elaborated based on their answers on the opened-questionnaires.

C. RESEARCH FINDING

Based on the data finding and data analysis, those three techniques of brainstorming have equal effectiveness in helping the third semester students of English department of IKIP Mataram academic year 2015/2016 to develop their ideas in their academic writing activity. These finding is slightly discussed in the following section.

1. The Significant Development of the Students' Writing Performances before and after Being Taught Using Free Writing Technique of Brainstorming

To answer the question whether there is any significant development of the students' writing performance after taught using free writing technique of brainstorming, I used t-test paired two sample for Means to analyze the data as shown in the following table.

Table 1. The Result of t-Test For Freewriting Technique

t-Test: Paired Two Sample for Means		
	<i>Variable 1</i>	<i>Variable 2</i>
Mean	55.85	67.55
Variance	110.3447	
Observations	20	
Pearson Correlation	0.684621	
Hypothesized Mean Difference	0	
Df	19	

t Stat	-5.33124
P(T<=t) one-tail	1.91E-05
t Critical one-tail	1.729133
P(T<=t) two-tail	3.81E-05
t Critical two-tail	2.093024

It shows that the Pearson Correlation score is 0.684621 . This means that there is close relation of the technique of brainstorming used to the result of the students' writing performance after the treatment was given. The score of t-stat is lower than the score of t-crit ($-5.33124 < 2.093024$). So, it means there is a significant development of the students' writing performance after being taught using free writing technique of brainstorming. It can be concluded that free writing technique of brainstorming is affective in helping the students' to improve their ideas in academic writing. The finding above is also in line with the theories proposed by Elbow (2000) and Oshima and Hogue (1999) about the effectiveness of FW technique in developing the ideas and writing skill. Elbow states that free writing is simply private, nonstop writing and an easy artificial exercises, yet it continues to be enormous help to professionals and skilled writers.

In addition, Oshima and Hogue (1999) stated that free writing is a brainstorming activity in which the students can write freely about a topic, and through this activity the students are able to generate ideas as many as possible related to the topic she/he intends to write about. She also adds that the students can feel relax when doing this activity because they can write freely about a topic without worrying the appropriateness of the sentences, grammar and the other judgments on their free writing. They can do correction, add some ideas or

delete the unrelated ones in the next revising stages.ing.

2. The Significant Development of the Students' Writing Performances before and after Being Taught Using Listing Technique of Brainstorming

To answer the next question whether there is any significant development of the students' writing performance after being taught using listing technique of brainstorming. Below is the data analysis using t-test paired two sample for Means.

Table 2. The Result of t-Test For Listing Technique

t-Test: Paired Two Sample for Means		
	Variable 1	Variable 2
Mean	58.41666667	65.75
Variance	109.9015152	114.5681818
Observations	12	12
Pearson Correlation	0.672639471	
Hypothesized Mean Difference	0	
Df	11	
t Stat	-2.962808765	
P(T<=t) one-tail	0.006455143	
t Critical one-tail	1.795884814	
P(T<=t) two-tail	0.012910286	
t Critical two-tail	2.200985159	

The Pearson Correlation score (0.673) shows that there is a close relation of listing technique of brainstorming to the result of the students' ideas development in their academic writing performance after the treatment was given. Furthermore, the score of t-stat is -3.00186, and t-crit's score is 2.200985. It obviously shows that the score of t-crit is higher than t-stat ($2.200985159 > -2.962808765$). It means that there is a significant development of the students' writing performance after they are taught using listing technique

of brainstorming. Thus, it can be concluded that listing technique of brainstorming is also effective in helping the students' to improve their ideas in academic writing. This finding also related to theories proposed by Oshima and Hogue (1999) that listing technique is an effective technique of brainstorming that helps the students to form list of ideas from any words or phrases which come into mind. So, the students can make a long list of words that related to the topics they are going to write.

Neidlinger (2015) also states that this listing activity is an effective way to build "word banks" where the writer can collect some words based on the kind of word she or he may need in her or his writing. This technique is very suitable for the writers who want to find a variety of words which suit a specific project without repeating some same words for many times.

3. **The Significant Differences of the Students' Writing Performances before and after Taught Using Clustering Technique of Brainstorming**

The following table also shows that there is significant development of the students' writing performance after taught using clustering technique of brainstorming.

Table 3. The Result of T-test for Clustering group

	<i>Variable 1</i>	<i>Variable 2</i>
Mean	68	73.57143
Variance	83.69231	86.10989
Observations	14	14
Pearson Correlation	0.776548	
Hypothesized Mean Difference	0	
Df	13	
t Stat	-3.38369	

P(T<=t) one-tail	0.002447	
t Critical one-tail	1.770933	
P(T<=t) two-tail	0.004893	
t Critical two-tail	2.160369	

The score of Pearson Correlation (0.777) indicates that there is a close relation of clustering technique of brainstorming to the result of the students' writing performance after the treatment was given. It is clearly shown that the score of t-stat is lower than the score of t-crit (-3.38369 < 2.160369). Because the t-crit's score is higher than the t-stat's score, it can be concluded that clustering technique of brainstorming is also effective in helping the students to improve their ideas in their academic writing.

4. **The Most Effective Technique of Brainstorming out of the Three Techniques Researched**

To find out which technique of brainstorming that is the most effective one, I will use SPPSS, one way ANOVA, F test (if the variance of the population is homogen) or Brown-Fosythe and Welch test (if the variance of the population is not homogen) to analyze the data. If the P score is lower than 0.05 or $P < 0.05$, H_0 is rejected, and H_1 is accepted that there is a single technique which is the most effective one compared to the other two techniques. Nonetheless, if the P score is higher than 0.05 ($P > 0.05$) means that H_0 is accepted that all techniques are the same, and they have the same effectiveness. Once H_1 is accepted, comparison test on ANOVA such as LSD, Bonferroni and Tukey test (if the population is homogen) or Tuhane's T2, Dunnet's T3, Games Howell and Dunnet's C test(If the population is not homogen) can be proceeded (Santosa and Ashari, 2005:113). To ease me to find the answer of this

question, I formulate H_0 and H_a hypothesis such as the followings.

- 1a. $H_0: \mu_{FW} = \mu_L = \mu_C$
- 1b. H_1 : There is one technique that is different from the other two

I attached the following data analysis in the tables below.

Table 4. Data Homogeneity test

Levene Statistic	df1	df2	Sig.
3,691	2	43	,033

This homogeneity test shows that P score is 0.033. It means that H_0 is rejected that the variance of the population is not homogen or different as the significant score is lower than alpha 0.05. So, that Brown Forsythe and Welch test is applied to know whether there is any different technique out of the three technique of brainstorming. The following table shows the test.

Table 5 .Test of Means Difference of FW, L and C techniques

	Statistic ^a	df1	df2	Sig.
Welch	2,492	2	26,904	,102
Brown-Forsythe	2,063	2	40,900	,140

a. Asymptotically F distributed.

The table above shows that the score of Welch statistic is 2.492 with significant score (P) 0.102. It is clear that the P score is higher than 0.05 ($P > 0.05$). Moreover, the score of Brown-Forsythe is 2.063 with significant score 0.140. This test also shows that the P score is higher than alpha 0.05. As the result, H_0 is accepted that those three techniques of brainstorming have equal effectiveness to the development of ideas in essay writing. There is no single best technique out of the three.

This finding supports Oshima and Hogue (1999) theory that those

three techniques of brainstorming ideas are equally useful for learners which relieve them to get started writing more quickly, and to save their time in the later stages of writing process. What the students need to do to these three techniques are learning and understanding how to apply the three of them, and then they can decide which one is the most productive one for them.

In addition, Berne (2009) mentions that no prewriting activity is useful if it does not lead quickly to writing, and so it is unproductive to demand that all students use the same strategies. Furthermore, she stated that filling out of a graphic organizer, brainstorming a long list of possible topics, or talking with friends about plans for a paper can all be helpful forms of prewriting. They offer a student-centered activity that can be very beneficial for writing class, since the students freely generate ideas based on the principle of avoiding judgment. These activities then hopefully can give a situation where the students feel free to express their ideas or thought.

5. Students' Perceptions on Brainstorming Techniques Used in Academic Writing.

Based on the students' answers on the open questionnaires, most of the them have positive perception on the three techniques of brainstorming applied in their prewriting activity. They can prepare their actual academic writing better by first generating their ideas in the brainstorming activity. In summary, their positive perception on these techniques make them able to write far more better than before applying these techniques as it was found by Christmast (2009) in his research that the majority of the students participating in the research project felt positive about the effectiveness of

the brainstorming techniques used. All students agreed to some extent that the techniques had helped them to prepare more effectively for their writing tasks.

D. CONCLUSION

The data analysis used to answer the research questions about the effectiveness of the three techniques of brainstorming (freewriting, listing and clustering) in helping the students of the third semester of English department of IKIP Mataram academic year 2015/2016 to generate ideas in their academic writing activity, the best technique among the three. All of those three techniques have the same effectiveness in helping the students to generate their ideas as it was proven by the T-test paired for two samples that the t-stats are lower than the t-crits. It means that the techniques used in brainstorming the ideas in pre-writing activity have significant influences to the students' ideas development in academic writing.

After analyzing the data using ANOVA test on SPSS to find the best technique among those three, I come to a final answer that there is no best technique out of that three techniques of brainstorming. It is proven by both P scores on Welch and Brown Forsythe tests that they are higher than 0.05. In conclusion, all of them have equal effectiveness to the students ideas development, and most of the students who applied these techniques have positive perceptions on them. Hence, they could finish their writing assignment better and more effectively.

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