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# Proceedings

## **The 4th Annual INTERNATIONAL SEMINAR on Transformative Education and Educational Leadership**

Theme : Education Innovation in Indonesia Context Focused  
on Disruptive Technology of Industrial Revolution 4.0.

23 - 24 September 2019  
Garuda Plaza Hotel - Jln. Sisingamangaraja No. 18  
Medan, North Sumatra - Indonesia



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**Rundown of The 4<sup>th</sup> Annual Internatioanal Seminar on Transformative Education and Educational Leadership (AISTEEL) 2019**  
**Garuda Plaza Hotel, Medan, 23 – 24 September 2019**

**1st day (Monday, September 23, 2019)**

Time	Activities	PIC
15.00 – 20.00	Registration in Garuda Plaza Hotel	committee

**2nd day (Tuesday, September 24, 2019)**

Time	Activities	PIC/Moderator
07.00 – 08.30	Poster Sessions 1	Section Poster 1
08.30 - 09.00	<b>Opening Ceremony</b> 1. MC Speech 2. Traditional Welcome Dance 3. Indonesian National Anthem 4. Pray 5. Chairperson Report 6. <b>MoU signing between Unimed and PSU - Thailand</b> 7. Welcoming speech of Director of Postgraduate School 8. Welcoming speech and official opening of Rector of State University of Medan	MC
09.00 – 09.40	Plenary Lecture 1: <b>Prof. Dr. Syawal Gultom, M.Pd</b> (State University of Medan– Indonesia)	Moderator Section
09.40 – 10.25	Plenari Lecture 2 <b>Prof. W. L. Quint Oga-Baldwin</b> (Department of Education, Faculty of education and Integrated Art and Sciences, Waseda University - Japan)	Prof. Amrin Saragih, PhD (Panel)
10.30 – 11.15	Plenari Lecture 3 <b>Prof. Dr. Wu-Yuin Hwang</b> (Graduate Institute of Network Learning Technology National Central University, NCU - Taiwan)	
11.15 – 12.00	Plenari Lecture 4 <b>Prof. Dr. Ekkarin Sungtong</b> (Dean of Faculty of Education Prince of Songkla University - Thailand)	Mangara Simanjorang, PhD (Panel)
12.00 – 12.45	Plenari Lecture 5 <b>Asst. Prof. Patcharin Panjaburee, Ph.D.</b> (Mahidol University – Thailand)	
<b>12.45 – 13.30</b>	<b>Lunch Break/</b> Poster Sessions 2	Section Poster 2
<b>13.30 – 15.30</b>	<b>Parallel Session 1</b>	
15.30 – 16.00	Break/ Poster Sessions 3	Section Poster 3

15.50 – 18.00	<b>Parallel Session 2</b>	Moderator/Operator
18.00 – 19.00	Break/ Prayer	
19.00 – End	Banquet (Gala Dinner) - Announce of Best Presenter - Announce of Best Poster	Consumption Section

## **Proceedings of the 4<sup>th</sup> Annual International Seminar on Transformative Education and Educational Leadership (AISTEEL 2019)**

### **Preface**

The 4<sup>th</sup> Annual International Seminar on Transformative Education and Educational Leadership (AISTEEL 2019) was held in Garuda Plaza Hotel, Medan City-Indonesia on 23-24 September 2019. This seminar is organized by Postgraduate School, Universitas Negeri Medan and become a routine agenda at Postgraduate program of Unimed now.

The AISTEEL is realized this year with various presenters, lecturers, researchers and students from universities both in and out of Indonesia participating in, the seminar with theme “Education, Learning and Leadership Innovation.”

The plenary speakers coming from various provinces in Indonesia have been present topics covering multi disciplines. They have contributed many inspiring inputs on current trending educational research topics all over the world. The expectation is that all potential lecturers and students have shared their research findings for improving their teaching process and quality, and leadership.

The fourth AISTEEL presents a keynote speaker and 4 distinguished invited speakers from Indonesia, Japan, Taiwan, and Thailand. In addition, presenters come from various Government and Private Universities, Institutions, Academy, and Schools. Some of them are those who have sat and will sit in the oral defence examination.

There are 310 articles submitted to committee, some of which are presented orally in parallel sessions, and others are presented through posters. The articles have been reviewed by double blind reviewer and 172 of them were accepted for published by Atlantis Press indexed by International Indexation and 96 papers are published by digital library indexed by google scholar.

The Committees of AISTEEL invest great efforts in reviewing the papers submitted to the conference and organizing the sessions to enable the participants to gain maximum benefit.

Grateful thanks to all of members of The 4<sup>th</sup> Annual International Seminar on Transformative Education and Educational Leadership (AISTEEL 2019) for their outstanding contributions. Thanks also given to publisher for producing this volume.

The Editors

**Bornok Sinaga**  
**Rahmad Husein**  
**Juniastel Rajagukguk**

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# The Cognitive Process of Different Gender in Writing Argumentative Text

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**Abstract**— The aims of this study were to know what cognitive process occurred in writing argumentative text based on different gender and the factors affect the student's cognitive process in writing argumentative text. The population of this study was grade XII of Free Methodist Senior High School Medan in 2019/2020 academic years and the sample was the big ten rank of XII science. The sample was taken by purposive technique. This study was conducted by using descriptive qualitative research design of which data were the transcript of think aloud protocol and retrospective interview. In analyzing the data, this research used model of Miles and Huberman, namely data collection, data reduction, data display, and data verification. The results of the data analysis showed that the cognitive processes of the different genders in writing argumentative text were different. The male cognitive process in writing argumentative text occurred in the two stages, they are (a) planning by organizing the ideas and (b) translating the text. While the female cognitive process occurred in three stages, they are (a) Planning by generating and organizing the ideas, (b) translating, and (c) reviewing by reading and editing the text. All of them were occurred because the first is their habitual on how they usually think and organize their writing. The second is because they have different ability in writing, and the last is also because they have a different language proficiency related to the second language.

**Keywords** - Cognitive Process, Different Gender, Writing, Argumentative Text

## I. INTRODUCTION

In the process of teaching and learning English, writing is one of productive skill besides speaking. This subject is the most difficult and complicated language skill to be learned by the students in every level of education. The students must have ability in organizing ideas, produce meaningful and structured sentences. If the students do not have those abilities they will face problems in producing a good writing. In writing process, there are three stages should be done by

students such as planning, translating, and reviewing and all of them active the cognitive process. Cognitive process is the act or process of knowing in the broadest sense; specifically an intellectual process by which knowledge is gained from perception or ideas. There are some writing types which force to active cognitive process in mind in order to pour the ideas logically; one of them is argumentative writing. According [1], argumentative text requires the writer to embrace a particular point of view and try to convince the readers in order to have the same perspective. The writers also have to arise the problems and attempt to map language onto his or her own thoughts and feelings as well as the expectations of the reader.

One of the socio-cultural factors shaped by learners in the process of learning a language including writing is gender. Gender is categorized in male and female. Each of them has different perceptions about something so they also have different way in writing idea or opinion. Male and female are believed to have different language in pouring the ideas based on their perception or experience. It can be seen from the researcher everyday observation to his students. The researcher found in the students' assignment that male writes only a few line and it jumps to the point and it was difficult for the male students to accomplish their writing task. Most of them would rather copy from other sources than write themselves or only have fewer words to write whenever they are asked to write an essay. In the process of writing, they tend to complete their writing without planning and reviewing. While the females always do the task well even it's not all finish it. They tend to remember again what they have stored in their mind and tend to make the outline first before writing. After finishing, some of them reread and check their writing word by word. The female students tends to be careful in checking their writing again because they want to make sure the result of their writing is good and perfect.[2]

Stated that boys in schools are viewed as “under-achievement” and the teachers have higher expectations for female. The female are said doing miles better than the male in exams. In addition, he investigated that female students used writing strategies better and their general strategies and writing habits were different from the ones used by male students. Female student writers received significantly higher writing strategy employment scores than that of male students.

Besides all those, the researcher has interviewed one male and one female students

Researcher : Zril, bagaimana kamu membuat tulisan argumentative ini?  
*Zril, how do you make this argumentative writing?*

Student : Apa yang kutau langsung kutulis sir, setelah siap langsung kukasi sama sir.  
*I write the writing that I know sir, I give it directly to you after finishing.*

(FMI/RI-M/Friday, May 05<sup>th</sup> 2019)

From the interviewing above, the researcher concluded that the male student wrote the argumentative writing itself without planning because the student developed his writing without retrieving the information of his long term memory. The student didn't make a draft or outline what he has to write so he faced a difficulty in developing the issue in writing. After finishing, that male student gave the writing directly without rereading or editing again so the researcher found there are some bad grammar in the writing so it made the reader confuse in understanding his writing. the cognitive process happened only in translating stage.

Researcher : Deang, bagaimana kamu membuat tulisan argumentative ini?  
*Deang, how do you make this argumentative writing?*

Student : Pertama-tama saya ingat-ingat dulu sir apa pentingnya bahasa inggris untuk dipelajari. Kemudian saya buat kerangkanya sir biar mudah. Setelah itu saya tulis sir. Susah sir menggabungkannya\ tadi. Setelah siap kucek lagi sir soalnya grammar saya berantakan jadi untuk memastikannya.  
*Firstly, I remember what the importance of learning English. Then, I draw the outline to make it easily. After that, I write sir. It's difficult to combine one sentence to others. After finishing, I check it again to make sure because my grammar is not really good. (FMI/RI-F/Friday, May 05<sup>th</sup> 2019)*

From the writing above can be seen that this female student has a good ability in writing argumentative text

because she can generate the ideas and developed her opinions in the writing, there are three cognitive processes happened in her mind. the first is generating ideas which is to retrieve information relevant to the writing task from long-term memory. The second is translating where she developed her ideas to be a good argumentative writing. And the last is reviewing where she makes sure by reread and editing again the text.

The preliminary data showed that there are differences the students' cognitive process in writing between male and female. Male student tends to complete the writing soon without organizing the ideas, drawing outline. He developed the ideas directly so he faced silent thinking in a long time for several times. In constructing sentences by sentences, the male student still made some wrong grammars. In the writing process, the male students just active his cognitive process in translating. Meanwhile, the female student wrote the draft of the issue firstly. She calls the information that she stored in her memory first. Then, developing the ideas, she wrote the ideas well and looked fluently but she realized that she is still weak in constructing the sentences by using a good grammar and appropriate word. Female student did planning, translating and reviewing by rereading her writing.

The previous research about cognitive process in writing has been conducted by [3] which entitled Cognitive Process of The Students in Writing Argumentative Text. As the result, the cognitive processes of the students from the two majors were different in planning, translating and reviewing. In Planning, the students of Natural Science did the planning before writing such as gathering ideas, organizing and jot down their ideas while the social science students did not do planning before writing. In gathering their ideas or organize the ideas, they seemed do not have an effort. In translating, the science students are less in translating in order to get the meaning while the social science students; they are more often in translating in order to get the meaning. In reviewing, the science students tend to read, edit their texts which has been written down in order to evaluate the text while the social science did not do the reviewing. The cognitive processes of the students were different because they have different ability in the proficiency of writing, vocabulary and discourse comprehension.

So, based on the preliminary data and the results of the previous researches shown above, the researcher is interested to do the research about “The cognitive process of different gender in writing argumentative text”. It's a different phenomenon because no one conducts the research like that. The researcher wants to know how the cognitive process is occurred in male and female argumentative writing.

This research has a contribution as theoretically to enrich the knowledge of psycholinguistic especially in cognitive process of different gender in writing argumentative text. Then, practically this research is expected useful as a reference for other researchers who are interested in conducting researchers or any further studies in psycholinguistics to apply

cognitive process of different gender in writing argumentative text

## II. REVIEW OF LITERATURE

### A. Cognitive Process in Writing

Cognition is mind or idea in a form of single, group, or even organization. Cognition is a process which consists of three processes called as psychological process; (1) Perception, (2) learning, and (3) reasoning. The general writing process is composed of three processes that allow transforming domain knowledge in a linguistic product (with their sub-processes and/or associated operations) and a process of control. These processes are *Planning*.

#### 1. According

[4], Planning is defined as the process of taking information from the task environment and the long term memory and to use it to set goals and to establish a writing plan to guide the production of a text that will meet those goals. It has three sub-processes, they are generating ideas, organizing, and setting goal. First, generating ideas are the process in retrieving relevant information from long-term memory. Second, organizing process allows the writer to identify categories, to search for subordinate ideas which develop a current topic, and to search for super ordinate ideas which include or subsume the current topic. The last, goal-setting process is to identify and store such criteria for later use in editing.

#### 2. Translating

According [4], Translating process is to take material from memory under the guidance of the writing plan and to transform it into the acceptable written English sentences. This is essentially the process of putting, developing, transforming ideas and plans into visible language. The process of translating requires the writer to juggle all the special demands of written English

#### 3. Reviewing

The function of the reviewing process is to improve the quality of the written text. It consists of two sub processes: reading and editing. According [4], reading is considered as the phase in which the writer read his/her writing and find some errors or incorrect sentences. Its purpose is to detect and correct violations in writing conventions and inaccuracies of meaning and to evaluate materials with respect to the writing goals. While editing is to detect and correct weaknesses in the text with respect to language conventions and accuracy of meaning, and by evaluating the extent to which the text accomplishes the writer's goal.

### B. Factors affecting the Cognitive Process in writing

According to [5], there are several factors affecting the cognitive process of L2 writing, they are: L1 writing ability, L2 language proficiency, Use of writing strategy, and Working memory Capacity.

#### 1. L1 writing ability

The process of writing is influenced by L1 writing ability. In other words, L2 writing ability has a positive relationship because literacy skills could be transferable across languages. [6] stated that L2 writing ability correlated significantly with L1 writing ability. He conducted a research to Japanese and Chinese ESL students in academic settings and they were asked to write an essay in both their first and second languages. The results indicated that writing skills could transfer across languages examined the first language and second language writing abilities of adult ESL learners to determine the relationships across languages (L1 and L2) in the acquisition of L2 writing skills

#### 2. L2 language proficiency

The process of writing is influenced by L2 Language proficiency. L2 literacy development is a complex phenomenon for already literate adult second language learners and involved variables such as L2 proficiency and L1 and L2 educational experience. L2 proficiency levels could be significantly predicted by L1 writing ability of a writer. L2 writing was indirectly affected by L1 writing ability, which in turn directly affected L2 oral expression ability, L2 vocabulary comprehension, and L2 discourse comprehension ability. Furthermore, there appeared to be a writing aptitude factor that constrained writing development both in L1 and in L2

#### 3. Writing strategies

The process of writing is influenced by the strategies used. Various specific writing strategies have been identified in the L2 writing process.

#### 4. Working Memory Capacity

The process of writing is influence by the working memory. [5] said that person who has a limited working memory capacity will constrained by the limitations and tend to depend on knowledge- telling strategies and engage in non-interactive processes. He concluded that novice writers who have limited working memory unable to deal with the complex demands imposed by the writing process. Meanwhile, skilled writers possess fluent encoding processes for the text-generation and transcription, as well as extensive knowledge about topic, genre, and routines for coordinating writing processes.

### C. Gender

It is very important to clarify the distinction between sex and gender. Sex marks an essentially biological distinction between women and men that may be based upon their anatomical, physiological, or chromosomal properties. While gender marks a socio-cultural distinction between men and women on the basis of the traits and behavior that are conventionally regarded as characteristic of and appropriate to the two groups of people. According to [7], gender is one's identification as male/man/masculine or



female/woman/feminine on the basis of somatic and behavioral criteria. It means that someone can be said as male or female from his or her typical body, appearance, and sexual characteristic. Besides, the way someone behaves and performs might determine whether someone is male or female.

The differences between sex and gender can be seen in their roles. The gender roles are may differ from society to society, can change with history as example in the past, female just stayed at home for finishing the housework but now woman can be a career, can be performed by both of sexes, they are socially, culturally determined. While sex roles are same in all societies: they are universal as example it is only women who give birth to children all over the world, never change with history, can be performed by only one the sexes and they are biologically determined.

From the explanation above can be concluded that a sex role is a function or role which a male or female assumes because of the basic physiological or anatomical differences between the sexes. It is a biologically determined role which can be performed by only one of the sexes for example women give birth to children while men make women pregnant. These roles are not exchangeable because they are biologically determined. While Gender roles for men and women vary greatly from one culture to another, and from one social group to another within the same culture. race, class, economic circumstances, age - all of these influence what is considered appropriate for men and women. As culture is dynamic, and socio-economic conditions change over time, so gender patterns change with them.

#### *D. Argumentative Writing*

[8] states that argumentative or persuasive essay is a kind of essay expressing opinion about controversial issue. As the writer, you must take a position and persuade the reader to agree with your opinion by using strong logical reasons to support your argument. In addition, it is a writing genre where the student establishes a position on given or chosen topic and then uses evidence to persuade the audience to see things from his/her point of view. In addition, it is defined as the sequence of interlinked claims and reasons that, between them; establish content and force of the position for which a particular speaker is arguing. Every argument is composed of obligatory elements such as claim and data and secondary elements, such as counterargument, and rebuttal

It is generally known that a good argumentative essay demonstrates not only why the writer's opinion is correct, but also why the opposing view is incorrect. To provide the writer's opinion is correct and convincing, there are some elements that are needed when writing argumentation essay.

- a. Position is the first and most important element in an argumentative essay or what side the author is on.
- b. Reason why the writer believes the way he or she does. By offering these reasons, the writer opinion is more convincing.

- c. Evidence is the facts, statistics, quotation, and claims from experts (quotations) in certain topic's field or issue are used to support reason.
- d. Counterarguments also used to in which the other side's arguments are not correct.

According to the above elaboration, it can be concluded that the core component of argumentation is clearly the development of a position, which can also be regarded as equivalent to the development of an argument. Another component is the presentation of the position through the logical arrangement of the propositions that build this position which is connected series of statement and the sequence of interlinked claims and reasons.

### III. RESEARCH METHODOLOGY

This research was conducted by using descriptive qualitative design since this research did not give any treatment to the text meanwhile the data is natural setting and the researcher is the key instrument. The population of this research was grade XII and the sample was the big ten rank of XII science students of Free Methodist in the 2019/2020 academic years which is located on Jl. Sekolah No 33 Medan Helvetia.

The source of data was taken by purposive technique where it involves the identifying and selecting individual or groups that are especially knowledgeable about experience with the phenomenon of interest. The techniques in collecting data of this research used observation and interview with recorder as the instrument to record the students' think aloud protocol and interviewing result after the students finished their think aloud protocol. This research used the interactive Model Technique of Miles and Huberman in analyzing the data which are consisted on data reduction/condensation, data display, and conclusion drawing / verification.

### IV. DISCUSSION

Cognitive process in writing is the act or process of knowing in the broadest sense, specifically an intellectual process by which knowledge is gained from perception or ideas. As stated by Hayes & Flower during the writing, there are some mental process taking place in the student's mind, they are planning, translating, and reviewing. Dealing with the theory, the researcher also found that mental process while they wrote a text but with a little different stage while the students writing an argumentative text. Cognitive process of the different gender occurred in the three stages, female cognitive process that occurred in writing are: (a) Planning by generating and organizing the ideas. Firstly, the students thought about the stored information in their mind and then make the outline and it was the guider for them to develop the ideas in writing. (b) Translating the text and tries hard in getting the ideas so each sentence is coherent and relate one to another (c) Reviewing by rereading and editing the text to make sure about their writing. The students check and recheck again about all of their writing result in order to minimize the

mistakes. While, the male cognitive processes in writing that occurred are in the two stages: (a) making the outline framework of the text, (b) writing the text directly and trying to develop the ideas into paragraph.

As stated that writing is not easy skill for students due to the process of writing itself which is influenced by cognitive activities. Hayes in Lu proposes stated that there are several factors which affect the process of writing they are cognitive activities of the writer and knowledge of the topic. Dealing with the theory of cognitive activities of the writers that mentioned the process of writing is influenced by cognitive activities. The difference between writers is related to the differences in text quality. It was also found that female students and male students are different in writing argumentative text. The differences are their stages or steps in organizing narrative text. Female students organized and generate the ideas well and did a checking before submitting their writing while male students did not organize and generate ideas well and did not check their writing.

#### V. CONCLUSION

After analyzing the data, the conclusions can be stated as the following:

1. The cognitive process taking place in female students and male students are different. The female cognitive processes in writing that occurred are in the three stages: (a) planning by generating and organizing the ideas, (b) translating the text, (c) reviewing by rereading and editing the text to make sure about their writing. While, the male cognitive processes in writing that occurred are in the two stages: (a) making the outline framework of the text, (b) writing the text directly and trying to develop the ideas into paragraph
2. The cognitive processes of the students of the two genders were different because they have a different

reason and factors that affect their mind to write the way it does. The first reason is because their habitual on how they usually think and organize their writing. The second is because they have different ability in writing, and the last is also because they have a different language proficiency related to the second language.

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