

**The Comparison of Students Learning Styles Based on the Use of
Left and Right Hemisphere in Learning English**

**A Descriptive Study at the Eighth Grade of SMPN Satu Atap Tompotanah,
Takalar**



A THESIS

*Submitted to the Faculty of Teacher Training and Education Makassar
Muhammadiyah University in Partial Fulfillment of the Requirement for the
Degree of Education Bachelor*

**NURFITRI
10535590714**

**ENGLISH EDUCATION DEPARTMENT
FACULTY OF TEACHER TRAINING AND EDUCATION
MUHAMMADIYAH UNIVERSITY OF MAKASSAR**

2019



**FAKULTAS KEGURUAN DAN ILMU PENDIDIKAN
UNIVERSITAS MUHAMMADIYAH MAKASSAR
PROGRAM STUDI PENDIDIKAN BAHASA INGGRIS**

LEMBAR PENGESAHAN

Skripsi atas nama **NURFITRI**, NIM **10535 5907 14** diterima dan disahkan oleh panitia ujian skripsi berdasarkan surat Keputusan Rektor Universitas Muhammadiyah Makassar Nomor: **035 Tahun 1440 H/2019 M**, tanggal 21 Jumadil Akhir 1440 H/26 Februari 2019 M, sebagai salah satu syarat guna memperoleh gelar **Sarjana Pendidikan** pada Jurusan Pendidikan Bahasa Inggris Fakultas Keguruan dan Ilmu Pendidikan Universitas Muhammadiyah Makassar pada hari Kamis tanggal 28 Februari 2019.

23 Jumadil Akhir 1440 H
Makassar, 28 Februari 2019 M

Panitia Ujian :

- | | | |
|------------------|---|---------|
| 1. Pengawas Umum | : Prof. Dr. H. Abdul Kaiman Rahim, S.E., M.M. | (.....) |
| 2. Ketua | : Erwin Akib, M.Pd., Ph.D. | (.....) |
| 3. Sekretaris | : Dr. Bahar Han, M.Pd. | (.....) |
| 4. Dosen Penguji | : 1. Dr. H. Bahrin Amin, M.Hum. | (.....) |
| | 2. Amar Maruf, S.Pd., M.Hum., Ph.D. | (.....) |
| | 3. Awalla Azis, S.Pd., M.Pd. | (.....) |
| | 4. Dr. M. Arief Paturusi, M.Pd. | (.....) |

Disahkan Oleh :
Dekan FKIP Universitas Muhammadiyah Makassar

Erwin Akib, M.Pd., Ph.D.
NBM : 860 934



بِسْمِ اللّٰهِ الرَّحْمٰنِ الرَّحِیْمِ

APPROVAL SHEET

Title : The Comparison of Students Learning Styles Based on
the of Left and Right Hemisphere in Learning English

Name : NURFITRI

Reg. Number : 10535 5907 14

Programmer : English Education Department Strata 1 (S1)

Faculty : Teacher Training and Education

Makassar, Februari 2019

Approved by:

Consultant I

Consultant II

Dr. M. Ariel Paturusi, M.Pd.

Hi. Diah, S.Pd., M.Pd.

Dean of FKIP
Makassar Muhammadiyah University

Head of English
Education Department

Erwin Akib, M.Pd., Ph.D.
NBM: 860 934

Umni Khaerati Syam, S.Pd., M.Pd.
NBM: 977 807



UNIVERSITAS MUHAMMADIYAH MAKASSAR
FAKULTAS KEGURUAN DAN ILMU PENDIDIK
PRODI PENDIDIKAN BAHASA INGGRIS

Jalan Sultan Alauddin No. 259 Makassar
Telp : 0411-860837/860132 (Fax)
Email : fkip@unismuh.ac.id
Web : www.fkip.unismuh.ac.id

بِسْمِ اللّٰهِ الرَّحْمٰنِ الرَّحِیْمِ

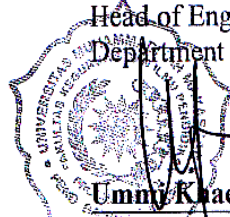
Nama : NURFITRI
Stambuk : 10535 5907 14
Jurusan : Pendidikan Bahasa Inggris
Dengan Judul : **The Comparison of Students' Learning Styles Based on the Use of Left and Right Hemisphere in Learning English**
Consultant I : **Dr. H. M. Arief Paturusi, M.Pd**

Day / Date	Chapter	Note	Sign
2-1-2019	IV	learning style question	
18-1-2019	IV	left and right hemisphere	
20-1-2019		discussion	
		ace	

Makassar, January 2019

Approved by:

Head of English Education
Department



Ummi Khaerati Syam, S.Pd., M.Pd

NBM: 971 807



بِسْمِ اللّٰهِ الرَّحْمٰنِ الرَّحِیْمِ

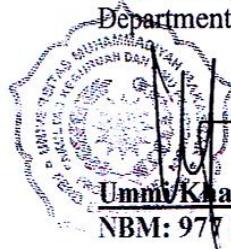
COUNSELLING SHEET

Nama : NURFITRI
 Stambuk : 10535 5907 14
 Jurusan : Pendidikan Bahasa Inggris
 Dengan Judul : **The Comparison of Students' Learning Styles Based on the Use of Left and Right Hemisphere in Learning English**
 Consultant II : **Hj. Ilmiah, S.Pd., M.Pd.**

Day / Date	Chapter	Note	Sign
7/12/2018		- Revise chapter IV	f
31/12/2018		- Abstract - Research Instrument - Revise Discussion	f
4/1/2019		- Revise collecting data - Scoring - Sample	f
7/1/2019		- Revise the Abstract - Abstract - Revise discussion	f

Makassar, December 2018

Approved by:
 Head of English Education
 Department



Ummi Khaerati Syam, S.Pd., M.Pd
 NBM: 977 807



بِسْمِ اللّٰهِ الرَّحْمٰنِ الرَّحِیْمِ

COUNSELLING SHEET

Nama : NURFITRI
Stambuk : 10535 5907 14
Jurusan : Pendidikan Bahasa Inggris
Dengan Judul : **The Comparison of Students' Learning Styles Based on the Use of Left and Right Hemisphere in Learning English**
Consultant II : **Hj. Ilmiah, S.Pd., M.Pd.**

Day / Date	Chapter	Note	Sign
12/1/2019		Acc ok Final Exam	

Makassar, December 2018

Approved by:
Head of English Education
Department



Ummi Khaerati Svam, S.Pd., M.Pd
NBM: 977807



UNIVERSITAS MUHAMMADIYAH MAKASSAR
FAKULTAS KEGURUAN DAN ILMU PENDIDIKAN

SURAT PERNYATAAN

Saya yang bertandatangan di bawah ini:

Nama : **NURFITRI**

NIM : 105 35 5907 14

Jurusan : Pendidikan Bahasa Inggris

Judul Skripsi : The Comparison of Students' Learning Styles Based on
the Use of Left and Right Hemisphere in Learning English

Dengan ini saya menyatakan bahwa skripsi yang saya ajukan di depan tim
penguji adalah hasil karya saya sendiri dan bukan hasil karya dari orang lain atau
dibuatkan oleh siapapun.

Demikian pernyataan ini dan saya bersedia menerima sanksi apabila
pernyataan ini tidak benar.

Makassar, Januari 2019

Yang Membuat Pernyataan

NURFITRI



UNIVERSITAS MUHAMMADIYAH MAKASSAR
FAKULTAS KEGURUAN DAN ILMU PENDIDIKAN

SURAT PERJANJIAN

Saya yang bertandatangan di bawah ini:

Nama : **NURFITRI**

Nim : 105 35 5907 14

Jurusan : Pendidikan Bahasa Inggris

Fakultas : Keguruan dan Ilmu Pendidikan

Dengan ini menyatakan perjanjian sebagai berikut:

1. Mulai dari penyusunan proposal sampai selesai penyusunan skripsi ini, saya akan menyusun sendiri skripsi saya (tidak dibuatkan oleh siapapun).
2. Dalam penyusunan skripsi, saya akan selalu melakukan konsultasi dengan pembimbing yang telah ditetapkan oleh pimpinan fakultas.
3. Saya tidak akan melakukan penjiplakan (plagiat) dalam penyusunan skripsi.
4. Apabila saya melanggar perjanjian seperti pada butir 1, 2, 3, saya bersedia menerima sanksi sesuai dengan aturan yang berlaku.

Demikian perjanjian ini saya buat dengan penuh kesadaran.

Makassar, Januari 2019

Yang Membuat Perjanjian

NURFITRI

MOTTO AND DEDICATION

MOTTO

EAT MORE, MOVE MORE

(Get then share the knowledge, the experiences, and the whole positive things)



ABSTRACT

Nurfitri, 2019. *The Comparison of The Students Learning Styles based on the Use of Left and Right Hemisphere in Learning English (Descriptive Research at the Second Year of SMP Negeri Satu Atap Tompotanah).* Guided by M. Arief Paturusi and Ilmiah.

The study was aimed to compare the students learning styles based on left and right hemisphere. The subject of this study conducted at the Eighth Grade of SMPN Satu Atap Tompotanah in academic year 2018/2019. The class consisted of 19 students. The study was conducted by descriptive study as the methodology. The technique of collecting data was applied by questionnaire (brain dominant and learning styles). The participants' brain hemisphere was determined by the "Brain Dominance" while to identify the students learning styles, "Learning Styles Questionnaire" was used. Learning questionnaire adapted from University of Texas Learning Center (2006).

The result of this study showed that the students who had left hemisphere were 9 students, right hemisphere 7 students, while both hemisphere 3 students of overall 19 students. It means left hemisphere was more dominant at the Eighth Grade of SMPN Satu Atap Tompotanah. Afterwards the auditory learning style was more dominant based on left hemisphere than visual and kinaesthetic, meanwhile the visual learning styles was more dominant based on right hemisphere than auditory and kinaesthetic. However, no other significant differences were found between any of the pairs in the study. It is inevitable that students with different learning styles on brain dominance are present in classroom. In this respect, identifying students' learning styles on brain dominance is crucial since it is believe to be influential on the preference of strategy use to effective in learning.

Keywords: *Left and Right Hemisphere, Students Learning Styles, Descriptive Study*

ACKNOWLEDGEMENT

Alhamdulillah rabbil ‘alamin, the researcher expresses his highest gratitude to Allah subhanahu wa ta’ala for blessing, love, opportunity, health, and mercy to complete this undergraduate thesis, this undergraduate thesis. This undergraduate thesis entitled “**The Comparison of Students’ Learning Style Based on The Use of Left and Right Hemisphere in Learning English**” is submitted as the final requirement in accomplishing undergraduate degree at English Education Faculty of Teacher Training and Education University of Muhammadiyah Makassar.

Further, in arranging this thesis, a lot of people have provided motivation, advice, and support for the researcher intended to express his gratitude and appreciation to all of them. First, the researcher’s deepest appreciation goes to her beloved parents, her mother **Masdiana** for endless love, pray, and support, then her father **Alm. M. Yasim** for always reminds me in pray to keep going and never giving up. The researcher presents her sincere appreciation goes to:

1. **Prof. H. Abd. Rahman Rahim, S.E., MM** as the Rector of University of Muhammadiyah Makassar for his advices during her study at the University.
2. **Erwin Akib, M.Pd., Ph.D.** as the Dean of FKIP UNISMUH Makassar.
3. **Ummi Khaerati Syam, S.Pd., M.Pd** as the head of English Education Department of FKIP UNISMUH Makassar.
4. This thesis would not have been possible without the help, support and patience of her first consultant **Dr. M. Arief Paturusi, M.Pd**, then to her second consultant **Hj. Ilmiah, S.Pd., M.Pd.** who has helped her patiently

finishing this undergraduate thesis by giving suggestion, guidance, and correction until the completion of this thesis.

5. The researcher gratitude also goes to her beloved brothers and sister **Rismayanti, A.Md. Keb.** who never stop asking about the completion of study. Their called and chat keep her annoyed but magically give me reason to be focus to finish her study as soon as possible for that the researcher is really grateful to have them in her life.
6. The researcher is very grateful to have some close friends who always support her. The first appreciation goes to **Siti Hardianti, Musdalifah,** and **Tenri Sabbe** they are always a good listener for every problem the researcher faced.
7. The researcher would like to say thanks to her friends of **Sakojang.** Thanks for being such a good neighbor who always help her, and also to the entire friends of **Diamond Class** who cannot be mentioned here one by one.
8. Finally, the researcher would like to thank everybody who was important to the successful realization of this graduate thesis. This undergraduate thesis is far from perfect, but it is expected that it will be useful not only for the researcher, but also for the readers for this reason, constructive thoughtful, suggestion and critics are welcomed.

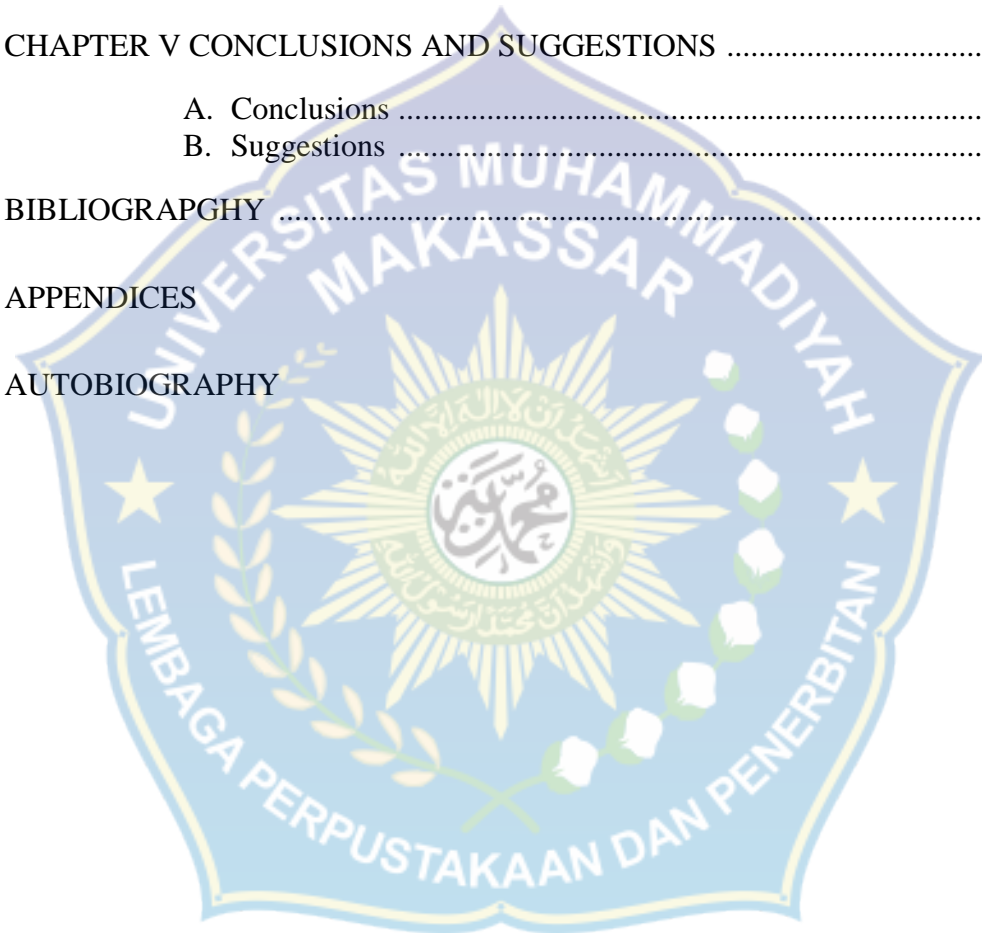
The Researcher

NURFITRI

TABLE OF CONTENTS

COVER	i
APPROVAL SHEET	ii
COUNSELING SHEET	iii
SURAT PERNYATAAN	vi
SURAT PERJANJIAN	vii
MOTTO AND DEDICATION	viii
ABSTRACT	ix
ACKNOWLEDGEMEN	x
TABLE OF CONTENTS	xii
LIST OF TABLE	xiv
LIST OF FIGURE	xv
CHAPTER I INTRODUCTION	1
A. Background	1
B. Problem	5
C. Objective	5
D. Significance	6
E. Scope	6
CHAPTER II REVIEW OF LITERATURE	7
A. Previous Related Literature	7
B. Some Pertinent Ideas	8
1. Definition of Learning Style	8
2. The Types of Learning Style	10
3. The Characteristics of Learning Style	13
4. Hemisphere	17
5. The Relationship between Brain and Language	26
C. Conceptual Framework	27
D. Hypothesis	28
CHAPTER III RESEARCH METHOD	29

A. Research Design	29
B. Research Variable	29
C. Research Population and Sample	39
D. Research Instrument	30
E. Research Procedure	31
F. Research Data Collection	31
G. Research Data Analysis	31
 CHAPTER IV FINDINGS AND DISCUSSION	 34
A. The findings	34
B. Discussions	43
 CHAPTER V CONCLUSIONS AND SUGGESTIONS	 50
A. Conclusions	50
B. Suggestions	51
 BIBLIOGRAPGHY	 52
 APPENDICES	
 AUTOBIOGRAPHY	



LIST OF TABLES

Table 3.1 Score of Learning Styles Questionnaire.....	30
Table 3.2 Classified of Learning Styles Questionnaire	30
Table 4.1 Score the Students' Left and Right Hemisphere Test	35
Table 4.2 Total Score of Students' Learning Styles Questionnaire	37
Table 4.3 Percentage of Learning Styles Based on Brain Dominant	38
Table 4.4 Students Learning Styles Based on Left Hemisphere	40
Table 4.5 Students Learning Styles on Right Hemisphere	41
Table 4.6 Students Learning Styles on Left and Right Hemisphere	42



LIST OF FIGURES

Figure 2.1 Learning Styles	9
Figure 2.2 Brain Hemisphere	17
Figure 2.3 Conceptual Framework	27
Figure 4.1 Students Learning Styles Based on Both Hemisphere	39
Figure 4.2 Percentage of Students Learning Style on Left Hemisphere	41
Figure 4.3 Percentage of Students Learning Styles on Right Hemisphere	42



CHAPTER I

INTRODUCTION

A. Background

Learning is an activity of process and it is fundamental element in every level of educational process, learning activity is an activity that most staple and important in the overall process of education.

Learning styles, by definition, are learning strategies peculiar to an individual which help that individual to learn well. However, Snowwoman and Biechler in Chieke, J. C., Ewelum, J. N., & Madu, C. O. (2017:30) believed that learning styles are preferences for dealing with intellectual tasks in a particular way. In addition, Dunn and Dunn in Chieke, J. C., Ewelum, J. N., & Madu, C. O. (2017:30) defined learning styles as the way in which each person begins to concentrate, process, and remember new and difficult academic content.

Based on the definition above, it can be conclude that learning style is the hallmark of which is owned by everyone in giving response to learning that received.

The student's learning style is the key to developing performance in learning. Any students certainly have a different learning style. Knowing the

different students' learning style can assist teachers in delivering learning materials to all students so the results of the study will be more effective.

Learning styles as a way someone in receiving the results of the study with an optimal reception levels compared with other ways. Everyone has their each learning style. Introduction to learning style is very important, for teachers can apply the right techniques and strategies both in learning and self development. Only by applying the appropriate rate of success are higher. A student must also understand the different types of learning styles. Thus, they have the ability to know their needs. Introduction to learning styles will provide the right services to what and how shall be provided and done so optimal learning can take place.

One way to unlock the potential of the extraordinary has been locked in the brain is meeting with how to enter the information into the brain through learning style of teaching.

In other part, Madden in cited wurips8 (2015) split five learning style through; (1) The sense of vision or visual; observing, visualization, imagination; (2) The sense of hearing or auditory; listen, talk, discuss; (3) The sense sensing or kinesthetic; experience, working, feeling, and intuition; (4) A sense of smell (olfaktori); and (5) Sense taster (gustatori). Another opinion, Ken & Rita Dunn from St. John's University in Jamaica, New york and experts such as Neuro-Linguistic Programming Richard Bandler, John Grinder, and Michael Grinder in cited wurips8 (2015) identify three learning style, i.e.; (1) Visual is learning through composed something; (2) Auditory, that is learned through hearing things, and (3) Kinesthetic is learning through physical activity and the direct

involvement of “quoted from the ride and Nicholl in cited wurips8 (2015) in his books *“Accelerated learning for the 21st centur”*. Most people show their likes or tendency at a particular learning style than the other two styles. Based on the results of study in these tendencies; 29% visual, 34% auditory, and 37% kinesthetic. Additional information stating that when reaching the adult age tend to visual.

In addition, study on learning styles model affected by the basic functions of the cerebral hemispheres of the brain, i.e., parts of the left and right hemisphere of the brain. Proven type of person who processes information using the left brain prefers a quite learning condition, bright lighting, and formally designed, they do not require food snacks, they are able to study in the best conditions when alone. On the contrary, the person who obtained the information by using the right brain prefers a transfer of noise or music, the lighting is dim, informal draft, food snacks, mobility and interaction with others in the workplace while studying or concentrated. Every individual prefers to learn in different ways and the ability to absorb information is significantly increased when people can think, work, and concentrate in favorable condition.

Humans are capable of learning any material successfully in learning methods are used according to individual learning, when human diversity be considered and observed in the learning process, as the result always positive; students get excited, grabbed something without stress, increase motivation, and always be in control of the learning process. So the key to success in learning style of each person, accepting the strengths and customize personal preferences as much as possible in every situation of learning. When students can't learn with

how teachers teach then teachers should learn to teach their students can learn in a way because all the learning styles are good.

As we know that the conventional learning methods that are generally used by educators in learning languages tend to emphasize on working patterns, such the left brain exercises that operates on a stimulus hearing (left brain) exercises, repetition, less involved process of solving a problem. Meanwhile the advancement of technology, kids are focused on the events that are broadcast by television now that more the activities are the right cerebral hemispheres. Thus, the problem of learning to become ineffective.

Students typically are interested the use of one side of their brain over the other. Some, however are more whole brained and equally adept at using both hemispheres. Logical thinking, analysis, and memorization is emphasizing in brained modes of learning rather than right such as feeling, intuition, and creativity in brained modes.

One's brain hemisphere contributes to learning and teaching language. Some scholars maintained that left brained students are different from right brained one is terms of how they function in different educational context. Moreover, the left brained learners have an edge the right brained ones in terms of logical, analytical, mathematical and also linear processing of information. In the other hand right brained students are claimed to benefit from visual, auditory, holistic, and non-linear information processing.

Brain holds is very important role in speaking and in relation to the language of the human brain is divided into two parts, it's namely the left hemispheres which are linguistic and right cerebral hemispheres connected with

non-linguistic. The right brain is not functioning as a linguistic right cerebral hemispheres, but it relates to how the left brain gives birth to language.

Based on the explanation above, the researcher was interested in taking the title of study “**The Comparison of Students Learning Styles based on The Use of Their Left and Right Hemisphere in Learning English at the Eighth Grade of SMPN Satu Atap Tompotanah**”.

B. Problem of the Study

Based on the backgrounds above, the researcher underlines the problem as follow:

1. What was the students’ left and right hemisphere dominance in the Eighth Grade at SMPN Satu Atap Tompotanah?
2. How was the comparison of students’ learning styles based on the use of their left and right hemisphere in the Eighth Grade at SMPN Satu Atap Tompotanah?

C. Objective of the Study

The objectives of the study were to find out:

1. The students’ left and right hemisphere dominance in the Eighth Grade at SMPN Satu Atap Tompotanah.
2. The comparison of students’ learning styles based on the use of their left and right hemisphere in the Eighth Grade at SMPN Satu Atap Tompotanah.

D. Significance of the Study

This study was expected could give the benefit theoretically and practically as follows:

1. The theoretical benefits
 - a. Developed insight in to the science and support the theory existing theories related to the field of education, especially problems of teaching and learning in the school and human resources.
 - b. Increased the repertoire of library material either at the program level faculty and university.
 - c. As a basis to conduct further studies variable.
2. The practically benefits
 - a. Teacher as a motivator to encourage students to learn with an effective way possible and divide time with both in order to be able to learn as well as possible so that students can reach the achievements better.
 - b. Useful to train and develop the ability and skills owned research in doing study.

E. Scope of the Study

The present study focused on the comparison of students' learning styles on brain dominance and which was brain dominant between left and right hemisphere.

CHAPTER II

REVIEW OF RELATED LITERATURE

A. Previous Related Literature

Some studies related to learning style and thinking are:

Azhari Muh. (2017) in his thesis about *An Analysis on The Learners' Learning Styles of The 1st Semester Students' of English Department of Makassar Muhammadiyah University* found that the collection data was analyzed through questionnaire. The result will be useful for lecturers and instructors to know how are the reaction of each students' toward their learning styles.

According to Duman Bilal (2010) in his journal about *The Effects of Brain-Based Learning on the Academic Achievement of Students with Different Learning Styles* found that the BBL approach used in the experimental group was more effective in increasing student achievement than the traditional approach used in the control group. However, no significant difference was observed among the achievement levels of the experimental group students with different learning styles.

According to Savadkouhi Zahra Bavand, et all (2013) in their journal about *The Effect of Hemispheric Dominance on Learning Vocabulary Strategies among Iranian EFL Learners* found that investigating hemispheric dominance and learning styles from the aspects of curriculum, teaching process and teachers will contribute significantly to the Iranian Education.

Relating to the previous study findings above, in this study, the researcher analyzed the comparison of students' learning style based on the use of their brain dominance. The similarity between three previous studies above and the present study was to found out the different each learning styles that students use, then learning styles were determined through analysis data. In other hand, there was a way to investigate, it was do a test. The differences between the previous study and the present study were the previous study used an approach and applied a strategy.

B. Some Pertinent Ideas

1. Definition of Learning Styles

A learning style is not an ability but rather a preferred way of using one's abilities in itself (Sternberg in Hatami, 2012). Individual have different learning styles, that is, they differ in their natural, habitual, and preferred way(s) of absorbing, processing, and retaining new information and skills (Reid in Hatami, 2012). Learning styles are typically bipolar entities (for example reflective versus impulsive, random versus sequential), representing two extremes of a wide continuum; however, where a learner falls on the continuum is value neutral because each extreme has its own potential advantages and disadvantages (Dornyei in Hatami, 2012). Moreover, although individuals may have some strong

styles are not fixed modes of behavior and based on different situations and tasks, styles can be extended and modified (Reid; Oxford in Hatami, 2012). However, the extent to which individuals can extend or shift their styles to suit a particular situation varies (Ehrman in Hatami, 2012).

Each individual has a distinctiveness since birth and enriched through life experience. That surely everyone learn through sensorial tools, good vision, hearing, and kinesthetic. Everyone has the power of learning or learning style. The more we get to know both our learning style it will be easier and more confidence in mastering a skill and concepts in life.

One of the factors that influence how students learn is the perception starts five senses: hear, see, taste, smell, and feel. In the world of education, the term refers specifically to learn the style of vision, hearing, and kinesthetic. The visual learning style and vision concerning the mental shadows. Auditory learning style refers to the hearing and talks. Kinesthetic learning style refer to movement of large and small. In addition by understanding learning styles of students means it will make students happier because the teacher's response to the needs appropriate, thus the information provide to them that will more easily absorbed.

Figure 2.1 Learning Styles



Source: dmitconsultant.com

2. The Types of Learning Styles

According to Fatt in Benders (2012:6), “People use their five senses to gather information and then channel it through three separate routes, called representational system, to make sense in it”. This representational systems include visual, auditory, and kinesthetic types of learners (Fatt in Benders, 2012:6). Each individual shows a preference towards one of these systems, and specific communication accustomed to the learning style can improve communication with others (Fatt in Benders, 2012:6).

a. Visual

Fatt in Benders (2012:6) says that people with a visual learning preference “see the world by constructing or remembering mental images”. Visual learners would prefer reading, observing, and the display of data and visual aids. Visual students would rather learn by watching movies, film strips, pictures, and graphs which help integrate the subject (Fatt in Benders, 2012:6).

Students who shows a preference for a visual learning styles and are given instruction with visual aids will perform better when given the appropriate materials (Cegielski et al., n.d. in Benders, 2012:6)

The visual learning style (visual learner) focusing on the sharpness of vision. It means that concrete evidence must be presented in advance so that students understand. The characteristics of students who have a visual learning style is the need to see and capture information visually before students understood it.

Students who have a visual learning style captures the lessons learned through pictorial material. In addition, they are a strong sensitivity towards

color besides having enough understanding to the problem. It's just that they usually have constraints to dialogue directly because it is too reactive to the sound, it makes difficult to follow the suggestion of orally and often incorrectly interpret a word or speech.

This learning style can be applied in learning, using several approaches: using various forms of graphics to convey information/subject matter in the form of film, slides, illustrated, scratch or image series cards for describes an information sequentially.

b. Auditory

Fatt in Berners (2012: 7) Persons with an auditory learning preference prefer sound and make better decision on what they have heard or read. It states that auditory learners would prefer lectures, seminars, discussions, and tapes. By letting auditory learners to listen to tape recordings of material, they are more likely to ask questions about what they have learned and may not have understood, when taking a test, an auditory learner would do their best by being given an oral examination (Fatt in Berners, 2012:7).

This learning style relies on hearing to be able to understand at once remember. The characteristics of this learning model is really putting the hearing as the main tool to absorb the information or knowledge. That is able to remember and understand the specific information, the concerned shall be heard first. Those who have this learning style is generally hard to absorb firsthand information in the form of writing, in addition to having difficulty writing or reading.

In this learning to help students' like this, teachers' are able to use the a tape media to record all of the subject matter being taught in school. In addition students' involvement in discussion is also very suitable for students' like this. Another aid that can be given is to try to read out the information, and then summarize in the form of oral and recorded for further heard and understood. The final step is to do the review verbally with friends or teachers.

c. Kinesthetic

Fatt in Barners (2012:7). The individuals with a kinesthetic learning preference communicate with the environment by feelings or feeling Students who are considered to be kinesthetic learners prefer to learn by doing. Moreover kinesthetic learners "prefer a trial and error method of learning". This type of learner would rather not learn by explanations, visual presentations, and discussions. A kinesthetic learner would rather be learning with hands-on experience which helps them create and develop what they have learned (Fatt in Berners, 2012:7).

This learning style requires that the individual concerned is touching something to provide certain information so that they could remember. Surely there are characteristics of this kind of learning model that is not everyone can do it. The first character is putting the hand as a recipient of a headline to continue to remember it. Just by holding it, someone who has this learning style can absorb the information without having to read the explanation.

The next character is exemplified as a person who can't stand sitting sweet linger to listen and to get of a lesson. No wonder if the individuals who have

this learning style feel could learn better when the process is accompanied by physical activity.

Those advantages, they have the ability to coordinate a team besides the ability control gestures (athletic ability). The students who often tend to have these characters are easier to absorb and understand the information in a manner plagiarized a picture or word then learn to pronounce it or understand the facts then to apply it in education to students who have the characteristics of the above can be performed using various model viewer, such as the work in lab or learning that allow them to play. Simple ways that can also be reached is regularly allocate time for a moment to rest in the middle of their learning time.

3. The Characteristics of Learning Styles

a. Visual

Students were visual has several characteristics as follows (DePorter in Siwi, 2017:444)

- 1) Regularly, pay attention to everything to keep up appearances;
- 2) In view of the image, rather read than read out; and
- 3) Requires as through overview and objectives.

Thus some of the characteristics of learning appropriate for students who are visual as follow:

- a) Teachers stood quietly when presenting segment information and move slowly among the segments;
- b) Give encouragement to students to describe the information by creating a diagram, symbol, and color images in visual student records;

- c) The tables and graphs will deepen students' understanding of visual especially in mathematics, engineering, or science;
- d) The making map mind/concept maps will be helpful in giving students' visual "overall picture" of a concept;
- e) Use the language of visual symbols in the presentation subject representing key concepts;
- f) Familiarize the student to take back the material/information by using different colors/images are interesting;
- g) Note the lighting or lighting a room while teaching/learning take place.
- h) Use of instructional media such as books, magazines, posters, computer/LCD, collage, flow charts, highlighting, keyword displayed around the classroom, writing with attractive colors.

b. Auditory

Students were auditory has several characteristics as follows (DePorter in Siwi, 2017:444)

- 1) Attention is fragmented;
- 2) Speak with a rhythmic pattern;
- 3) Learn by listening, moving their lips/voice while reading;
- 4) Internal and external dialogue.

In accordance with the characteristics of auditory students, here are some of the characteristics of learning appropriate:

- a) Provide information repeatedly can take advantage of these question;
- b) Use the technique of repetition, ask students to name the concept and guidelines;

- c) Teachers using vocal variety in the presentation;
- d) Sing a key concept or ask students to make a song related to the concept;
- e) Give encouragement to students for making/thinking “mnemonics” to make it easier to memorize/recall key concept;
- f) Use the technique of question and answer;
- g) Using question and answer, role play, group work, techniques mnemonics;
- h) Engage in learning music.

c. Kinesthetic

Movement, coordination, rhythm, emotional response, and physical comfort are very prominent in students who are kinesthetic. In accordance with those disclosed in DePorter et al in Siwi (2017:444) that some of the characteristics of someone who kinesthetic among others:

- 1) Often touch people, standing close together and moving when interacting with others;
- 2) Learn by doing;
- 3) Appoint writing while reading;
- 4) Given the go and see

Therefore, here are some of the characteristics of student learning according to kinesthetic among others:

- a) Kinesthetic students preferred form of project tasks applied;
- b) Use of instructional media/tools when teaching to generate curiosity and emphasize key concepts;

- c) Kinesthetic allow students to walk in the classroom;
- d) Demonstrate concepts while providing the opportunity for students to learn step by step;
- e) Create a simulation of the concept that the student experience;
- f) Create mind maps involving physical activity can also be useful for students kinesthetic.

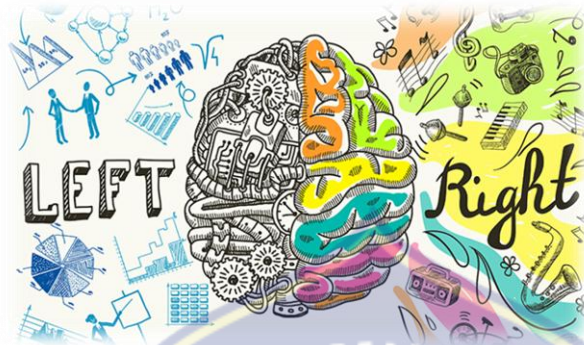
The term learning style speaks to the understanding that each student learns differently. Technically, an individual's learning style refers to the preferential way in which the student retains information, absorbs, comprehends, and processes. For example, when students learn about how to make a cake, some students understand the process by following verbal instructions, while others have to physically manipulate the cake themselves. This notion of individualized learning style has gained widespread recognition in education theory and classroom management strategy. Individual learning style depends on emotional, cognitive, and environmental factors, as well as one's prior experience. In other hand: everyone is different. It is important for teachers to understand the differences in their student's learning style, then they are able to implement best practice strategies into their activities, curriculum, and assessments.

4. Hemisphere

According to medical dictionary, Hemisphere refers to a shape that is half "hemi" of a sphere. In science, most commonly the term is used to refer to half of the brain – the right and left hemispheres. Hemispheres can also refer to one half of the earth (eastern and western hemispheres). Hemispheric

specialization refers to the different functions performed by the two hemispheres of the brain.

Figure 2.2 Brain Hemisphere



Source: thelearningcraft.com

Our brain is divided into 2 halves, or hemisphere, that are connected to each other by the corpus collosum. These two hemispheres control the motion in and receive sensory inputs from the opposite side of our body. In other words, the left hemisphere controls the right side of our body and also receive sensory inputs from the right side of our body. Cited by Psychology Notes HQ

a. Left and Right Hemisphere

1) Left Hemisphere

The left hemisphere of our brain handles tasks such as reading, writing, speaking, arithmetic reasoning and understanding. Study shows that when we speak or do arithmetic calculations, activity increases in our left hemisphere. Another characteristics of our left hemisphere is that it tends to process information sequentially, one at a time.

2) Right Hemisphere

The right hemisphere of our brain excels in visual perception, understanding spatial relationship, organizing patterns, music, emotional expressions, etc. It is also good at making inferences.

b. The Function of Left and Right Hemisphere

DePorter in Saliem (2012) revealed that the left brain thinking process are logical, sequential, linear, and rational. The left brain is based on the reality of being able to do the interpretation abstract and symbolic. The way of thinking according to regular tasks, verbal expression, writing, reading, the association auditorial, put the details and facts, phonetics, and symbolism. The cerebral hemispheres for the right way thinks are random, irregular, intuitive, and holistic. How much in accordance with ways to find out who are nonverbal, such as feelings and emotions, awareness concerning the feeling (feel the presence of an object or person, spatial awareness, the introduction of forms and patterns, music, art, the color sensitivity, creativity, and visualization.

Furthermore, Restak in Saliem (2012) also suggested that the left brain functions explain something verbally or in writing. The left brain hemisphere tends to break everything down into parts and more recognize the difference than similarity traits. In addition, according to the left hemispheres Restak, process the world in a way that linear. In contrast, parts of the right brain less rely on words and language, parts of the right brain more able to see the picture as a whole and having regard to the merging into a general overview. The right brain hemisphere is involves many operations at once. The same thing about

left brain function also expressed by Maksan in Saliem (2012) that linguistic tasks coordinated by left brain.

Left brain deals with academic then right brain function in terms of the difference, the number, order, writing, language, logic, and the count. It is the center of the brain that is dominant for spoken and written language. Play a role in the process of a logical, analytical thinking, linear and rational act. Memory short term nature of the left brain (short term memory). If there is damage to the brain's left side then it will happen in terms of function disorders of speech, language, and mathematics. Right brain functioning in terms of equations, fantasy, creativity, shape or space, color, music, and emotions. Right-brain memory nature long (long term memory). If there is a right-brain damage for example stroke or brain tumor, brain function is impaired is a visual and emotional capabilities. Many experts who say the left brain as controller of IQ (Intelligence Quotient), while the right brain play an important role for the development of EQ (Emotional Quotient), (freed in Saliem, 2012).

Explanation above it can be concluded in any activity conducted by the human brain always involves two brain function, i.e., parts of the left brain and the right brain hemisphere. Left brain to do the thinking, perception, while the right brain to give us an idea visually. If someone only enable one of the parts of the brain in some activity, there is an imbalance of brain function in humans, then the person will be easier facing difficulties especially mental health, such as posed DePorter in Saliem (2012) "if you belong to the category of left brain and you don't do certain efforts include some right-brain activity in our life, the resulting imbalance can result in stress and physical health as well".

Based on the explanation above, it can be concluded that the importance of balancing both the brain's functions in performing activities that do require a working brain, thus achieved an optimal goal.

c. Learning Styles of Both Hemisphere

The Differences Between Left and Right Brained Learners

Learning takes place in the brain. The brain is made of many parts and specific areas for all different kinds of learning. There are several parts of the brain that focus on sensory input. Other parts of the brain focus on logical reason, linguistic thinking, organizing information according to patterns, relationships, movement or even spatial awareness,

Both sides of the brain can reason, but may use different strategies and one side may be dominant. This means when the brain is stressed, or asked to perform a function it may go on auto-pilot and reach to the dominant side to solve a problem, learn a skill, or perform a task. It's not so much that we are biologically right brain or left brain dominant, but that we are more comfortable with the learning strategies characteristic of one over the other. However, the left side is considered the brain of the brain, and controls final decisions concerning information gathered throughout the brain. It inhibits the right side's cognitive and decision making processes, but because the hemisphere of our preferences probably has more neural connections, learning may occur faster in the dominant side.

According to Morris Michelle, (2006) consider the common characteristics of both sides:

1) Left Brain Learners

a) Symbolic

The left brain has no trouble processing symbols. Most academics deal with symbols such as letters, words, and mathematical formulas. The left-brain person tends to be comfortable with linguistic and mathematical work. Left-brain students' will probably just, and are able to memorize vocabulary words or math formulas.

b) Logical

When you process on the left side, you use information piece by piece to solve a math problem or work out a science experiment. When you read and listen, you look for the pieces so that you can draw logical conclusion. Your decisions are made on logic – which provides to you the proof.

c) Verbal

Left-brain children and adults have little trouble expressing themselves in words. Listen to a left brain person giving directions! The left-brain person will say something like: “ from here, go north eight blocks and turn east on main street. Go two miles and turn west onto Front Street. “ they can be very precise in their choice of words. You may be a great speaker, because your language abilities are so refined. You are comfortable speaking, and use very little hand gestures as you talk.

d) Sequential

The left brain processes in sequence – in order. The left-brain person is a list maker. If you are left-brain, you would enjoy making a master

schedule and doing daily planning. You complete tasks in order and it pleases you to check them off when they are accomplished. Likewise, learning things in sequence is relatively easy for you. For example, spelling involves sequencing; if you are left-brain, you are probably a good speller.

e) Objective

Expressing or dealing with facts or conditions as you see or understand them without letting emotions, personal feelings or other's interpretations distort the fact in your mind. Left brain dominant people are abstract perceivers who take in information through analysis, observation and thinking. They are also reflective processors who make sense of an experience by reflecting on and thinking about it.

f) Linear

The left side of the brain processes information in a linear manner. It processes from part to whole. It takes pieces of information, lines them up, and arranges them in a logical order, then it draws conclusion.

g) Reality Based

The left side of the brain deals with things the way they are-with reality. You think in the present and the past. Very firmly seated in reality in all things. You want to know the rules? You'll be the first to create them. If there are no rules? You'll be the first to create them! Left brain children and adults understand consequences to actions and inactions. These are the people who follow the directions, and instructions to the letter when building something or learning a new skill.

h) Analytical

By thinking and reasoning, you come to conclusions based on many considerations carefully thought out.

2) Right Brain Learners

a) Concrete

The right brain person likes things to be concrete. You like to see, feel or touch the real object. Learning to read using a phonics based program may not be the best choice. Learning whole words instead by using their visual imagery makes more sense to a right brain person. You also prefer to see words in their context or see how a formula works.

The right brain learner recognizes patterns, connections and images. The right brain contains the seat of feelings and emotions. You respond to the tone and emotion of someone's voice. You are by nature impulsive. Generally, right brain can recall people's faces, rather than their names, prefer music or white noise when studying, and need movement to stay alert while learning. You also tend to be less punctual. You like direct experiences that are related, to learn. Lab work, science experiments, counting real money, hands on learning are just a few of the ways a right brain person can easily learn.

b) Intuitive

If you process primarily in the right brain, you are an intuitive thinker. You may not be sure how you got it. You might be able to figure out your mental formula by going backward to see how you get

there. On a quiz you may rely on your good feeling, and are usually right. You rely on your feelings about something to decide if it is true or not.

c) Visual

Visual learners can see images in their mind's eye that can far exceed that of the left brain. They can see an image frequently in three dimensions, turning it this way and that, hence the confusion with certain letters and numbers, which viewed this way can be a "b", and that way can be a "b". Some of you are very strong in "mental math", others in writing, art, music, or even architecture due to your superior visual ability. Maps, drawings, time lines, graphs, and symbols are visual images that may stick and be remembered better than text or rote memorization. These are the people who throw away the directions and do it themselves.

d) Random

If you are right brain, your mind may move rapidly from one thought to another. It's not that you don't want to finish that assignment, but you remembered something else you just had to do, and forget about what you are working on.

Thought, plans, and ideas are crowding out the sequential reasoning of finishing the task at hand.

e) Non-Verbal

Right brain children and adults may know exactly what they mean, but have trouble finding the words to express it. Take the case of the

left vs right in giving directions. A right brain person may say something like: “from here, go to Burger King, and turn right, then go past the park, and you will know you are there when you see the big sign with the huge dog on it!” You may use symbols, or landmarks instead of miles and certain numbers of block and red lights.

f) Global

Also called holistic. A right brain processor needs to see the whole picture, then examine and learn about all the parts that create the whole. Whole – to part.

You need to know this material. You need the answer presented first, then you can figure out the path to get to that answer. You do not generally like outlines, because it presents the pieces first. A right brain person does well, if they scan or read the chapter first, then learn about the details and how it is relevant to their life.

g) Subjective

Your views, opinions and even facts may be subjective, in that you view them through your own personal experiences, and background. Your feelings, based on your sense may guide you more than external stimuli. You may identify by means of your own perception.

h) Fantasy Based

Right brain people tend to see the present and the future as opposed to the past. You are creative, imagination and able to perceive what could be, as opposed to the reality of what IS. Singing, music, art, writing, designing, anything creatively based may come easy for you. These are

the most imaginative children, and the most innovative adults. The world can know no bounds as far as their ability to create through fantasy and imagination. These are the dreamers and presenters of possibilities in our world.

5. The Relationship between Brain and Language

The brain is divided in two hemisphere, those are left and right. The two parts are connected by Corpus Collasum. Each side of the brain controls the other part of the body likewise the right side of the brain. We know that the right hemisphere has nonlinguistic cognitive like impaired memory, attention problems, and poor reasoning. In addition the left hemisphere is the “logical brain” and is involved in language and analysis and the right hemisphere is the “creative brain”, involved in daydreaming and imagination. Language processing way humans use words to communicate ideas. How such communications are processed and understood. Thus is how the brain creates and understands language.

Brain holds is very important role in the language. It has been expressed previously that certain nerves in the brain associated with language function whether oral or writing. It can be proven that there is language disorder for people who suffered brain damage or injury on the head, it also cunducted experiments against the nerves in the brain for healthy people.

The nerves in the brain associated with language is a function of broca’s area, wernicke’s area, and the area of cortex superior speech or motorsuplementer area Saliem (2012). Wernicke’s area is an area in the cerebral cortex related to speech and is involved in both spoken and written language. This area was named after Carl Wernicke, a German neurologist who discovered that the area is related to

how words and syllables are pronounced, while Broca’s area is an area in the frontal lobe of the brain that is related to the production of speech. The area is named after Pierre Paul Broca who noticed an impaired ability to produce speech in two patients who had sustained injury to the region (Carl Wernicke in Mandal, 2018). Based on the three areas of the nerve can be said that there are certain parts of the nerves in the brain that affect humans left to produce speech to speak and communicate with each other.

C. Conceptual Framework

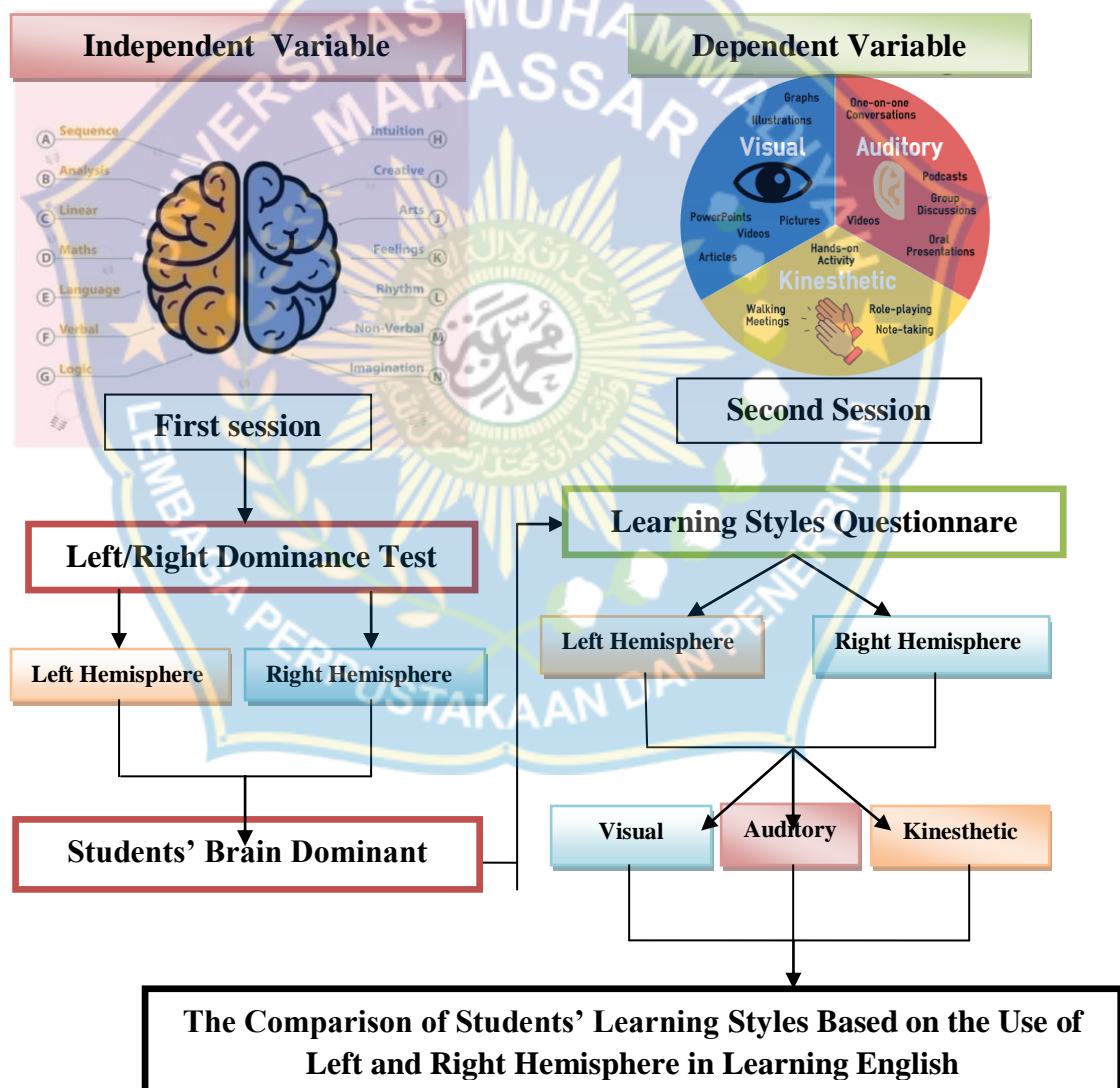
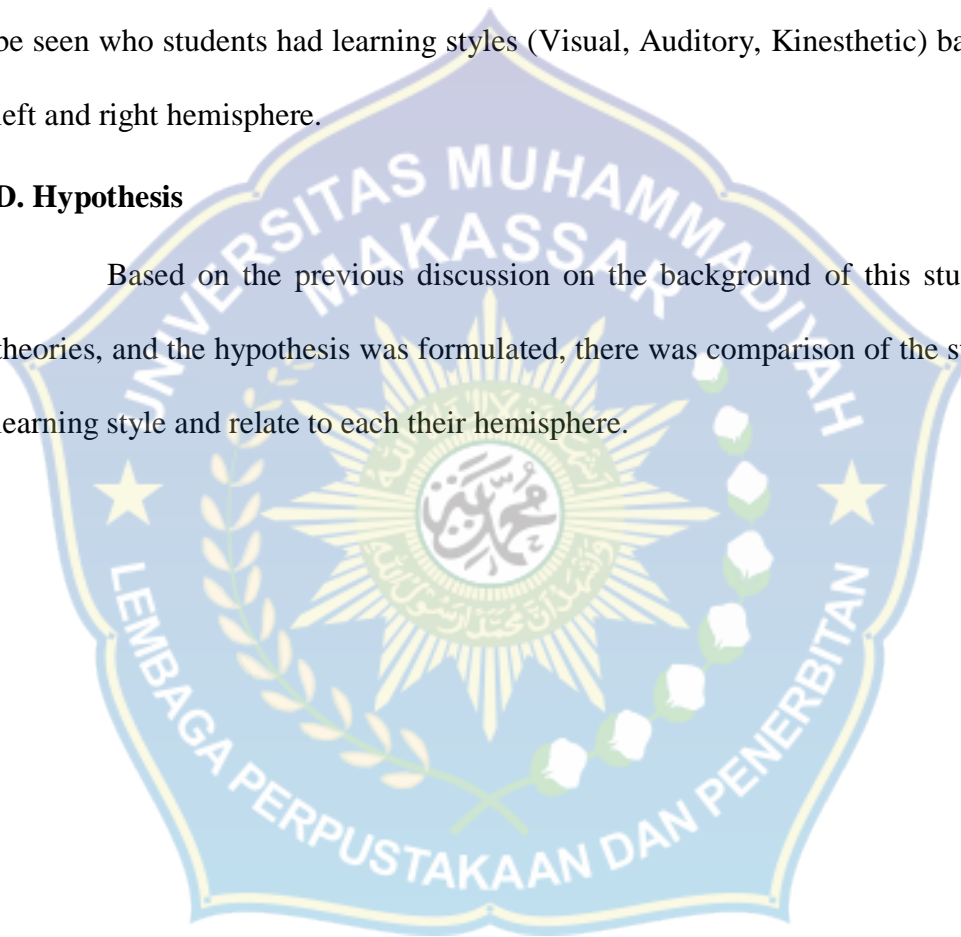


Figure. 2.3 The research paradigm illustrating the researcher’s conceptual framework

Based on the conceptual framework above the researcher used two questionnaires as an instrument study in analyzed students' habit in their daily activities. The researcher conducted in two session of collecting data. Firstly the researcher gave the brain dominance test to found out students brain dominance (Left Hemisphere and Right Hemisphere), after the researcher knew who students had left or right hemisphere then secondly learning styles questionnaire, it would be seen who students had learning styles (Visual, Auditory, Kinesthetic) based on left and right hemisphere.

D. Hypothesis

Based on the previous discussion on the background of this study, the theories, and the hypothesis was formulated, there was comparison of the students learning style and relate to each their hemisphere.



CHAPTER III

RESEARCH METHOD

A. Research Design

The study intended to find out the comparison of students' learning style based on the use of their left and right hemisphere. However, further findings should be explored in order to determine their learning style and brain dominance. In this case, the subjects (students) had received questionnaires. In short, a descriptive study was applied for the purpose of this study.

B. Research Variable

This study consists of two variables as follows:

1. Comparison of students' learning style as the dependent variable.
2. Left and right hemisphere as the independent variable.

C. Research Population and Sample

The population of the study was students at SMPN Satu Atap Tompotanah, Takalar, Sulawesi Selatan, which consists of 60 students. Therefore, in terms of the accessibility of the data collection, then the 19 students in the Eighth Grade were the sample, using Total Sampling.

D. Research Instrument

The instrument of this study used two questionnaires, it was Brain Dominance, there was 10 questions and Learning Styles Questionnaire there was 24 questions.

The Score of Learning Styles Questionnaire. It was classified into the following point values for each question:

Table 3.1 Score of Learning Styles Questionnaire

Criteria	Score
often	5
sometimes	3
seldom	1

Source: Learning Questionnaire adapted from University of Texas Learning Center, 2006

Then, add the points in each column to obtain the students learning styles preference score under each heading.

Table 3.2 Classified of Learning Styles Questionnaire

Visual	Auditory	Tactile
No of items	No of items	No of items
0	1	2
4	3	5
6	3	7
9	1	0
2	4	3

Source: Learning Questionnaire adapted from University of Texas Learning Center, 2006

E. Research Procedure

The procedures of this study were as follow:

1. Determining the population.
2. Preparing two questionnaires then conducting it.
3. Preparing scoring instruction after the students have completed the questionnaires.
4. Analyzed the data.

F. Research Data Collection

The two questionnaires (Brain Dominance and Learning Styles) have given to the students to determine their brain dominance preference and to identify their learning style. Clear instructions on how to fill out the questionnaires have given to students. The researcher has presented at the data collection session to give explanations and answer questions. Participants has given enough time to answer the questionnaires carefully, patiently, and honestly. Confidentiality has ensured and emphasized during each session.

G. Research Data Analysis

The brain dominance to determine students' brain dominance and to determine students' Learning styles as follow:

1. The Right/Left Brain Dominance Test here there was 10 questions that divided into A and B chosen the students will circle either "A" or "B" that most accurately describes them. Afterwards the researcher will add the number of "A" responses and "B" as well, then the sum each the number of "A" responses and also "B" responses. If students have more "A" responses than "B" responses, then the students were Left-Brain Dominate. If students

have more “B” responses than “A” responses, the students were Right-Brain Dominate.

2. Learning Styles Questionnaire. Questionnaire data obtained from each respondent will be made recap based on each learning style. The questionnaire used is an adaptation of DePorter in Siwi (2016:440). Here are step some steps in data analysis:

- a. There are several questions in the questionnaires that will be filled by the response. There are three groups of questions that reflect individual learning styles, learning styles namely the “V” (Visual), “A” (Auditory), and “K” (Kinesthetic). Each question has an answer options: “often” was given a score of 5, “sometimes” was given a score of 3, and “seldom” was given a score of 1.
- b. From each group learning style questions, the scores add up so that in each group of questions of learning styles will produce a certain value.
- c. Conclusion of learning styles tendency by comparing the three values of each group of questions filled out by the subject. Conclusions based on:
 - 1) If there is the highest value at a group study style questions, we conclude that subject tends to be dominant on the learning styles;
 - 2) If there are two highest values of the two groups of the same learning style questions, the subjects are classified in the combination of second Learning Styles”.

3) If there are two highest scores of the two groups disputing learning style questions 1 point, the subject are classified in the “combination of second learning styles”.

d. After that, the recapitulation will be made in the form of:

- 1) Percentage the comparison of each students learning style on left and right hemisphere.
- 2) Percentage of the overall tendency of each students learning style based on left and right hemisphere.

Formula to find out percentage of the students include that students’ learning styles, the researcher used the percentage technique as follow:

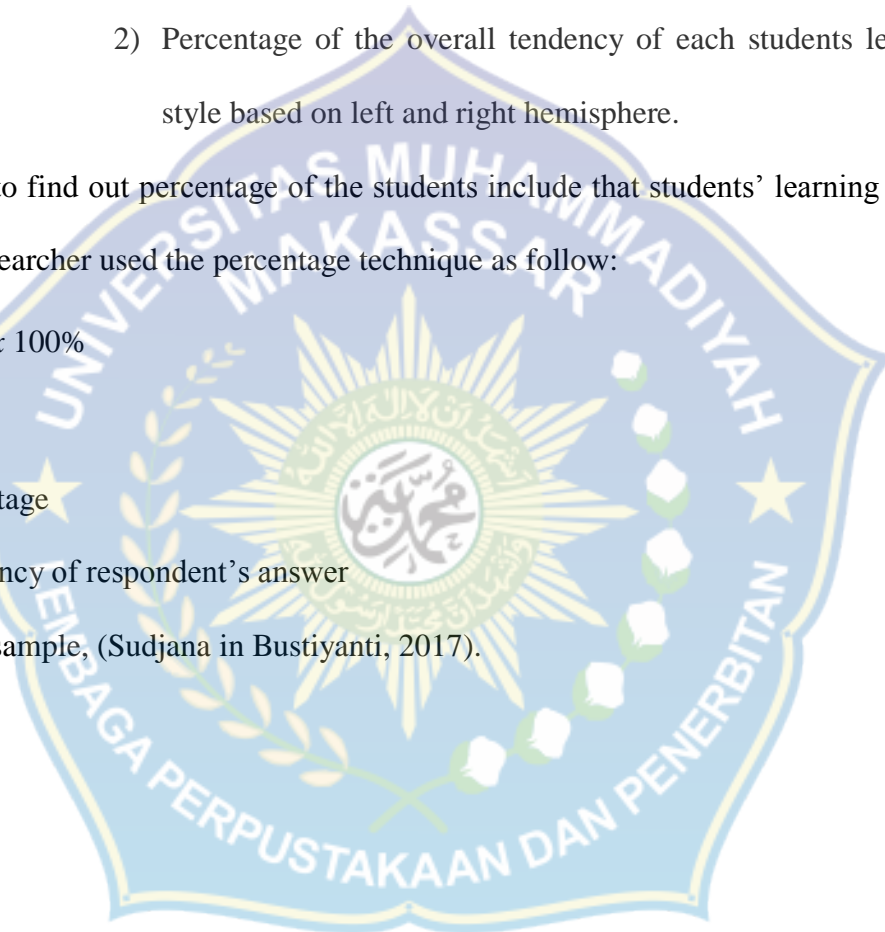
$$P = \frac{F}{N} \times 100\%$$

Where:

P: Percentage

F: Frequency of respondent’s answer

N: Total sample, (Sudjana in Bustiyanti, 2017).



CHAPTER IV

FINDINGS AND DISCUSSIONS

This chapter deals with findings and discussions. The result of data analysis was presented in findings and further explanation was presented in discussion.

A. Findings

Based on the study the researcher did at SMPN Satu Atap Tompotanah, Takalar. The researcher has taken 19 students as sample in the Eighth Grade of total population as much as 60 students which from the sample then the data collected as follows:

1. Description of Left and Right Hemisphere Dominance Variable at the Eighth Grade of SMPN Satu Atap Tompotanah

Human brain has parts and function differently. Thus left brain, where the left brain being on the left hemisphere. It was not just the place that makes difference among left brain and right brain but it also the functions, because the position is different, then different in functions (Kadir in Sumardi, 2014).

The left brain is functioning in terms of the difference, the order, writing, language, a matter of, and logic. The mind brain left is the short term. If there

is any damage to the left hemisphere, there will be impaired in terms of the function of language, talking, and math (Kadir in Sumardi, 2014).

The right brain is being on the right hemisphere of human. It's not just causing this brain region called the right but it's because of their functions. As for a simple explanation about the functions of the right brain, the right brain in cerebrum is being in the right hemisphere has functions similarity, imagination, creativity, form or space, emotion, music, color, etc.

The result of the study which took 19 as sample at the Eighth Grade of SMPN Satu Atap Tompotanah, Takalar then the researcher could collected the data through brain dominance have filled by students itself, it has been given a score on each both hemisphere dominance and served in the form of tables as follow:

Table 4.1 Score the Left and Right Hemisphere Test at the Eighth Grade of SMPN Satu Atap Tompotanah.

No	Respondents	Questions		Brain Dominance
		A	B	
1	Respondent 1	6	4	Left Brain
2	Respondent 2	6	4	Left Brain
3	Respondent 3	4	6	Right Brain
4	Respondent 4	7	3	Left Brain
5	Respondent 5	6	4	Left Brain
6	Respondent 6	5	5	Left/Right Brain
7	Respondent 7	7	3	Left Brain
8	Respondent 8	5	5	Left/Right Brain

9	Respondent 9	4	6	Right Brain
10	Respondent 10	6	4	Left Brain
11	Respondent 11	2	8	Right Brain
12	Respondent 12	7	3	Left Brain
13	Respondent 13	4	6	Right Brain
14	Respondent 14	4	6	Right Brain
15	Respondent 15	7	3	Left Brain
16	Respondent 16	3	7	Right Brain
17	Respondent 17	8	2	Left Brain
18	Respondent 18	4	6	Right Brain
19	Respondent 19	5	5	Left/Right Brain

The table above was about the right and left hemisphere test, the test has found whose the students have left hemisphere nor right hemisphere dominance either or even the students have both of the hemisphere dominance. Based on the table above found out three categories, they are the students who have left hemisphere dominance are 9 students, the right hemisphere dominances are 7 students, and the students have both left and right hemisphere dominance or balances are 3 students. It could be concluded that the students who have left brain dominance in great quantities at the Eighth Grade of SMPN Satu Atap Tompotanah.

The next step after collected data from brain dominance test then had found what brain dominance in each student the researcher gave the

students the learning style questionnaire to determine students learning styles based on the students left and right hemisphere.

Table 4.2 Total Score of Students' Learning Styles Questionnaire

Respondents	Total Score			Learning Style
	Visual	Auditory	Tactile	
Respondent 1	37	32	18	Visual
Respondent 2	22	28	14	Auditory
Respondent 3	22	34	22	Auditory
Respondent 4	26	28	24	Auditory
Respondent 5	34	34	30	Visual-Auditory
Respondent 6	18	24	18	Auditory
Respondent 7	34	22	20	Visual
Respondent 8	32	32	26	Visual-Auditory
Respondent 9	24	18	18	Visual
Respondent 10	30	32	28	Auditory
Respondent 11	24	18	20	Visual
Respondent 12	20	22	24	Kinesthetic
Respondent 13	32	22	24	Visual
Respondent 14	32	16	30	Visual
Respondent 15	34	38	26	Auditory
Respondent 16	30	30	28	Visual-Auditory
Respondent 17	32	26	26	Visual
Respondent 18	30	30	20	Visual-Auditory

Respondent 19	26	26	26	Visual-Auditory-Kinesthetic
---------------	----	----	----	-----------------------------

Based on the table above refer to students learning style through questionnaires after the students finished the test to identify students hemisphere dominance then the researcher summed the whole scores by the rule of each questions. The result indicated which had more scores at three of learning styles it means students were more dominant of the learning styles.

Table 4.3 Percentage of Learning Styles Based on Brain Dominant

No	Category	Total Sample	No of students	Percentage
1	Visual-Right (VR)	19	4	21.05
2	Auditory-Right (AR)	19	1	5.26
3	Visual-Auditory-Right (VAR)	19	2	10.52
4	Auditory-Left-Right (ALR)	19	1	5.26
5	Visual-Left (VL)	19	3	15.78
6	Auditory-Left (AL)	19	4	21.05
7	Kinesthetic-Left (KL)	19	1	5.26
8	Visual-Auditory-Left (VA-L)	19	1	5.26
9	Visual-Auditory-Left-Right (VA-LR)	19	1	5.26
10	Visual-Auditory-Kinesthetic-Left-Right (VAK-LR)	19	1	5.26

Based on the analysis data above the researcher divided into ten categories from data which found in studies they were Visual-Right (VR), Auditory-Left (AL) where the researcher found that each of them 4 students' in percentage 21.05%, Visual-Auditory-Right (VAR) had 2 students' in percentage 10.52%, Visual-Left (VL) had 3 students' in percentage 15.78%, Auditory-Right (AR),

Auditory-Left-Right (ALR), Kinesthetic-Left (KL), Visual-Auditory-Left (VAL), Visual-Auditory-Left-Right (VALR), and Visual-Auditory-Kinesthetic-Left-Right (VAKLR) each of them one student in percentage 5.26%. If it made a diagram as follows:

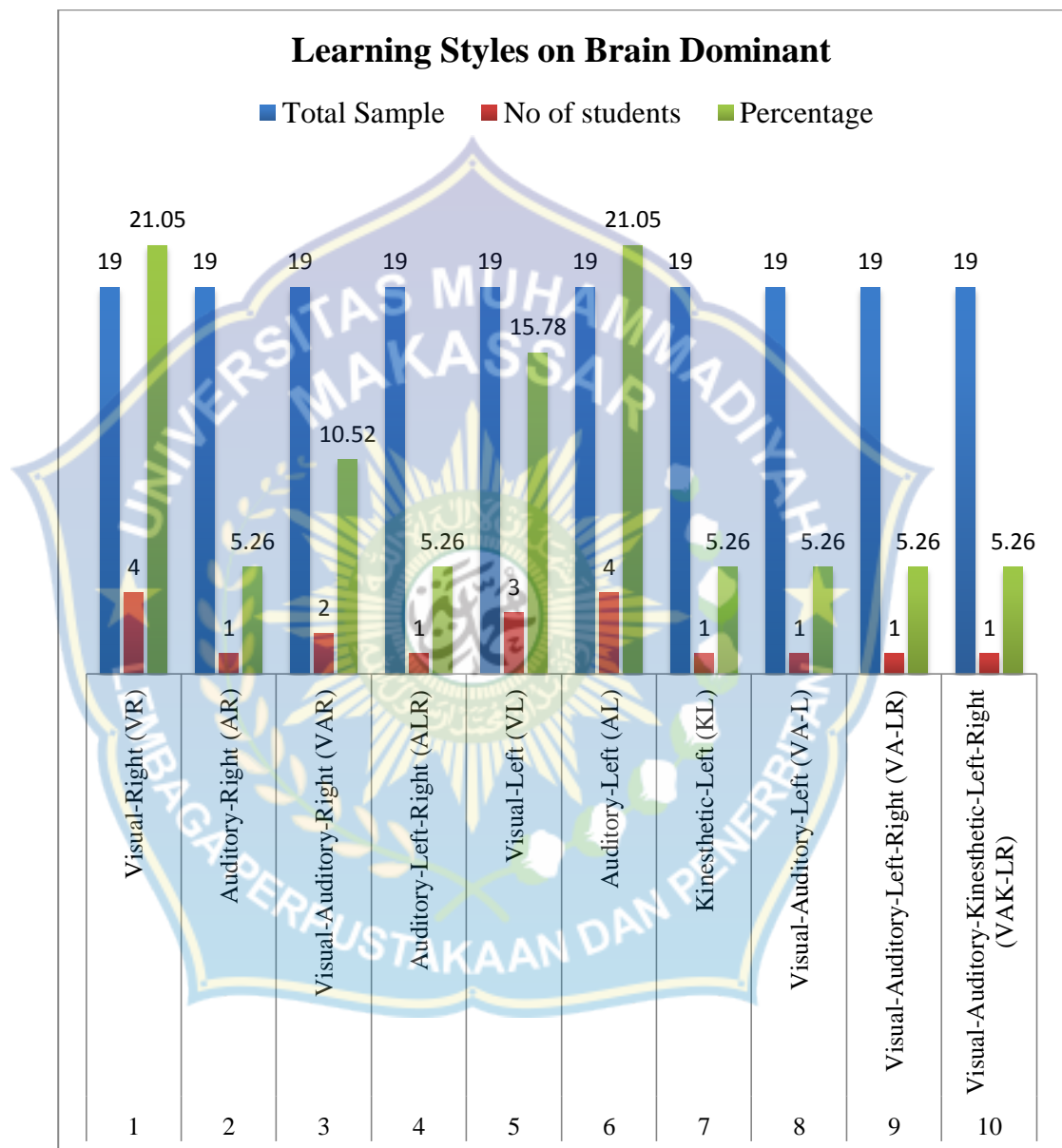


Figure 4.1 Students Learning Styles Based on Left and Right Hemisphere

2. Description of the Students' Learning Styles Variable based on Left and Right Hemisphere at the Eighth Grade of SMPN Satu Atap Tompotanah
- a. The Students' Learning Style based on the Left Hemisphere

Table 4.4 The Students Learning Style based on Left Hemisphere

Left Hemisphere	Learning Style
Respondent 1	Visual
Respondent 2	Auditory
Respondent 4	Auditory
Respondent 5	Visual-Auditory
Respondent 7	Visual
Respondent 10	Auditory
Respondent 12	Kinesthetic
Respondent 15	Auditory
Respondent 17	Visual

Based on the table above there was 9 respondents or students of left hemisphere that had difference learning style and also some of them was the same, respondent 1, respondent 7, and respondent 17 were visual, it means there were 3 students who visual, then respondent 2, respondent 4, respondent 10, and respondent 15 were auditory, it means there were 4 students, afterward respondent 12 were tactile/kinesthetic while the researcher found there was a student had two learning style visual-auditory at respondent 5.

If it made a diagram as follows:

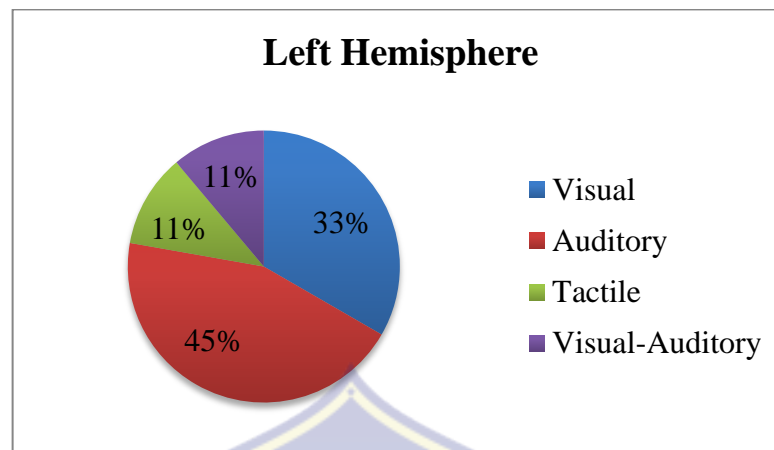


Figure 4.2 Percentage of Students' Learning Style on Left Hemisphere

The diagram above refer to percentage of the students who had left hemisphere dominance in auditory was larger than other learning styles marked red color (45%) followed by visual blue (33%) and the last tactile/kinesthetic were the same as visual-auditory, purple and green (11%).

b. The Students' Learning Style based on Right Hemisphere

Table 4.5 Students Learning Style based on Right Hemisphere

Right Hemisphere	Learning Style
Respondent 3	Auditory
Respondent 9	Visual
Respondent 11	Visual
Respondent 13	Visual
Respondent 14	Visual
Respondent 16	Visual-Auditory
Respondent 18	Visual-Auditory

According on the table above refer to students who had right hemisphere dominance, they had different learning style. Firstly respondent 9, respondent 11, respondent, 13, and respondent 14 were visual, it means there were 4 students, and then respondent 3 was auditory it means only one a student while respondent 16, respondent 18 were visual-auditory. It made a diagram as follows:

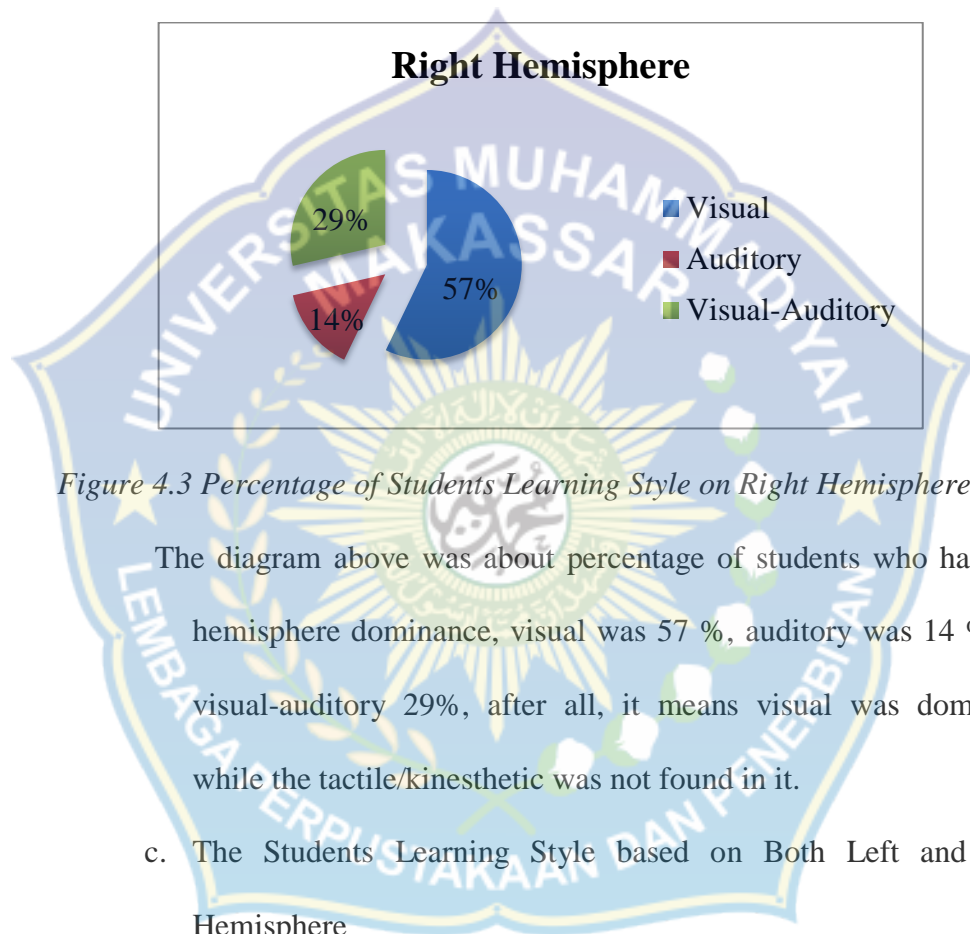


Figure 4.3 Percentage of Students Learning Style on Right Hemisphere

The diagram above was about percentage of students who had right hemisphere dominance, visual was 57 %, auditory was 14 %, and visual-auditory 29%, after all, it means visual was dominance while the tactile/kinesthetic was not found in it.

- c. The Students Learning Style based on Both Left and Right Hemisphere

Table 4.6 Students Learning Style on Left and Right Hemisphere

Left and Right Hemisphere	Learning Style
Respondent 6	Auditory
Respondent 8	Visual-Auditory
Respondent 19	Visual-Auditory-Kinesthetic

The table above was about students who had both hemisphere of brain left and right hemisphere, there were 3 students they were respondent 6, respondent 8, and respondent 19 but three of them there were only one had learning style while another two even three had learning styles, respondent 6 was auditory, respondent 8 was visual-auditory, then respondent 19 was visual-auditory-kinesthetic.

B. Discussions

1. Students' Left/ Right Hemisphere Dominant and Learning Styles in the Eighth Grade of SMPN Satu Atap Tompotanah.

a. Students' Brain Dominance

The researcher has done at SMPN Satu Atap Tompotanah showed the students who had filled the instrument (Brain Dominance Test) which was establish whether the students' was more dominant in left hemisphere or right hemisphere even the students have both the hemisphere. Based on the result the researcher summed each of students' response. The students who have more "A" responses than "B" responses, then the students were left hemisphere dominate from the brain dominance test , they were respondent 1, respondent 2, respondent 4, respondent 5, respondent 7, respondent 10, respondent, 12, respondent 15, and respondent 17. This means they are; are very rational, analyze people and situations, usually favor the subjects of math/science, are methodical, are a sequential thinker, use logical reasoning, like to work with things that can be seen or touched. While the students who have more "B" responses than "A" responses, then the students were right hemisphere dominate. This means are; very creative, usually emotional, like to be different

from others, handle situations easily, like to think abstractly, enjoy the arts (music, art, drama), and a divergent thinker. They were respondent 3, respondent 9, respondent 11, respondent 13, respondent 14, respondent 16, and respondent 18. Meanwhile the students who have both hemisphere, they are respondent 6, respondent 8, and respondent 19. In short the respondents who had left hemisphere were 10 students, right hemisphere was 7 students, while both hemisphere was 3 students. The typical this students could balance their brain. To compare left brain and right brain; symbol versus picture, harmony/sequence versus random, logic versus creative/art, detail to global versus global to detail, step by step versus immediately, process then memory versus memory then process, duplication versus imagination, neat versus disordered and leap, analysis of decoding versus conclusion analysis, deadlines versus free of time, plan versus inspiration, and dark black object versus colorful objects.

Modern scientist knew that the left brain is rational and verbal brain while the right brain is non-verbal and intuitive brain. We require special functions from both hemispheres of our brains to accomplish a lot of tasks in our daily lives. There are some nonverbal tasks such as music, drawing, painting, and dancing in which our brain excels and you'd be best to shelve our left brain functions to prevent interface by our rational hemisphere, while a lot of people can be categorized as left or right brain thinkers, there are exercises that can help us develop and nurture our intuitive hemisphere.

The facts about hemisphere of brain are the right hemisphere of body is controlled by left hemisphere of brain, the left hemisphere of body is controlled

by the right hemisphere of brain, most people are left brain dominate, even people who are left handed writers, the left hemisphere of brain controls speech, reading, writing, and math, and the last the right hemisphere deals with spatial with spatial relationship, abstractions, and feelings.

Based on the analysis data could be seen that the comparison of left and right hemisphere at the Eighth Grade of SMPN Satu Atap Tompotanah, the researcher had found that based on the Brain Dominance test has given to students has seen that the students with left hemisphere was dominant than the right hemisphere, the students had left hemisphere was 9 students then the students had right hemisphere were 7 students while students had both hemisphere left and right hemisphere were 3 students. The sum of all students was 19 students.

b. Students' Learning Styles

The researcher collected the data of Learning Styles Questionnaire by the students it indicated at students' dominant learning styles, respondent 1 got the total score was more in visual learning style, respondent 2 was more in auditory learning style, respondent 3 was more in auditory learning style, respondent 4 was more in auditory learning style, respondent 5 had two learning style it was visual and auditory, respondent 6 was auditory learning style, respondent 7 was visual learning style, respondent 8 was also visual and auditory learning style, respondent 9 was visual learning style, respondent 10 was auditory learning style, respondent 11 was visual learning style, respondent 12 was tactile or kinesthetic learning style, respondent 13 was visual, respondent 14 was visual, respondent 15 was auditory, respondent 16

was visual and auditory, respondent 17 was visual, respondent 18 was visual and auditory and the last respondent 19 had three of learning styles, it was visual-auditory-tactile/kinesthetic. In short the respondents who had visual were 7 students, auditory was 6 students, while tactile/kinesthetic was 1 student.

We all have a way in which we best learn. Learning style are considered by many to be one factor of success in higher education. Alternatively, many researchers have argued that knowledge of learning styles can be of use to both educators and students. Students with knowledge of their own preferences are empowered to use various techniques to enhance learning, which in turn may impact overall educational satisfaction.

2. The students learning styles based on the use of left and right hemisphere

The researcher had found that based on the result of giving the questionnaire about learning styles after the brain dominance test had given the students, we could see the students left hemisphere were had visual learning there were 3 respondents, then auditory left hemisphere there were 4 respondent, while tactile/kinesthetic were 1 respondent, meanwhile both visual-auditory was 1 respondent at the Eighth Grade of SMPN Satu Atap Tompotanah. Afterward, the right visual hemisphere were 4 respondents, the auditory right hemisphere was 1 respondent, while tactile/kinesthetic was no respondent in right hemisphere, meanwhile both visual-auditory were 2 respondents at the Eighth Grade of SMPN Satu Atap Tompotanah. The whole brain, auditory left/right hemisphere was 1 student, visual-auditory left/right hemisphere was 1 student, and also visual-auditory-tactile/kinesthetic left/right hemisphere was 1 student.

The diversity of the brain's continuum combination, those are; a. the left brain with visual sensors tend to be quite, assertive, thinking collapse, good logic, b. the auditory left brain tend to argue, good logic, quick memorize, c. the kinesthetic left brain tends to keep quite, frisky move, thinking collapse, good logic, d. the visual right brain likes imagination, strong in mind, tend to be quite, difficult to spell, to draw, not to take notes, e. the right brain of auditory likes to talk, randomly talking, imaginary, like-minded, difficult spelling but likes to talk, f. the kinesthetic right brain tend to be quite, keep moving, moving sideways, often do the things that are full of risk, good at making something work of their hand.

It just like we all see the world differently, we all learn differently. Visual learning style, often referred to as the spatial learning style, is a way of learning in which information is associated with images. This learning style requires that learners first see what they are expected to know. Students with a visual learning style are often referred to as visual-spatial learners. In addition to unique learning methods, the visual learning style is also reflected in personality and habits. Visual learners are known to: have a good sense of direction, remember faces but forget names, make plans for the future, be good with maps, be tidy and organized, sometimes to the point of meticulousness, scribble and draw when bored, make (but not always remember to follow) to-do list, have a good sense of fashion, be quite and sometimes shy, remain focused when working. Visualization often comes easy to the visual learner because learners tend to spend so much time seeing things, they often need to make material stand out more. Otherwise, information tends to get lost in their minds. To remember

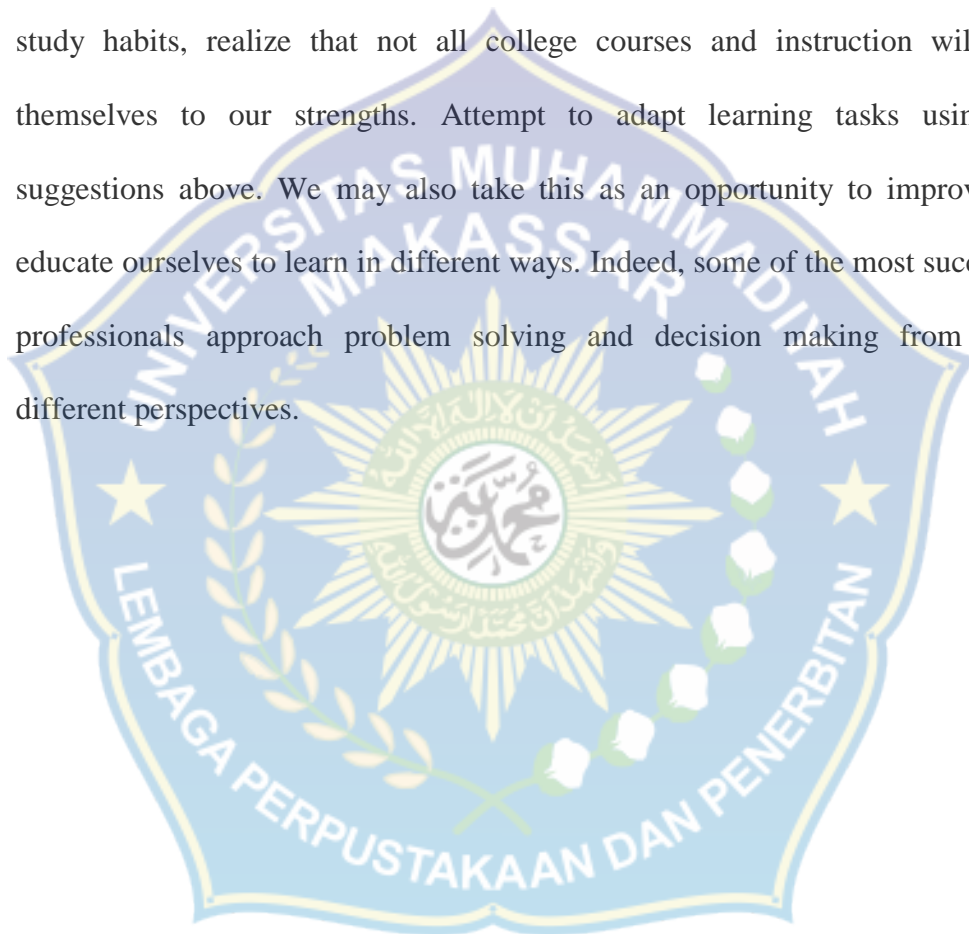
information, visual learners should: use color in their notes, outline information contained in textbooks, diagram information or create charts, draw things they are visualizing, and create maps.

Auditory learners absorb information best through the sense of hearing. Suggestions for auditory learners: use audiotapes for learning languages, read textbooks aloud, repeat facts with eyes closed, ask questions, avoid auditory distractions, use audiobooks, record lectures and listen to them again, listen to taped notes, participate in group discussions, watch videos, use word association to remember facts and lines, and describe aloud what is to be remembered. Preferred test for auditory learners are writing responses to lectures, oral exams.

Otherwise, many students have no problem learning their reading, writing, and arithmetic by sitting at an assigned desk and completing worksheets, many others aren't lucky. They have trouble sitting at their desks for extended periods of time, they need to move around and touch things to learn most effectively. In the past, these students were considered hyperactive and difficult. Now we know better. These students aren't being difficult. They just learn differently. They are kinesthetic students. They learn best when they can move around and engage their small and large muscle groups. Oftentimes, kinesthetic learners feel their way of learning isn't as good because they can't "sit and do the work," but there are lots of ways to maximize their learning style. Kinesthetic students do things differently, but it doesn't mean they do them worse.

The study include successful because it is in conformity with the hypothesis that has researcher set up. It should be understood that when both of the brain hemisphere that regulate intelligence human being worked at the same time, for

example left hemisphere works in terms of numbers, figures, and creativity, it would be very help assist students' in balancing the both brain hemisphere. Besides students' learning styles that difference from another it means students could follow what their learning styles or brain hemisphere dominance it helped students in way of learnt better and appropriate. Although it is important to know our learning strengths as a foundation for the development of personal study habits, realize that not all college courses and instruction will lend themselves to our strengths. Attempt to adapt learning tasks using the suggestions above. We may also take this as an opportunity to improve and educate ourselves to learn in different ways. Indeed, some of the most successful professionals approach problem solving and decision making from many different perspectives.



CHAPTER V

CONCLUSIONS AND SUGGESTIONS

This chapter consists of two sections. Firstly are the conclusions which based on the research findings and discussions. Secondly are suggestions that based on the conclusions aimed.

A. Conclusions

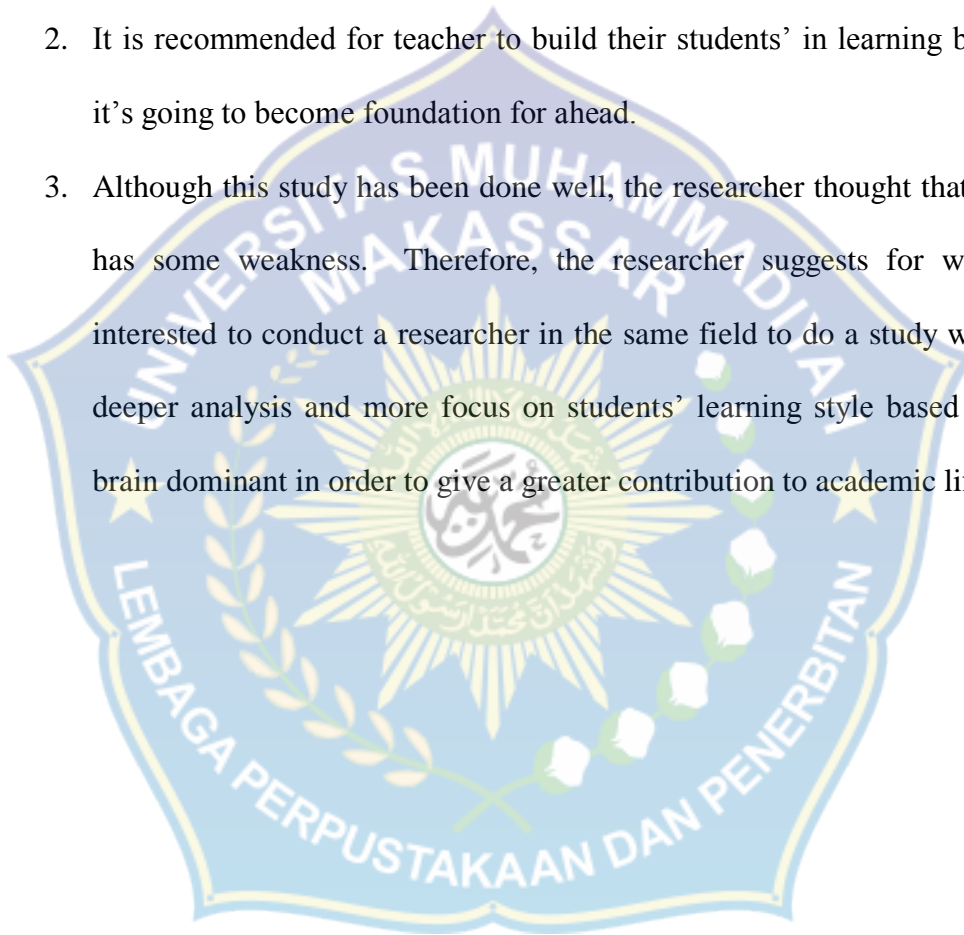
Based on the result and discussion of the previous chapter, the researcher comes to the following conclusions:

1. Most of students in the Eighth Grade of SMPN Satu Atap Tompotanah are more dominant in the left hemisphere 9 students than students who have right hemisphere 7 students while both hemisphere 3 students of the overall number of students there are 19 students.
2. The students' auditory learning style on left hemisphere is more dominant than students' visual and kinesthetic learning styles that have left hemisphere. Meanwhile the students' visual learning style on right hemisphere is more dominant than students' auditory and kinesthetic learning styles on right hemisphere.

B. Suggestions

Considering the result of this study, the researcher offers some suggestions as follows:

1. The teacher should give questionnaires about learning styles on brain dominance before the teacher begin to teach their students, it held in the first year of school.
2. It is recommended for teacher to build their students' in learning because it's going to become foundation for ahead.
3. Although this study has been done well, the researcher thought that it still has some weakness. Therefore, the researcher suggests for who are interested to conduct a researcher in the same field to do a study with the deeper analysis and more focus on students' learning style based on the brain dominant in order to give a greater contribution to academic life.



BIBLIOGRAPHY

- Azhari Muh. 2017. *An Analysis on The Learners' Learning Styles of The 1st Semester Students' of English Department of Makassar Muhammadiyah University*. Unpublished. Makassar: University of Muhammadiyah Makassar.
- Benders S. David. 2012. Learning Style and It's Importance in Education. Cited by researchgate.com accessed on May, 03, 2018
- Bustiyanti Dewi. 2017. *Investigating Types of Students' Learning Style*. Unpublished. Makassar: University of Muhammadiyah Makassar.
- Chieke, S.C., Ewelum, J.N., & Madu, C.O. 2017. Determination of Auditory and Visual Learning Styles of Adult Learners in Adult Literacy Centers in Anambra State, Nigeria. *IOSR Journal of Research & Method in Education*, (Online), Vol 7(3), 30-33.
www.iosrjournals.org. accessed on May, 03, 2018
- Duman Bilal. 2010. The Effects of Brain-Based Learning on The Academic Achievement of Students' with Different Learning Styles. *Educational Sciences Theory and Practice*, (Online), Vol. 10(4), 2077-2103. Accessed on May, 03, 2018
<https://eric.ed.gov>
- Hatami Sarvenaz. 2012. Learning Styles. *ELT Journal: Oxford University Press*, (Online), Vol. 67(4) 488-490. Accessed on May, 03, 2018
- King Valorie. 1996. *Learning Thinking Style*. Printed from Hoagies Gifted Education, (Online).
www.hoagiesgifted.org/learning_thinking_style.htm, accessed on June, 03, 2018.
- Mandal Ananya. 2018. Language and The Human Brain. *Brain Medical Life Sciences*. Cited by An AZoNetwork
www.news-medical.net. Accessed on June, 07, 2018
- Morris Michelle. 2006. *Learning Styles Both Hemisphere*. Support and Resources for SPD Families, (Online).
Spdsupport.org/articles/19-learning-styles-both-hemispheres.shtml, accessed on June, 03, 2018.
- Mulyana Aina. 2015. *Gaya Belajar Siswa*. Posted by Pendidikan Kewarganegaraan, (Online).
Ainamulyana.blogspot.com/2015/04/gaya-belajar-siswa.html?m=1, accessed on January, 03, 2018.

- Notes Psychology Hq. 2011. *The Two Hemisphere of Our Brain*. Resources for Psychology Students, (Online).
www.psychologynoteshq.com/brain-hemisphere/, accessed on June, 03, 2018.
- Riadi Muchlisin. 2012. *Gaya Belajar*. Cited by kajianpustaka.com
www.kajianpustaka.com/2012/11/gaya-belajar.html?m=1, accessed on May, 26, 2018.
- Saliem Agus. 2012. *Fungsi Otak Kanan dan Kiri*. Cited by agussaliem.wordpress.com, (Online).
<https://agussaliem.wordpress.com/artikel/fungsi-otak-kanan-dan-kiri/>, accessed on May, 26, 2018.
- Savadkouhi Zahra Bavand., Hassani Mohammad Taghi., et al. 2013. The Effect of Hemispheric Dominance on Learning Vocabulary Strategies among Iranian EFL Learners. (Online) *European Journal of Nutaral and Social Sciences*, (2)2, 1805-3602.
- Siwi Kurnia Menik., V.L Yuhendri. 2017. Analysis Characteristics of Learning Styles VAK (Visual, Auditory, Kinesthetic) Students of Banks and Financial Institutions Course. *International Conference on Education for Economics, Bussiness, and Finance (ICEEBF)*, (Online). Published. Padang: University of Padang.
Iceebf.um.ac.id. accessed on May, 27, 2018
- Wurips8. 2015. *Gaya Belajar*. Cited by oikwurie.wordpress.com
www.google.co.id/amp/s/oikwurie.wordpress.com/2015/06/15/gaya-belajar/amp/, accessed on May, 26, 2018

AUTOBIOGRAPHY



NURFITRI was born on June 7th 1995 in Ujung Pandang, South Sulawesi. She is the youngest of six children from the marriage of her parents Alm. M. Yasim and Masdiana. In 2000, she graduated from Kindergarten Nurul Furqan. She continued her study at SD N 246 Rantebelu and graduated in 2006. Then, she continued her study at MTs. Keppe for the first grade, and graduated in 2010. She continued her study at SMK F Yamasi Makassar, and graduated in 2013. After graduated in Senior High School, she was accepted as the student in English Department of Faculty of Teacher Training and Education, University of Muhammadiyah Makassar in 2019.



DOCUMENTATION

1. The researcher gave instructions for respondents how to answer the questionnaires



2. The researcher distributed the questionnaires for respondents



3. The respondents answer the questionnaires



4. The respondents gathered the questionnaire to researcher

