

# Brainstorming and Mind-mapping: Crucial Basic Skills Duet in Building Critical Thinking for Academic Composition

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## ABSTRACT

Academic writing in English has been a challenging basic skill for most English learners despite the levels of fluency the learners have. The range of struggle extends from the limited knowledge of the topic to the less practice in technical academic writing process. Although the challenges vary from one learner to another, there is a similar struggle indicated, particularly in starting the composition process. Brainstorming and mind-mapping have been commonly introduced as the initial phase for academic writing. Nevertheless, they are not as extensively practiced as the next steps of drafting. The next challenge in academic writing highlights the struggle in presenting logical flow of ideas to reflect the critical thinking of the writer. Interestingly, this struggle is closely related to the initial process of collecting and clustering ideas through brainstorming and mind-mapping. According to Pareto Principle, the 20% focus on building “vital few” – in this context is the basic skill – leads to 80% effective results of improvement. Thus, the extensive practice in brainstorming and mind-mapping as the basic skills in academic writing is believed to be crucial to support the whole composition process; particularly in developing the ideas and keeping the track of those ideas to present the critical and logical thinking of the writer.

**Keywords:** Brainstorming, mind-mapping, critical thinking, academic composition.

## INTRODUCTION

Writing has been widely indicated as one of the basic skills in communication both in daily life and academic context. Moreover, it is commonly imposed since early childhood with simple writing of characters and alphabets and leveled up to words, phrases, and more complex sentences for compositions as the learning process is improved. In academic institutions, writing has also been the basic indicator of understanding. This is reflected on how schools, colleges, and higher educational institutions put on writing as one of the assessment criteria for freshmen acceptance. In this level, writing is well known as academic writing.

Academic writing – in general – has been a challenging basic skill for learners, especially for second language learners. English learners, despite their levels of fluency, also struggle to master this skill. The range of struggles extend from the limited knowledge of the topic to the less practice in technical academic writing process. Although the challenges vary from one learner to another, there is a similar struggle indicated, particularly in starting the composition process. There are at least two challenges prior to writing; getting too many ideas and or having less even no ideas. One of the recommended techniques to overcome these barriers is brainstorming for prewriting activities.

Brainstorming has been widely introduced to collect ideas – including the odd ones – of a specific topic. When it was first introduced by Alex F. Osborn, it was initiated to encourage his team members to pour out their creative ideas and contribute solutions towards the company’s problems at that time. This method has been an effective tool to gather more ideas and stimulate new suggestions. Therefore, brainstorming is commonly promoted by writing tutors and teachers as the initial step in the writing process which is collecting keywords of a topic. Oshima and Hogue (2006) dedicated a brief appendix in the textbook of Writing Academic English to the prewriting process which included brainstorming to list and cluster ideas.

The next challenge after collecting many ideas is connecting and clustering them to create a cohesive composition. This challenge is addressed with another technique popularized by Tony Buzan, mind-mapping. While Oshima and Hogue (2006) clustering method is striking through the irrelevant keywords in the list, Buzan introduced spider-web writing method that enables learners to identify connections and clusters of relevant ideas without crossing the irrelevant ones. This method is also widely used for the prewriting phase.

Regardless of their promotions as the “vital few”, both brainstorming and mind-mapping are less extensively

practiced compared to the next steps of writing (outlining and drafting). Therefore, learners often start their writing process directly with writing or typing sentences and skipping the prewriting process. As a result, the writing process is not built strongly from its base since the thinking process with the duet of brainstorming and mind-mapping is missed. Consequently, the writers of academic writing often struggle in presenting a logical flow of ideas that reflects their critical thinking throughout their essay/writing.

By adopting the Pareto Principle, intensive practices on the duet of brainstorming and mind-mapping for academic writing are highlighted as crucial basic steps (20% vital few) which nurture improved results (80%) in building a composition that reflects the critical perspective and understanding of the writers.

## METHOD

### A. Literature Review

#### Academic writing in English

Academic writing in English is a specific genre of writing which is applied and required in formal education institutions from schools to universities. The process of writing this genre requires some steps as well as using more formal, objective, and advanced vocabulary in English. Most textbooks of English Academic Writing provide thorough steps of writing from creating sentences (topic sentence, thesis statements) to paragraph development. Nevertheless, the books also include the prewriting process for the learners in the appendices. Oshima and Hogue (2006) as well as Shafiei and Savage (2007) provide the initial writing stages in the Appendix part of the textbook they wrote. The prewriting phase is, then, rarely introduced as the main highlight of the materials. This indicates that the learning process of this stage is conducted less intensive compared to the following steps in drafting and editing. The prewriting stage is usually conducted as the introduction of the class/semester session. However, it is not less practiced in the upcoming sessions. Meanwhile, the process of building sentences and developing paragraphs are mostly taking almost the entire session of the semester in Academic Writing class.

#### Brainstorming and mind-mapping

Brainstorming is one of the common features of the prewriting process in academic writing (in English). In this stage, learners are encouraged to list creative ideas and keywords about an assigned topic. There are many types of brainstorming in its improvement. However, there are four original features highlighted by Osborn:

1. Target the quantity.
2. Judgment-free.
3. Open and welcome new (wild) ideas.
4. Combining ideas as the follow up.

Brainstorming is mostly a timed method for generating and collecting ideas. While doing a timed brainstorming, learners are put in a less-stress situation by withholding criticism towards the collected keywords. Thus, they are free to explore and to express their thoughts. This is crucial for learners to avoid the limits to their thoughts with “right-or-wrong and relevant-or-not”.

#### Mind-mapping

Additionally, mind-mapping is introduced in the prewriting process to complete the last feature of brainstorming by combining and clustering the relevant keywords into groups. Clustering ideas into logical parts is also recommended by Shafiei and Savage (2007) to plan the entire paper. This tool enables the learners to select the sub-topics for their writing and organize them in logical order for the readers. Oshima and Hogue (2006) also promote this method for the learners to think of relevant supporting details for their subtopics. Thus, the paragraphs developed contain more relevant details to support the logical flow of the entire essay.

#### Pareto Principle

Unlike brainstorming and mind-mapping, Pareto Principle has never been introduced in the writing process of an academic essay. However, this paper recommends the implementation of this effective principle towards the learning process of academic writing for teachers and learners. Pareto Principle was founded by the Italian economist, Vilfredo Pareto who observed that the 20% vital few of the population dominated the 80% land ownership at that time. In general, this 80/20 rule implies that 80% outcomes (in many fields) are the result of 20% efforts. Then, this rule, known as Pareto Principle, is largely adopted in many contexts such as business and management as well as in academic context. In academic context, Pareto's Law is applied in focusing the learning process in building strong basic understanding which impacts 80% result of learning improvements. This paper recommends the implementation of Pareto Principle for Academic Writing learning process by intensively practicing the crucial basic skills of prewriting through brainstorming and mind-mapping. Thus, greater improvements in critical thinking and composition are anticipated as the result of learning.

## B. Observation towards five young English learners at a private English course.

### Learners' Profile

Learners are students in grade 6, 7, and 8 who specifically learn writing and composition. All students are studying at the international schools in Surabaya which implement international curricula using English as the medium of instruction for all class subjects. All tasks, therefore, are required to be conducted in English and mostly in the form of summative reports or essays. Most learners are familiar with brainstorming and mind-mapping. However, they have learned the techniques superficially at schools when the teachers introduced the writing techniques.

### Learners' Learning Process and Progress.

The writer and the learners hold online regular sessions (during pandemic in 2021 to present) to learn about academic writing. Each session consists of 10 weekly meetings with a specific topic of composition in each meeting. The learners are practicing all steps in academic writing starting from the prewriting process. Brainstorming and mind-mapping are introduced and intensively practiced throughout the first 10-week session.

After 10 meetings, the learners give feedback about the duet of brainstorming and mind-mapping. They are also asked to rate their own progress reflected from their new habit in doing essay tasks (implementation of the duet) as well as evaluating their school grades in those tasks.

## FINDINGS AND DISCUSSION

### Learners' Needs

Alb (6): He intensively learns brainstorming and mind-mapping to pre-planning of the writing section at the Cambridge test.

Cath (7): She is learning English conversation and is introduced to brainstorming and mind-mapping as the tools to collect ideas for a simple presentation.

Nad (8) and Chr (8): They are taking special sessions to learn about composing essays in English. The duet of brainstorming and mind-mapping are also introduced and practiced throughout the sessions.

Eug (8): He is learning English composition because he is struggling with the essay summative tasks at his new school. He was studying at the international school using Mandarin as the medium of communication which implement different academic writing methods.

## Struggles in Academic Composition

### a. Unsatisfactory Grade for Essay Tasks

A brief interview with the learners is always conducted prior to the session. From the interview, the writer discovers that the learners are struggling with unsatisfactory marks for their essay tasks at school amidst the best effort to meet the instructions. This is the common reason they express at the first meeting of the English Composition session with the writer. Moreover, one of the learners also struggles with the different writing style and approach of learning from a Mandarin-based school to an English-based one. Overall, the learners expect to have better results by evaluating their composition skills in writing academic English essays and reports.

### b. Initial Phase of Building Crucial Basic Skills

The writer starts the first two-week of composition sessions with a pre-test and discussion on the freewriting (one paragraph) created by the learners. Then, the writer and the learners analyze the content and the style of writing conducted to create those paragraphs. These freewriting paragraphs portray the initial writing techniques that the learners used and mastered.

In the upcoming session, the learners are also required to share their previous essay work to be analyzed together with the writer. The writer found that most learners missed the instructions of the assignment. The introduction paragraph is usually incomplete with thesis statements. Moreover, the body paragraphs are often out-of-the track of the outlined ideas. Lastly, the closing paragraph sometimes does not exist to wrap up their writing. These findings are strong indicators of their unsatisfactory academic result. In order to overcome this struggle, the writer introduced some samples of the academic writing in English to the learners and analyzed them together with the learners.

Then, the learners are exposed to the prewriting stage in academic writing to reset their composition skills. The writer introduces samples of brainstorming and mind-mapping; explains the method of practicing them and projects the benefits of the duet towards the learners' composition skills. Furthermore, the learners are required to always apply the duet prior to the outlining process of writing an essay/report. During these sessions, the learners may consult their school task at the session as the hands-on experience to apply the basic skills learnt from the sessions. The writer guides the learners to understand their schoolteacher instruction more carefully before the learners start writing. Then, the learners are given time to do brainstorming and mind-map their thoughts using paper or

notebook. The writer checks the result of the duet and gives some feedback as the guidelines for the learners composing their papers. Moreover, the learners are encouraged to always refer to their mind-map while creating the essay's outline to keep the track of ideas and their logical flow. This is crucial because during the drafting stage, learners might get caught with overthinking and irrelevant ideas if they leave out the mind-map result. The mind-map, then, becomes a kind of blueprint of the masterpiece.

### **Implementation of Pareto Principle in the composition sessions.**

The first 10-week composition sessions are dedicated to intensively practice brainstorming and mind-mapping while other steps are introduced in parallel. The duo, brainstorming and mind-mapping become the "vital few" (20%) or the foundation skills to build a solid composition (80%). Although the duet is often promoted as complementary steps in academic writing, they are proven to be the very effective basic skills for prewriting that learners should have and learned.

### **Learners' Feedback after intensive practice of brainstorming and mind-mapping:**

**Alb (6):** The duet is a new skill for him. It is also an enjoyable method for planning the Cambridge test. Furthermore, he practiced the duet for composing his outline for other essays or summative assessments.

**Cath (7):** She gets a new perspective about the duet. Prior to the intensive practice, she used to brainstorm with longer sentences rather than keywords. Now, the duet is more fun and easier to understand for her after practicing them throughout the sessions. Moreover, she experiences progress in generating more words in a shorter time after several rounds of brainstorming, from 11 words in 5 mins into 10 sub-branches words in 2 mins.

**Nad (8):** The duet is a new way of learning academic writing for her. It is also fun and challenging at first because she tends to "think" about the relevance of all the keywords. Now, she is mastering the duet better than before. She also finds it very useful to comprehend the writing process. She remarks on a leap of progress in her academic grades.

**Chr (8):** She is familiar with mind-mapping at school, but she never applies it thoroughly prior to writing an essay. Now, the duet is easier to understand and to practice for her. She also remarks on gradual progress in her academic grades.

**Eug(8):** The duet is a new way of learning writing for him. It is easy to understand and helpful for his essay

tasks in English. He once left out this prewriting process in his task and he got an unsatisfactory grade. However, in the upcoming tasks, he practiced the prewriting process (the duet) in creating the essay outline and he got a better result.

### **CONCLUSION**

The extensive practice in brainstorming and mind-mapping as the basic skills in English academic writing is believed to be crucial to support the whole composition process; particularly in developing the ideas and keeping the track of those ideas to present the critical and logical thinking of the writer.

Brainstorming activity has been an effective moment to boost the out-of-the-box creative ideas and creative thoughts about the assigned topic. It is also effective to help the learners fighting against the brick walls of ideas and enable them to extend their perspective. By leaving out the irrelevant keywords, the composition is kept on the track. Interestingly, those recorded irrelevant words are sometimes useful as the new ideas for other upcoming essays. Meanwhile, mind-mapping practice is also effective for the learners to select the relevant highlights and supporting details for the subtopics. The spider-web method also promotes the idea development by creating new branches of keywords during the process. Then, the learners are helped to connect the dots of ideas and synthesizing reasons/arguments into the outline for their essays.

Moreover, the process of allocating 20% efforts in building prewriting skills in academic writing through practicing the duet has shown 80% satisfactory improvement among the learners. Overall, all the young learners stated in this paper are currently having new prewriting routines by planning the composition by the blueprint from the duet of brainstorming and mind-mapping. The learners who practiced the "vital few" of prewriting phase are performing better in understanding the assigned topic and have a new habit of starting the writing process with the duet. As a result, the learners can create better outlines and more organized compositions and get better academic progress.

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