THE EFFECT OF APPLYING BERLITZ METHOD ON STUDENTS'

CONJUNCTION MASTERY AT ISLAMIC BOARDING SCHOOL

DARUL HIKMAH TPI MEDAN

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Submitted to the Tarbiyah Faculty and Teachers Training State University for
Islamic Studies (UIN) North Sumatera Medan as a Partial Fullfillment

Requirement For S1 Degree

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Medan

2017

Skripsi ini yang berjudul: "**THE EFFECT OF APPLYING BERLITZ METHOD ON STUDENTS' CONJUNCTION MASTERY AT ISLAMIC BOARDING SCHOOL DARUL HIKMAH TPI MEDAN**", yang disusun oleh saudari **Farida Hanum Maha**, telah dimunaqosyahkan dalam Sidang Munaqosyah Sarjana Strata Satu (S.1) Fakultas Ilmu Tarbiyah dan Keguruan UIN SU Medan pada tanggal:

05 Mei 2017
08 Sya'ban 1438 H

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Assalamu'alaikum Wr. Wb

Dengan Hormat,

Setelah membaca, meneliti dan memberi saran-saran perbaikan seperlunya, terhadap skripsi mahasiswa a.n. Farida Hanum Maha yang berjudul: "THE EFFECT OF APPLYING BERLITZ METHOD ON STUDENTS CONJUNCTION MASTERY AT ISLAMIC BOARDING SCHOOL DARUL HIKMAH TPI MEDAN". Maka kami berpendapat skripsi ini sudah dapat diterima untuk di Munaqasyahkan pada sidang Munaqasyah Fakultas Ilmu Tarbiyah dan Keguruan UIN-SU Medan.

Dengan demikian surat ini kami sampaikan. Atas perhatian saudara kami ucapkan terima kasih.

W a s s a l a m

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    Menyatakan dengan sepenuhnya bahwa skripsi yang berjudul diatas adalah asli dari buah pikiran kecuali kutipan-kutipan didalamnya yang disebutkan di dalamnya sebagai sumbernya.

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ABSTRACT

FARIDA HANUM MAHA, 34134178. THE EFFECT OF APPLYING BERLITZ METHOD ON STUDENTS' CONJUNCTION MASTERY AT ISLAMIC BOARDING SCHOOL DARUL HIKMAH TPI MEDAN.

Thesis. Department of English Education. Faculty of Tarbiyah Science and Teachers' Training. State Islamic University of North Sumatera, Medan. 2017..
This research was conducted to know the effect of applying Berlitz Method on Students' Conjunction Mastery in learning at Islamic Boarding School Darul Hikmah TPI Medan.

The population of this research was taken from the students grade Eleventh of Islamic Boarding School Darul Hikmah TPI Medan in the academic year of 2017/2018, which consisted of two classes. The total number of students in each group is 40, where 20 students for experimental group and the other 20 students for control groups. So the writer took all students as the sample in this research, because according Suharsimi Arikunto if population was less than 100, the researcher must took all number students as the sample in the research.

The researcher used a multiple choice test to collect the data. The test consisted of two types, namely pre-test and post-test. The data were analyzed by using t-test formula. To know the normality testing of data by using Lilliefors test, validity testing by using Product Moment, and homogeneity testing by using F test. The experimental group was taught by applying Berlitz Method while the control group was taught without using by Berlitz Method.

After analyzing the data, the result of the research showed that the value of t-observed was higher than the value of t-table (2.462>1.684) at the level significance of $\alpha = 0,05$ and at the degree of freedom (df) = 38. It can be concluded that applying Berlitz Method has significant effect on students' achievement in writing descriptive or in other words the alternative hypothesis (Ha) was accepted.

Keywords:*Berlitz Method, Conjunction.*

ACKNOWLEDGMENT

The Greatest of all are to the almighty god Allah SWT, Most merciful for the opportunity and health given to me which has enabled to complete to the prophet Muhammad, who has brought islam and guided human to good life and faith.

The aim of finishing this thesis is as person a partial fulfillment of requirement for S-1 program at English Department, Tarbiyah Faculty, State Islamic University of North Sumatra.

The process of finishing this thesis involved some contributing person therefore, I would like to say thank you for them, and they are :

1. Mrs. Dr. Derliana Marbun, M.Pd as my first advisor who has given advice and suggestion in completing this thesis

2. Mrs. Ernita Daulay, S. Pd, M. Hum, as my second advisor who has given some suggestion and ideas for writing this thesis

3. Whole lecturer who have guided and imported variety knowledge during I studied at Tarbiyah Faculty of UIN-SU

4. My beloved parents Zailani Maha and my mother Rasmi Br Simarmata who have patietly given spiritual, Moral, Financial to support and her endless love and prayer. So I can finish my S-1 degree. My beloved brother Syamsuddin Maha,my sister Halimah Tussya'diyah and younger brother Muhammad Habib Maha. This is not only belong tome but also belonging to all of you. This our family ambition.

5. Gratitude and Sincerts to sister Asni Juliana BatuBara and brother Amri Rudini Batubara that has given many motivations and supports during my study.

6. My best friends Meri, Fahmi, Devi, Sister Nuning, Dyah, Sa'adah, vina, Ayu, Tahmud, pida, Rani, and All of my friend in who helped me in finishing this thesis and always support me. Also Special and sincerest gratitude and addressed to all of the students at PBI 6 2013.

7. Special thanks for the headmaster of MAS Islamic Boarding School Darul Hikmah TPI Medan, Hj. Chadijah Abdul Latif Purba, Lc, MA and also all of the teachers in this school who have give me advice and prayer

Finally, it is obviously that this thesis is not perfect yet either in content or grammar or etc, so that, the suggestion and critical from the reader for better of this thesis is hoped. And it is hope that this thesis would be useful. May Allah bless us.

Medan, 24 April 2017

Farida Hanum Maha

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CHAPTER I

INTRODUCTION

A. The Background of Study

English is a global language, it means that English is used by people in almost all parts of the world to communicate each other. In Indonesia, English is used as foreign language, it must be studied in order to master and develop the knowledge, technology, arts and to create a good with other countries. The position of English in Indonesia is as compulsory subject in schools from elementary level up to university level.[1] Although, English is just as foreign language, it has important role in our country. It proves that English is one of the subjects required for passing the National Examination for junior and senior high school. This situation showed that how important English is, therefore it is expected that everyone should be able to master English.

In studying English, the most important thing is learning English grammar because mastering grammar make someone easier to communicate each other. According to Charles Fries said that learning grammar or structure was starting point for the students.[2] One of important to learn in English grammar is conjunction material. Conjunction is the part of speech used as a joiner for words, phrases, or clauses in a particular sentence, for example "This cake is to you" this sentence is incorrect, but it should be "This cake is for you" this is simple example. But in fact, Many students are confused in their sentences. Especially

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[1] *Act of the Republic of Indonesia on National Education System (National on Education System),* (Jakarta. 2003,), p. 22

[2] J.C.Richards and T.S. Rodgers, *Approach and Method in Language Teaching: A Description and Analysis,* (London: Cambridge University Press, 1986), p. 48

when they want to use conjunction in their sentences, Then based on the writer's observation in class XI students of Islamic Boarding School Darul Hikmah TPI Medan, there are many students who got score below 70 in their final semester test. However, there are also some students who had good scores and who had very good scores. Of course, it is not only the grammar components which were tested, but grammar components are the main aspects which are tested in final semester tests.

The writer assumes the Berlitz Method is appropriate method for teaching students about conjunction, Berlitz Method is explaining subject using English language totally. This method is suitable to used because it can make students mastering in conjunction and they also able to speak English correctly. In addition, When the writer interviewed some students, the writer found that grammar was one of the most difficult aspect in learning English, and conjunctions are some grammatical components that they feel difficult to learn. Based on these students' impression, the writer believe that it is necessary to apply berlitz method in teaching, to increase the students' mastery at conjunction material. The writer supposed the Berlitz Method is effective way to improve students' mastery in English conjunction

Berlitz Method was first introduced by Maximilian Berlitz in Berlitz School. The students are encouraged to use target language as their language communication. Berlitz Method as one of the application of direct method. Sometimes also called *natural method,* is a method that only refers to the use of the target language. The writer assumes that Berlitz Method can be an alternative method besides the other famous methods.

The writer had an opportunity to teach the Second grade at the senior high school, the writer took two classes, one class has 20 students and other class 20 students. Based on the writer observation in Islamic Boarding School Darul Hikmah TPI Medan, most of students have difficulties to describe, retell, and explain something that is related to the conjunction and occurrence which has a close relation with students' mastery in connecting conjunction.

In this case the English teacher needs to motivate students through new atmosphere that makes the student more interested in improving their understanding of conjunction with certain method. There are many methods that make students' improve the subject in using conjunction.

In this case the writer tries to offer a kind of variation that the method is expected to enhance the students' mastery in conjunction. The writer assumes that Berlitz Method is the effective way to teach conjunction at Islamic boarding school Darul Hikmah research location because this school used two languages in teaching learning process such as English and Arabic. So the writer assumes that student can be received the berlitz method in learning English process.

Based on the explanation above, the writer was interesting in conducting a research entitled: **The Effect Of Applying Berlitz Method On Students' Conjunction Mastery At Islamic Boarding School Darul Hikmah TPI MEDAN**

B. The Identification of Study

Based on the background of study the identification of the study as the following:

1. The students' mastery at using conjunction is still low

2. The students are lazy to study grammar especially in conjunction

3. English teacher does not apply the varieties of teaching strategy

C. The Limitation of Study

There are many ways to motivated students' mastery at co-ordinating subordinating, and correlative conjunction in speech. The research limits this study only about the teaching of conjunction by using Berlitz Method. So, what is the effect of Berlitz Method in learning conjunction. The method and materials are employed at the Second year class of senior high school in 2017/2018 academic year.

D. The Formulation of Problems

Based on the background of the study, the research problem of this study is formulated as the following:

1. What is the effect of applying Berlitz Method On students' conjunction mastery?

2. Is there any significantly affect of applying Berlitz method on students' conjunction mastery?

E. The Objectives of Study

The aims of the study are :

1. To know the effect of applying Berlitz Method on students' conjunction mastery.

2. To know there is any significantly affect of applying berlitz method on students' conjunction mastery.

F. The Significances of Study

The findings of this study are supposed to be useful :

1. Theoretical function :

   a. As one of the suggestion for curriculum achiever at conjunction as the class level

   b. As one of the alternative method for the English teachers to teach in the classroom.

   c. To motivate the researcher in mastering the English grammar

2. Practical Function :

   a. As one of the alternative strategies for the English teachers in teaching grammar

   b. To make the students more interested and motivated in learning their grammar.

   c. To enhance the researcher's English mastery in learning grammar

CHAPTER II

THEORETICAL REVIEW

A. Theoretical Framework

A research is considered as a scientific way to discover a new fact to get additional information. In conducting a research, theories are needed to explain some concept applied in the research concerned. The following terms are used to some basic theories in the relation to the study.

2.1. Conjunction

Conjunctions connect words or groups of words to each other. There a re three kinds of conjunctions: coordinating conjunctions, correlative conjunctions, and subordinating conjunctions.[3]

1) Coordinating Conjunctions

   a) Coordinating conjunctions are conjunctions which connect two equal parts of a sentence

   b) Coordinating conjunctions, also called coordinators, are conjunctions that join two or more of independent clauses

   c) Co-ordinate Conjunctions, which join two independent sentences

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[3] http://grammar.yourdictionary.com/parts-of-speech/conjunctions/what-is-a-conjunction.html accessed on Sunday, 12th December, 2016 at 7.18 pm

d) Coordinating conjunctions must connect the same parts of speech— two or more nouns, pronouns, verbs, adjectives, prepositions, conjunctions, phrases, or clauses.

The most common coordinating conjunctions are *for, and,nor, but ,or, yet and, so*.

Example sentences:

Patricia *and* sity are neighbours

He worked hard *bu*t he failed[4]

Please print *or* type the information on the application form.

Her arguments were easy to ridicule *yet* hard to refute.

It was raining, *so* the game was cancelled

I hate to waste a drop of gas, *for* it is very expensive these days.

Don't go for the fresh air *nor* really for the ducks. Honestly, I just like soccer

2) **Subordinating Conjunctions**

a) Subordinating conjunctions connect two parts of a sentence that are not equal.[5]

b) Subordinating conjunctions, also called subordinators, are conjunctions that introduce a dependent clause.

c) Subordinate Conjunctions, which join a principal sentence to another that depends upon it for its full meaning.

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[4] Marcella Frank, *Modern English a practical reference guide* (United States of America prentice-hall, inc. 1972)p, 109
[5] Fithriani Rahmah, *English Grammar* (Medan : Ciptapustaka Media Perintis, 2010) p,105

d) Subordinating conjunctions introduce adverb clauses and signal the relationship between the adverb clause and another clause, usually an independent clause.

The subordinating conjunctions are: *after, although, as, as if, because, before, if, in order that, once, since, so that, than, though, unless, until, when, where, while.*

Example sentences:

My grandmother began traveling *after* she sold her house.

Although I'm not rich, I enjoy my life

I jumped *when* the fire alarm went off.

Once sales improve, the company will be able to pay its bills

He will stand still *until* she opens the door

I can not go to school *because* I am ill

She is beautiful *but* dumb[6]

I will come home straight away *if* i**t** starts snowing

He used his umbrella *as* a weapon

Since I couldn't go, my job was lost

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[6] Satrio Nugroho, *Practical complete English Grammar* (Surabaya : Penerbit Kartika2012),p. 207

I read that chapter several times *in order that* I could answer the questions correctly.

I will study actievely *so that* I can pass the examination.

I will study medicine for six years, *then* I will be a doctor

Although he was angry, he listened to me patiently.[7]

Though was surprised at the result, she was pleased with what she had done

3) **Correlative Conjunctions**

a) Correlative conjunctions are pairs of conjunctions that work together[8]

b) Correlative conjunctions join equal elements (parts of speech or phrases).

c) Correlative conjunctions are sort of like tag-team conjunctions. They come in pairs, and you have to use both of them in different places in a sentence.

Conjunctions come in pairs. They are:

Both...and	Just as...so
Not only...but also	Either...or
Neither...nor	Whether...or.
Rather / than	As............as

[7] Maba Ghubron, *Petunjuk Menguasai Bahas Inggris* (Bandung : Cv. Yramawidya, 2009), p. 215-219

[8] eslus.com/Lessons/Grammar/Pos/pos8.htm accessed on Sunday, 16th December, 2016 at 7.18 pm

Example sentences :

Both Bechtel *and* Kaiser submitted bids on the project.

Maisha *not only* sent a card *but also* visited me in the hospital.

Diana is *as* beautiful *as* her sister

She loves *both* swimming *and* running

Either nisa *or* her mother is a scientist[9]

The main is *neither* handsome *nor* faithful

I see you're in the mood *not* for dessert *but* appetizers.

We can have either tripe or liver[10]

His choise of college was *either* athletics *or* law.[11]

2.2. Berlitz Method

The Berlitz Method was first developed by Maximilian Berlitz in 1878. The Berlitz method is an imitation of the natural process by which a child learns its mother tongue. Berlitz helped revolutionize learning by introducing one of the first forms of the "direct method", which was based upon the "Natural Method".

Direct method puts pressure on auditory skills and speech, also reject the way or translation method. Direct method emphasized the auditory skills, speaking pass through direct hearing the target language, to try it in interaction[12]

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[9] http://www.gingersoftware.com/content/grammar rules /conjunctions /coordinating-conjunction/ accessed on Sunday, 12th December, 2016 at 7.18 pm

[10] Sholihatul Hamidah Daulay, *Let's study English* (Bandung : CitapustakaMedia2007),p. 25

[11] Utami Dewi, *How to write* (Medan : La-Tansa Press, 2013), p. 98

According to Wilga M Rivers, the goal of direct method which has the same goal as a berlitz Method is : to develop the ability to think in language whether conversing, reading, or writing.[13] The main principle behinds the method (Berlitz) is that all instruction is given in the target language.Moreover, Mr. Yasir Burhan noted as : The purpose of learning foreign language in the school is growing students' foreign language skill. To grow it, they did :

a. To communicate the foreign language

b. To comprehend the foreign and culture language

c. To learn science and foreign culture pass through the book which was written in foreign language at their study[14] (purpose of foreign language teaching in our schools is to cultivate skills in foreign languages to pipils that he can grow:

a. Comunicate with the foreign language

b. To know and understand the foreign language and culture

c. Studying science and foreign culture through books written in a foreign language in order to study.

Based on the definition above, it can be seen that really important to teach foreign language to bring the students in the real contexts of target language it's self and additionally, the Berlitz Method has always presented language in context of real-life situation, with extra targeted practice of grammar and vocabulary.

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[12] S.U.Subyakto Nababan, *Metode Pengajaran Bahasa Inggris Dahulu, Sekarang Dan Masa depan* (Jakarta. Seminar methodology pengajaran bahasa inggris SMP-SMA di jakarta, 1983), p. 3

[13] Wilga M. Rivers, *Teaching Foreign Language Skills*, (London:the University of Chicago P ress 1968), p. 18

[14] Yasir Burhan, *Politik Bahasa Natural dan Pengajaran Bahasa , dalam Amran Halim Politik Bahasa Nasional* (Jakarta : P.N. Balai Pustaka, 1984), p. 76

Today, there are a variety of derivative methods and theories which find their beginnings in the natural and communicative elements that were pioncered by Berlitz. The Berlitz Method uses a variety of intruction techniques which address different learning styles and maintains a balance between fluency and accuracy that is consistent with the needs of each student. To ensure that students reach their language learning goals. Berlitz provides professional guidance on learning strategies and focuses on motivating students to actively participate in the learning process.

As we know that the student can understand Conjunction if teachers explain the subject used good Method in explain it. Otherwise, student are like malleable, their ability influenced thought learning. As in Holy Qur'an Surah An-Nahl : 78 said

وَاللَّهُ أَخْرَجَكُمْ مِنْ بُطُونِ أُمَّهَاتِكُمْ لَا تَعْلَمُونَ شَيْئًا وَجَعَلَ لَكُمُ السَّمْعَ وَالْأَبْصَارَ وَالْأَفْئِدَةَ لَعَلَّكُمْ تَشْكُرُونَ (78)

Translation :

It is He who brought you forth from the wombs of your mother when you knew nothing, and he gave you hearing, sight and intelligence and affection, that you may give thank to Allah.

From these verse, we can take Conclusion that the man born purely, and their environment especially their parents influenced their deed and characters in daily activity. In other word, to know something, to know everything and to

comprehending Conjunction is needed Method, because using Method can improve the man or student ability in Comprehending Conjunction.

2.3. The Characteristics of Berlitz Method

According to Maximilian Berlitz, that Berlitz method has some characteristic which is the method only focuses on :

1. Use English language as a communication tool in learning process.

2. Berlitz Method has always presented language in context of real-life situations, with extra targeted practice of grammar and everyday vocabulary.

3. Berlitz students learn through listening and speaking, supported by reading and writing.

4. Visual aids are used to teach vocabulary

5. Particular attention is placed on the accuracy of pronunciation and grammar

6. A systematic approach is developed for comprehension and oral expression

7. Berlitz provides professional guidance on learning strategies and focuses on motivating students to actievely participate in the learning process. [15]

As a mention before that Berlitz Method are modified of Direct Method/ Natural Method. The method is subsequently modified by Maximilian Berlitz with the load characteristics of Direct Method paraphrase. Moreover Richards and Rodgers noted as :

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[15] http://blog.tjtaylor.net/method-direct-grammar/ accessed on Sunday, 12th December, 2016 at 7.18 pm

The natural language learning principles provided the foundation for what came to be known as the direct method. Which refers to the most wiedly known of the natural methods. It became widely known in the US through it use by Sauveur and Maximilian Berlitz in successful in commercial language schools (Berlitz in fact, never use the term; Sauveur and Maximilian Berlitz referred to the method used in school as the Berlitz Method) in practice it stood for the following principles and procedure :

a. Classroom instructions are conducted exclusively in the target language.

b. Only everyday vocabulary and sentences are taught.

c. Oral communication skills are built up in a carefully graded progession organized around question-and-answer exchanges between teachers and students in small, intensive classes.

d. Grammar is taught inductively

e. New teaching points are introduced orally

f. Concrete vocabulary is taught through demonstration, objects, and pictures: abstract vocabulary is taught by association of ideas.

g. Both speech and listening comprehension are taught.

h. Correct pronunciation and grammar are emphasize.

i. Student should be speaking at least 80% of the time during the lesson.

j. Students are taught from inception to ask questions as well as answer them

These principles are seen in the following guidelines for teaching oral language, which are still followed in contemporary Berlitz school.

Never translate   : demonstrate

Never explain   : act

Never make a speech   : ask question

Never imitate mistakes   : correct

Never speak with single words   : use sentence

Never speak too much   : make students speak much

Never use the book   : use your lesson plan

Never jump around   : folow your plan

Never go too fast   : keep the face of the student

Never speak too slowly   : speak normally

Never speak too quickly   : speak normally

Never speak too loudly   : speak normally

Never be impatient   : take it easy

2.3.1 The Steps of Berlitz Method

The following steps of Berlitz method in teaching grammar which researcher use to teach conjunction are:

Step 1 : introduce the concept of a conjunction together with what the benefits for students are. Tell them that conjunction would be helpful to explain something that related to the time and occurrence.

Step 2 : explain the major components of conjunction. A teacher needs to give the interactive instruction for conjunction componenet clearly. Build questioning to students before of after teaching conjunction to construct their motivation or check their mastery in conjunction. After that, let them fill out section of the worksheet.

Step 3 : when students commit erors, direct them to recheck the components of conjunction using guidance question even modeling to help them come up with an appropriate response.

Step 4 : The teacher brings the students in the real contexts of the target language it's self and additionally, presented language in context of real-life situations, with extra targeted practice of grammar and vocabulay encourage them to practice their mastery in conjunction. The theory which is finds beginnings in the natural and communicative elements. Then give specific praise to students for appropriately identifying conjunction.

Step 5 : After students are able to use conjunction independently, ask them through selected stories and complete the conjunction worksheet on theirs. Check students' responses and conference individually with those students requiring additional guidance and support.

Step 6 : give students an evaluation. It is necessary to check their grammar comprehension of a story using a printed test to gain working individually. [16]

2.4 The Advantage and Disadvantage of Berlitz Method

Berlitz Method has many advantages. Some advantages of Berlitz Method are:

a. The emphasiz placed on training lessons heard (capture) and speaks (produce) language being studied, and then this method is great for oral language learning purposes.

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[16] Berlitz, *The Berlitz Method (* M. D. Berlitz : Newyork, 1909), p. 3

b. Since the learner has obtained a good basic oral language, so this method is also good for the written language. Compared with the method of translation, children will more easily learn to read and write with this method.

c. Teachers who know only the language to be taught that alone will be able to teach classes the aspect of the learning is different mother tounges, like most schools are located in the cities.

   The disadvantages from this method are:

a. Because of all the lesson given orally in a language that is taught, the teacher must fully fluent (master) to speak in the language. In practice this requirement is generally difficult to be fufilled.

b. The number of learners in a class should not be large.

c. Demonstration lessons needed to explain very helpful teacher, especially if teachers have to teach a lot. A part from that another danger, that the realization of the learner may be different than expected. So, it is possible lessons to be turned into a play joke that is teachers who act as the main perpetrator.

d. Often provide information and demonstrate means wasting time, being able to walk more rapidly and misunderstandings can be avoided and the accuracy of teachers can be reduced.

From the explanation above, it is clear that Berlitz Method is a method which used target language as a mean of communication. The principles of the method are provided the foundation for what came to be known as the direct method, which refers to the most widely known of the natural methods.

Berlitz Method has many benefit for students to improve their ability in the target language as a naturally by focusing on motivating students to actively participate in the learning process, they can understand and more able in the target language in it.

B. Related Study

Dian ayustika (2010) has done a research on the title "The Effect of Using Guiding Questions on the Students' Achievement in Writing Descriptive Paragraph at SMP Azizi Medan. The main objective of the research was to find out the significant effect of using guiding questions on students' achievement in writing descriptive paragraph. The population of this research was taken from the second year students of SMP Azizi, which consist of two classes. The total number of students in each group, 30 students for experimental group and the other 30 students for control groups. The experimental group was taught by using guiding questions method, while the control group was taught without using guiding questions method. The researcher used a writing test to collect the data. The test consisted of two types, namely pre-test and post-test. T observed was 4.53 and t-table was 2.00 (p: 0.05). The result of the data analysis shows that the value of t-table 4.53>2.00 (p: 0.05). it can be concluded that guiding questions has significant effect on the students achievement in writing descriptive paragraph and it means the Ha was accepted, the hypothesis alternative that made by the researcher was "there is significant effect of using guiding questions on the students' achievement in writing descriptive paragraph".

Sri Agus Murniasih (2015) has done a research on the title "The Effect of Peer Review Strategy on the Students' Achievement in Writing Descriptive Text". This study was conducted to know the effect of applying Peer Review Strategy on the students' achievement in writing descriptive paragraph. It was conducted by using experimental research method. This research design was conducted pre-test, post-test in experimental and control group. The population of this research was the eight (VIII) grade students of SMP IT IQRA' Medan. The sample of this research was taken by lottery technique. They were in class VIII-1 by experimental group and the class VIII-2 by control group. The experimental group was taught by using Peer Review Strategy while the control group was given no treatment. The instrument used to collect the data was writing essay test. The data were analyzed by using t-test formula. The result showed that the value of t-observed was higher than the value of t-table (3,55> 2,05 (α = 0,05)) with the applying Peer Review Strategy on the students' achievement in writing descriptive paragraph. So, the alternative hypothesis (Ha) was accepted.

C. Conceptual Framework

Berlitz Method is one of the method which can be used to increase and to improve the students' mastery in conjunction. The Berlitz Method only focuses on using language as communication tool in the class. By applying this method, hopefully the students' mastery at conjunction can be improved. Because many students face some difficulties in learning conjunction without applying many methods. One of the approriate method is using Berlitz Method, as the result the students can understand well about conjunction, So the student will be confident to speak English totally.
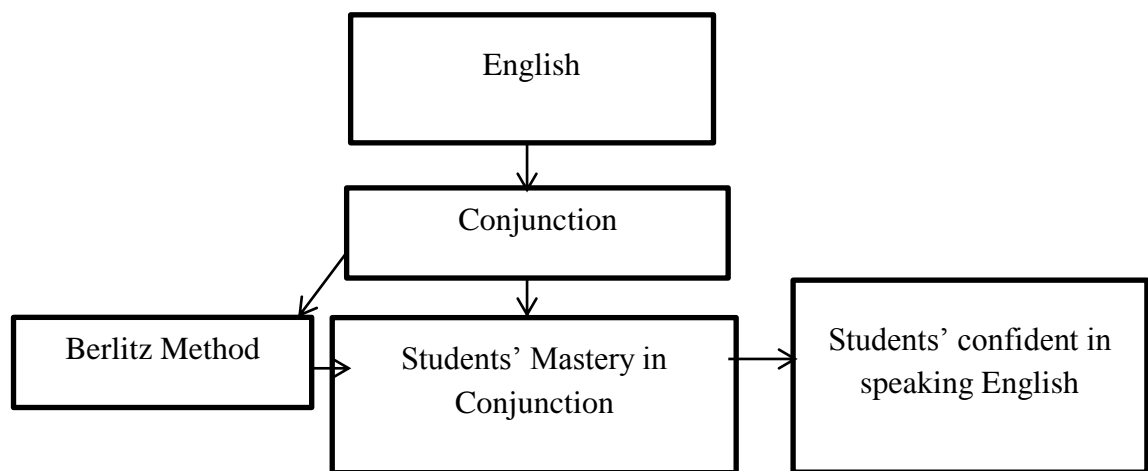
D. Hypothesis

Based on the theoretical framework and conceptual framework, the writer formulated two hypothesis in this research :

Ha :   There is significant effect of applying berlitz method on students' conjunction mastery at Islamic Boarding School Darul Hikmah TPI Medan.

Ho :   There is no significant effect of applying berlitz method on students' conjunction mastery at Islamic Boarding School Darul Hikmah TPI Medan.

CHAPTER III

RESEARCH METHOD

A. Location and Time

This research was conducted at Islamic Boarding School Darul Hikmah TPI Medan. The Location of research is on Jl. Pelajar No.44 Medan at the academic year 2017/2018. The reason for choosing this school because the researcher found the problem that the students grammar were still low and the same research never been conducted there.

B. Population and Sample

1. Population

According to Suharsimi Arikunto said that population is the whole subject of the research.[17] Another ideas was mentioned by Sudjana, he said that population is totally of all possible values, the result of calculation for certain characteristic regarding a set of complex and clear objects to be studied.[18] So, the population is total number of subjects that should be observed in this research.

The population of this research in 2017/2018 was the second senior high school students of Islamic Boarding School Darul Hikmah TPI Medan. Which consisted of two department classes with total number 40 students. There are two classes; class XI-A consist of 20 students, and class XI-B consist of 20 students .

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[17] Suharsimi Arikunto, *Prosedur Penelitian : Suatu Pendekatan Praktek* ,(Jakarta :PT Rineka Cipta, 1993) ,p. 130.
[18] Sudjana, *Metode Statistik*, (Bandung : Tarsito, 1984), p.5

2. Sample

According to Suharsimi Arikunto sample is small proportion of a population selected for observation and analysis.[19] From the statement above the writer can conclude that the sample the large numbers that is population and the group that is investigate is sample.In this research, the samples were taken by using cluster random sampling. In doing the research, researcher got two classes as the sample, class XI-A consist of 20 students, X-B consist of 20 students. The writer took each class 20 students at class XI.

C. Operational Definitions

To avoid the misinterfretation of terms used and to focus on the variable of the research, it is necessary to provide the operational definitions of variables in this thesis, so the writer makes definition of the variable, as follow:

1) The effect of applying Berlitz Method is the influence of Berlitz Method which used English totally in learning process. In order to student master English language well.

2) The students' mastery in using conjunction is the students' intelligence to understand all about of conjunction in implicating and theory. The mastery of students can be seen in their behavior in teaching learning process

   The indicators of the students' mastery in using conjunction are :

   a. The students are able to explain the definition of conjunction

   b. The students are able to identify the kinds and usage of conjunction.

---

[19] Suharsimi Arikunto, op.cit,p. 131.

c. The students are able to make the example of conjunction in a sentences with each their kinds.

D. Research Design

This study is conduct by using experimental design. There are two groups of sample namely experimental group and control group. This research consist of two variables and two groups. Those two variables are Berlitz Method as independent variable and Conjunction text as dependent variable. Both of groups are give the pre-test and post test, but two groups get different treatment. The experimental group is teach by Berlitz Method while the control group is teach by conventional methods or without Berlitz Method. Below is the illustration of the design of this study:

Table 3.1
Research Design

Class	Pre-test	Treatment	Pot-test
Experimental	√	Berlitz Method	√
Control	√	Conventional Technique	√

E. The Instrument of Collecting Data

Instrument for collecting data is usually important in every scientific research. In this research, the researcher used Conjunction test as the instrument for collecting data and it will administere to both experimental and control groups. The Conjunction test will give to find out the score of experimental and control group and to see whether the students' Conjunction ability after teach Berlitz Method in experimental group is significant or not.

F. The Technique of Data Collecting

3.1. Pre-test

A pre-test is administrated to the sample before doing the treatment. The pre-test is given to the experimental and control group. The students answer the Conjunction test that is given by the researcher. The purpose of pre-test to know the effect of applying Berlitz Method on the students' achievement in experimental class and there is no applying Berlitz Method in control class.

3.2.Treatment

The treatment is given to experimental class and control class. Experimental class is taught by Berlitz Method and control is taught by Conventional or without Berlitz Method

3.3.Post-test

After the treatment is done and pre-test is given to the students. The post-test is given after the treatment is completed which is done in two meetings. This test is meant to find out the differences in mean scores of both the control and experimental group. It is used to know the effect of Berlitz Method on the experimental group.

G. Technique of Data Analysis

A t-test formula use in this research is to prove the hypothesis. It is aim to analyze the significant differences between the means score in experimental and control groups. The formula of the t-test is:

$$t = \frac{x_1 - x_2}{s\sqrt{\dfrac{1}{n_1} - \dfrac{1}{n_2}}}$$

Where:

x_1 = Average value of sample owning of the first group

x_2 = Average of sample owning of the second group

S = Marger of standard deviation

n_1 = Nominal of sample owning of the first group

n_2 = Nominal of sample owning of the second group

1. The Normality of Test

Normality test of data the students' interest in learning English at tenth grade who are taught by using Berlitz Method. Normality of the data would be found by using Calculating average and standard deviationby this following formula:

a. Perception X_1, X_2... xn made permanent number zi, z_1, z_2... zn by using

formula $Z1 = \dfrac{x1 - x}{s}$

b. To every this permanent number and by using enlist of permanent normal distribution, and the calculating the opportunity *F (Zi) = P(Z<Zi)*

c. Here, after calculating a proportion z1, z2,..zn, the smaller equals to zi.

d. Counting the difference F(Zi)-S(Zi), and then determine is absolute price

e. Taking the biggest price among absolute price of the difference and mentioning the price by Lo

f. If Lo < L obtained from the critical value test, the Liliefors with the real level a = 0,05, hence the distribution is normal

2. The Validity of Test

A test is valid if it is measures what it purpose measure. Here, valid is the materials or the contents of the test which had been arranged as to be possible to measure all what had already intended though his general and specific objectives and also the test was representative enough to measure the progress of the students for what they had studied before.

To prove whether the test is valid or not. I use the correlation product moment to know the validity of the test in this thesis. The validity will used by using product moment formula which is stated in Suharsimi Arikunto.

$$rxy = \frac{N\sum XY - (\sum X)\sum Y)}{\sqrt{(N\sum x^2 - (\sum X)^2)(N \sum y^2 - (\sum y)^2)}}$$

note : rxy= the coefficient of correlation product moment

N = Number of sample

X = Variable the effect of applying berlitz method

Y = Variable of students' conjunction mastery

3. The Homegeneity of Test

To test whether the variants of both homogenous samples, variants equality test, that is:

$$F = \frac{the\ biggest\ variants}{the\ smallest\ variants}$$

Here after comparing to the $F_{table,}$ its criterion is:

If $F_{count} < F_{table,}$ then both samples are homogeneus

CHAPTER IV
DATA ANALYSIS AND RESEARCH FINDINGS

A.   Description of Data

This study was conducted by applying an experimental research. There were two groups in this research, namely experimental and control group. This research applied a writing test which the total score is 100. The pre test was given before the treatment and the post test was given after the treatment. The researcher gave the treatment to students in the experimental group by Berlitz Method while control group without applying Berlitz Method.

After conducting the research, the researcher got the data of students' scores in pre test and post test from both experimental and control group.

Table IV. The Score of Pre Test and Post Test of Experimental Group

No	Students' Initial	Pre Test	Post Test
1	AAA	55	75
2	AAAF	60	80
3	AALM	55	75
4	BFS	60	80
5	ERA	60	80
6	FRS	55	70
7	K	60	80
8	KA	55	75
9	KJS	60	80
10	KW	55	75
11	M	55	75
12	MH	60	80
13	MHH	60	80
14	MS	55	75
15	PW	55	75
16	RA	60	80
17	RS	60	80

No	Students' Initial	Pre Test	Post Test
18	RWS	55	75
19	SAP	60	80
20	SR	60	80
Total		$\sum = 1155$	$\sum = 1555$
Mean		**57.75**	**77.75**

Based on the table above, the student's achievement in Conjunction at experimental group showed the lowest score of pre-test was 55, and the highest score of pre-test was 60 and the mean of pre-test was 57.75. On the other hand the lowest score of post-test was 75, and the highest score of post-test was 80 and the mean of post-test was 77.75

Table V. The Score of Pre Test and Post Test of Control Group

No	Students' Initial	Pre Test	Post Test
1	ACP	40	60
2	AD	50	65
3	ADS	50	65
4	AM	55	70
5	ARP	55	70
6	BS	50	65
7	CZH	40	60
8	CA	40	60
9	ED	40	60
10	IA	50	65
11	JRB	55	70
12	KA	50	65
13	KL	50	65
14	MA	40	60
15	MR	40	60
16	M	50	65
17	PS	40	60

18	RDS	40	60
19	SR	50	65
20	TH	55	70
Total		$\sum = 930$	$\sum = 1275$
Mean		**46.5**	**63.75**

Based on the table above, the student's score in conjunction in control group showed the lowest score of pre-test was 40, and the highest score of pre-test was 70 and the mean of pre-test was 46.5. On the other hand the lowest score of post-test was 60, and the highest score of post-test was 70 and the mean of post-test was 63.75

Based on the explanation above, it shows that the students' score in experimental group was higher than student's score in control group, where in pre-test (46.5) and the score in post-test (63.75). The total score of the mean score in experimental and control group showed that there was significant effect in improvement of student's score between pre-test and post-test.

B.   Data Analysis
1.   Normality Testing

Normality testing used to determine if a data set is well-modeled by a normal distribution and to compute how likely it is for a random variable underlying the data set to be normally distributed.

1.1   Normality Testing of Experimental Group

Table VI. Frequency Distribution of Pre Test in Experimental Group

No	X_i	F_i	F_iX_i	X_i^2	$F_iX_i^2$
1	55	9	495	3025	27225
2	60	11	660	3600	39600
Total		**20**	**1155**	**6625**	**66825**

Based on the data above, the result of $F_iX_i^2$ is 66825 and F_iX_i is 1155. Then the following is the calculation of mean, variant and standard deviation.

a. **Mean**

$$\overline{x} = \frac{\sum Fi\ Xi}{\sum Fi}$$

Where:

$\overline{x}$	= Mean of variable x
$\sum F_i X_i$	= Total number of score
$\sum F_i$	= Number of sample

So,

$$\overline{x} = \frac{\sum Fi\ Xi}{\sum Fi}$$

$$= \frac{1155}{30}$$

$$= 57.75$$

b. **Variant**

Where:

S^2	= Variant
N	= Number of sample

So,

$$S^2 = \frac{n\sum FiXi^2 - (\sum FiXi)^2}{n(n-1)}$$

$$= \frac{20 \times 66825 - (1155)^2}{20(20-1)}$$

$$= \frac{2649600 - 2560000}{20(19)}$$

$$= \frac{2475}{380}$$

$$= 6.513$$

c. **Standard Deviation**

$$S = \sqrt{S^2}$$

$$= \sqrt{6.513}$$

$$= 2.552$$

After getting the calculation of mean, variant and deviation standard, then the next step is to found out the normality of the test. It means that

the test was given to the students is observed by Liliefors test. The calculation of normality Conjunction text can be seen in the following table:

Table VII. Normality Testing of Pre Test in Experimental Group

No	Score	Z_i	$F(Z_i)$	$S(Z_i)$	$F(Z_i) - S(Z_i)$
1	55	18.9	0.1423	0.45	-0.3077
2	55	18.9	0.1423	0.45	-0.3077
3	55	18.9	0.1423	0.45	-0.3077
4	55	18.9	0.1423	0.45	-0.3077
5	55	18.9	0.1423	0.45	-0.3077
6	55	18.9	0.1423	0.45	-0.3077
7	55	18.9	0.1423	0.45	-0.3077
8	55	18.9	0.1423	0.45	-0.3077
9	55	18.9	0.1423	0.45	-0.3077
10	60	20.9	0.3106	1.00	-0,6894
11	60	20.9	0.3106	1.00	-0,6894
12	60	20.9	0.3106	1.00	-0,6894
13	60	20.9	0.3106	1.00	-0,6894
14	60	20.9	0.3106	1.00	-0,6894
15	60	20.9	0.3106	1.00	-0,6894
16	60	20.9	0.3106	1.00	-0,6894
17	60	20.9	0.3106	1.00	-0,6894
18	60	20.9	0.3106	1.00	-0,6894
19	60	20.9	0.3106	1.00	-0,6894
20	60	20.9	0.3106	1.00	-0,6894
Total	**1555**	$L_o = -0.3077$			
Mean	**57.75**	$L_t = 0.190$			

a. **Finding Z score**

Formula: $Z_i \, 1 = \frac{Xi - \bar{\chi}}{s}$

$Z_i \, 1 = \frac{55 - 6.513}{2.552} = 18.9$

$$Z_i\,2 = \frac{60 - 6.513}{2.552} = 20.9$$

b. **Finding $S(Z_i)$**

$$S(Z_i) = \frac{F\ Kum}{N}$$

$$\frac{9}{20} = 0.45$$

$$\frac{20}{20} = 1.00$$

From the table above, it can be seen that Liliefors observation or L_o = -0.3077with n = 20 and at real level α= 0.05 from the list of critical value of Liliefors table L_t = 0.190. It is known that the coefficient of L_o (-0.3077) < L_t (0.190). So it can be concluded that the data distribution of the student's ability in Conjunction is **normal.**

Table VIII. Frequency Distribution of Post Test in Experimental Group

No	X_i	F_i	F_iX_i	X_i^2	$F_iX_i^2$
1	75	9	675	5625	50625
2	80	11	880	6400	70400
Total		**20**	**1555**	**12025**	**121025**

Based on the data above, the result of $F_iX_i^2$ is 121025 and F_iX_i is 1555. Then the following is the calculation of mean, variant and standard deviation.

a. **Mean**

$$\overline{x} = \frac{\sum Fi\ Xi}{\sum Fi}$$

Where:

$\overline{x}$ = Mean of variable x

$\sum F_iX_i$ = Total number of score

$\sum F_i$ = Number of sample

So,

$$\overline{x} = \frac{\sum Fi\ Xi}{\sum Fi}$$

$$= \frac{1555}{20}$$

$$= 77.75$$

b. Variant

Where:

S^2 = Variant

N   = Number of sample

So,

$$S^2 = \frac{n\sum FiXi^2 - (\sum FiXi)^2}{n(n-1)}$$

$$= \frac{20 \times 121025 - (1555)^2}{20(20-1)}$$

$$= \frac{2420500 - 2418025}{20(19)}$$

$$= \frac{2475}{380}$$

$$= 6.513$$

c. Standard Deviation

$$S = \sqrt{S^2}$$

$$= \sqrt{6.513}$$

$$= 2.55$$

After getting the calculation of mean, variant and deviation standard, then the next step is to found out the normality of the test. It means that the test was given to the students is observed by Liliefors test. The calculation of normality Conjunction text can be seen in the following table:

Table IX. Normality Testing of Post Test in Experimental Group

No	Score	Z_i	$F(Z_i)$	$S(Z_i)$	$F(Z_i) - S(Z_i)$
1	75	-1.07	0.1446	0.45	-0.3054
2	75	-1.07	0.1446	0.45	-0.3054
3	75	-1.07	0.1446	0.45	-0.3054
4	75	-1.07	0.1446	0.45	-0.3054
5	75	-1.07	0.1446	0.45	-0.3054
6	75	-1.07	0.1446	0.45	-0.3054
7	75	-1.07	0.1446	0.45	-0.3054

8	75	-1.07	0.1446	0.45	-0.3054
9	75	-1.07	0.1446	0.45	-0.3054
10	80	-0.88	0.3106	1.00	-0.6894
11	80	-0.88	0.3106	1.00	-0.6894
12	80	-0.88	0.3106	1.00	-0.6894
13	80	-0.88	0.3106	1.00	-0.6894
14	80	-0.88	0.3106	1.00	-0.6894
15	80	-0.88	0.3106	1.00	-0.6894
16	80	-0.88	0.3106	1.00	-0.6894
17	80	-0.88	0.3106	1.00	-0.6894
18	80	-0.88	0.3106	1.00	-0.6894
19	80	-0.88	0.3106	1.00	-0.6894
20	80	-0.88	0.3106	1.00	-0.6894
Total	**1555**	— $L_o = -0.3054$			
Mean	**77.75**	$L_t = 0.190$			

a. **Finding Z score**

Formula: $Z_i\ 1 = \dfrac{Xi - \bar{x}}{s}$

$Z_i\ 1 = \dfrac{75 - 77.75}{2.55} = -1.07$

$Z_i\ 2 = \dfrac{80 - 77.75}{2.55} = -0.88$

b. **Finding $S(Z_i)$**

$S(Z_i) = \dfrac{F\ Kum}{N}$

$\dfrac{9}{20} = 0.45$

$\dfrac{20}{20} = 1.00$

From the table above, it can be seen that Liliefors observation or L_o = -0.3054 with n = 20 and at real level α= 0.05 from the list of critical value of Liliefors table L_t = 0.190. It is known that the coefficient of L_o (-0.3054) < L_t (0.190). So it can be concluded that the data distribution of the student's ability in Conjunction is **normal.**

1.2 Normality Testing of Control Group

Table X. Frequency Distribution of Pre Test in Control Group

No	X_i	F_i	F_iX_i	X_i^2	$F_iX_i^2$
1	40	9	360	1600	14400
2	50	7	350	2500	17500
3	55	4	220	3025	12100
Total		**20**	**930**	**7125**	**44000**

Based on the data above, the result of $F_iX_i^2$ is 44000 and F_iX_i is 7125. Then the following is the calculation of mean, variant and standard deviation.

a. **Mean**

$$\bar{x} = \frac{\sum Fi\,Xi}{\sum Fi}$$

Where:

$\bar{x}$ = Mean of variable x

$\sum F_iX_i$ = Total number of score

$\sum F_i$ = Number of sample

So,

$$\bar{x} = \frac{\sum Fi\,Xi}{\sum Fi}$$

$$= \frac{930}{20}$$

$$= 46.5$$

b. **Variant**

Where:

S^2 = Variant

N   = Number of sample

So,

$$S^2 = \frac{n\sum FiXi^2 - (\sum FiXi)^2}{n(n-1)}$$

$$= \frac{20 \times 44000 - (930)^2}{20(20-1)}$$

$$= \frac{880000 - 864900}{380}$$

$$= \frac{58676}{870}$$

$$= 39.73$$

c. **Standard Deviation**

$$S = \sqrt{S^2}$$

$$= \sqrt{39.73}$$

$$= 6.30$$

After getting the calculation of mean, variant and deviation standard, then the next step is to found out the normality of the test. It means that the test was given to the students is observed by Liliefors test. The calculation of normality Conjunction text can be seen in the following table:

Table XI. Normality Testing of Pre Test in Control Group

No	Score	Zi	F(Zi)	S(Zi)	F(Zi) - S(Zi)
1	40	-1.06	0.1515	-1.03	-0.5085
2	40	-1.06	0.1515	-1.03	-0.5085
3	40	-1.06	0.1515	-1.03	-0.5085
4	40	-1.06	0.1515	-1.03	-0.5085
5	40	-1.06	0.1515	-1.03	-0.5085
6	40	-1.06	0.1515	-1.03	-0.5085
7	40	-1.06	0.1515	-1.03	-0.5085
8	40	-1.06	0.1515	-1.03	-0.5085
9	40	-1.06	0.1515	-1.03	-0.5085
10	50	-0.55	0.2080	-0.55	-0.342
11	50	-0.55	0.2080	-0.55	-0.342
12	50	-0.55	0.2080	-0.55	-0.342
13	50	-0.55	0.2080	-0.55	-0.342
14	50	-0.55	0.2080	-0.55	-0.342
15	50	-0.55	0.2080	-0.55	-0.342
16	50	-0.55	0.2080	-0.55	-0.342

17	55	1.34	0.4082	1.34	-0.9318
18	55	1.34	0.4082	1.34	-0.9318
19	55	1.34	0.4082	1.34	-0.9318
20	55	1.34	0.4082	1.34	-0.9318
Total	930	$L_o = -0.342$			
Mean	46.5	$L_t = 0.190$			

a. **Finding Z score**

Formula: $Z_i \ 1 = \frac{Xi - \bar{x}}{s}$

$Z_i \ 1 = \frac{40 - 46.5}{6.30} = -1.03$

$Z_i \ 2 = \frac{50 - 46.5}{6.30} = -0.55$

$Z_i \ 3 = \frac{55 - 46.5}{6.30} = 1.34$

b. **Finding (Z_i)**

$S(Z_i) = \frac{F \ Kum}{N}$

$\frac{8}{30} = 0.4$

$\frac{16}{30} = 0.8$

$\frac{20}{30} = 1.00$

From the table above, it can be seen that Liliefors observation or L_o = -0.342with n = 20 and at real level α= 0.05 from the list of critical value of Liliefors table L_t = 0.190. It is known that the coefficient of L_o (-0.342) < L_t (0.190). So it can be concluded that the data distribution of the student's ability in Conjunction is **normal.**

Table XII. Frequency Distribution of Post Test in Control Group

No	X_i	F_i	F_iX_i	X_i^2	$F_iX_i^2$
1	60	9	540	3600	32400
2	65	7	455	4225	29575
3	70	4	280	4900	19600
Total		20	1275	12725	81575

Based on the data above, the result of $F_iX_i^2$ is 81575 and F_iX_i is 1275. Then the following is the calculation of mean, variant and standard deviation.

a. **Mean**

$$\overline{x} = \frac{\sum Fi\, Xi}{\sum Fi}$$

Where:

$\overline{x}$ = Mean of variable x

$\sum F_iX_i$ = Total number of score

$\sum F_i$ = Number of sample

So,

$$\overline{x} = \frac{\sum Fi\, Xi}{\sum Fi}$$

$$= \frac{1275}{20}$$

$$= 63.75$$

d. **Variant**

Where:

S^2 = Variant

N = Number of sample

So,

$$S^2 = \frac{n\sum FiXi^2 - (\sum FiXi)^2}{n(n-1)}$$

$$= \frac{20 \times 81575 - (1275)^2}{20(20-1)}$$

$$= \frac{1631500 - 1625625}{20(19)}$$

$$= \frac{5875}{380}$$

$$= 15.46$$

e. **Standard Deviation**

$$S = \sqrt{S^2}$$

$$= \sqrt{15.46}$$

$$= 3.93$$

After getting the calculation of mean, variant and deviation standard, then the next step is to found out the normality of the test. It means that the test was given to the students is observed by Liliefors test. The calculation of normality Conjunction text can be seen in the following table:

Table XIII. Normality Testing of Post Test in Control Group

No	Score	Zi	F(Zi)	S(Zi)	F(Zi) - S(Zi)
1	60	-0.95	0.1711	0.45	-0.2789
2	60	-0.95	0.1711	0.45	-0.2789
3	60	-0.95	0.1711	0.45	-0.2789
4	60	-0.95	0.1711	0.45	-0.2789
5	60	-0.95	0.1711	0.45	-0.2789
6	60	-0.95	0.1711	0.45	-0.2789
7	60	-0.95	0.1711	0.45	-0.2789
8	60	-0.95	0.1711	0.45	-0.2789
9	60	-0.95	0.1711	0.45	-0.2789
10	65	-0.31	0.1217	0.8	-0.6783
11	65	-0.31	0.1217	0.8	-0.6783
12	65	-0.31	0.1217	0.8	-0.6783
13	65	-0.31	0.1217	0.8	-0.6783
14	65	-0.31	0.1217	0.8	-0.6783
15	65	-0.31	0.1217	0.8	-0.6783
16	65	-0.31	0.1217	0.8	-0.6783
17	70	1.59	0.4441	1.00	-0.5559
18	70	1.59	0.4441	1.00	-0.5559
19	70	1.59	0.4441	1.00	-0.5559
20	70	1.59	0.4441	1.00	-0.5559
Total	**1275**	$L_o = -0.2789$			
Mean	**63.75**	$L_t = 0.190$			

a. **Finding Z score**

Formula: $Z_i\ 1 = \dfrac{Xi - \bar{\chi}}{s}$

$$Z_i\,1 = \frac{60-63.75}{3.93} = -0.95$$

$$Z_i\,2 = \frac{65-63.75}{3.93} = 0.31$$

$$Z_i\,3 = \frac{70-63.75}{3.93} = 1.59$$

b. **Finding S(Z_i)**

$$S(Z_i) = \frac{F\,Kum}{N}$$

$$\frac{9}{20} = 0.23$$

$$\frac{16}{20} = 0.33$$

$$\frac{20}{20} = 1.00$$

From the table above, it can be seen that Liliefors observation or L_o = -0.2789 with n = 20 and at real level α= 0.05 from the list of critical value of Liliefors table L_t = 0.190. It is known that the coefficient of L_o (-0.2789) < L_t (0.190). So it can be concluded that the data distribution of the student's ability in Conjunction text is **normal.**

2. Validity Testing

$$rxy = \frac{N\Sigma XY-(\Sigma X)\Sigma Y)}{\sqrt{(N\Sigma x^2-(\Sigma X)^2)(N\Sigma y^2-(\Sigma y)^2)}}$$

$$rxy = \frac{20.80950 - (1555)7270)}{\sqrt{(20.80950\ -(1552)^2\,)(20.80950-(7270)^2)}}$$

$$\frac{488515}{1377198-\mathbf{1090471}} = \frac{488515}{\mathbf{286727}} = 1.70$$

3.   Homogeneity Testing

3.1   Homogeneity Testing of Pre Test

$$F_{obs} = \frac{S_1^{\,2}}{S_2^{\,2}}$$

Where   : $S_1^{\,2}$ = the biggest variant

$S_2^{\,2}$ = the smallest variant

Based on the variants of both samples of pre-test found that:

S_{ex}^2 = 6.513   N   = 20

S_{co}^2 = 39.73   N   = 20

So:

$$F_{obs} = \frac{S^2_{ex}}{S^2_{co}}$$

$$F_{obs} = \frac{6.513}{39.73} = 0.16$$

Then the coefficient of $F_{obs} = 0.16$ is compared with F_{table}, where F_{table} is determined at real level $\alpha = 0.05$ and the same numerator dk = N - 1 = 20 - 1 = 19 that was exist dk numerator 19, the denominator dk = n - 1 (20 - 1 = 19). Then F_{table} can be calculated $F_{0.05(19,19)} = 2.15$

So $F_{obs} < F_{table}$ atau (0.16 < 2.15) so it can be concluded that the variant is homogenous.

3.2   Homogeneity Testing of Post Test

$$F_{obs} = \frac{S^2_1}{S^2_2}$$

Where   : S_1^2 = the biggest variant

                   S_2^2 = the smallest variant

Based on the variants of both samples of post-test found that:

S^2_{ex} = 65.13   N   = 20

S^2_{co} = 15.46   N   = 20

So:

$$F_{obs} = \frac{S^2_{ex}}{S^2_{co}}$$

$$F_{obs} = \frac{6.513}{15.46} = 0.03$$

Then the coefficient of $F_{obs} = 0.03$ is compared with F_{table}, where F_{table} is determined at real level $\alpha = 0.05$ and the same numerator dk = N - 1 = 20 - 1 = 19 that was exist dk numerator 19, the denominator dk = n - 1 (20 - 1 = 19). Then F_{table} can be calculated $F_{0.05(19,19)} = 2.15$

So $F_{obs} < F_{table}$ atau (0.03<2.15) so it can be concluded that the variant is homogenous.

C. Hypothesis Testing

Table XIV. Mean of Post-Test – Pre-Test in Experimental Group

No	Score Post-Test	Score Pre-Test	Decrease
1	75	55	20
2	80	60	20
3	75	55	20
4	80	60	20
5	80	60	20
6	75	55	20
7	80	60	20
8	75	55	20
9	80	60	20
10	75	55	20
11	75	55	20
12	80	60	20
13	80	60	20
14	75	55	20
15	75	55	20
16	80	60	20
17	80	60	20
18	75	55	20
19	80	60	20

20	80	60	20
Σ			**400**
Mean			**20.00**

Table XV. Mean of Post-Test – Pre-Test in Control Group

No	Score Post-Test	Score Pre-Test	Decrease
1	60	40	20
2	65	50	15
3	70	55	15
4	70	55	15
5	65	50	15
6	60	40	20
7	60	40	20
8	60	40	20
9	65	50	15
10	70	55	15
11	65	50	15
12	65	50	15
13	60	40	20
14	60	40	20
15	65	50	15
16	60	40	20
17	60	40	15
18	65	50	15
19	70	55	15
20	60	40	20
Σ			**370**

Mean	18.5

. **T-test Formula**

Experiment group   : $\overline{X}_1 = 77.75$; $S_1^2 = 2.55$; $n_1 = 20$

Control group   : $\overline{X}_2 = 63.75$; $S_2^2 = 3.93$; $n_2 = 20$

With:

$$S^2 = \frac{(n_1 - 1)S_1^2 + (n_2 - 1)S_2^2}{n_1 + n_2 - 2}$$

$$S^2 = \frac{(20 - 1)2.55 + (20 - 1)3.93}{20 + 20 - 2}$$

$$S^2 = \frac{(19)2.55 + (19)3.93}{38}$$

$$S^2 = \frac{48.45 + 74.67}{38}$$

$$S^2 = \frac{123.12}{38}$$

$$S^2 = 3.24$$

$$S = \sqrt{3.24}$$

$$S = 1.8$$

So:

$$t_{count} = \frac{\overline{X}_1 - \overline{X}_2}{S\sqrt{\dfrac{1}{n_1} + \dfrac{1}{n_2}}}$$

$$t_{count} = \frac{77.75 - 63.75}{1.8\sqrt{\dfrac{1}{20} + \dfrac{1}{20}}}$$

$$t_{count} = \frac{14}{5.685}$$

$$t_{count} = 2.462$$

From the computation above, it can be seen that $t_{observed} = 2.462$. The testing hypothesis is conducted in order to find out whether that hypothesis is accepted or rejected. The basis of testing hypothesis is that the H_a is accepted if

the $t_{observed} > t_{table}$. In this study the calculation of the scores uses t-test for the degree of freedom 38 (df = N + N - 2) at the level of significant 0.05 that the critical value is 1.684. So it can be seen that t_{table} = 1.684. (See Appendix)

After the scores were calculated, it was found that in this study the $t_{observed}$ is higher than the t_{table}. It can be seen as follow:

$t_{observed} > t_{table}(\alpha = 0.05)$ with df 38

2.462>1.684

From the result above, it shows that the alternative hypothesis (H_a) is accepted and the null hypothesis (H_0) is rejected. It means that Conjunction by using Berlitz Method affect student's achievement in Conjunction Grammar.

E. Findings

The findings of this research indicated that there was a positive effect of the students on Conjunction Mastery which was taught by applying Berlitz Method at Islamic Boarding School Darul Hikmah TPI Medan. It can be seen from the value of $t_{observation}$ =2.462>from t_{table} =1.684.

CHAPTER V
CONCLUSION AND SUGGESTION

A. Conclusions

Based on the result of the research, I conclude the following points in this research:

1. The effect of appplying Berlitz Method in Conjunction is many students got high score on 70 in their Conjunction test.

2. Yes, there is any significantly affect of applying Berlitz method on students' conjunction mastery. Because there is a positive effect of applying Berlitz Method on students's Conjunction mastery at Islamic Boarding School Darul Hikmah TPI Medan It can be seen from the value of $t_{observation} = 2.462 >$ from $t_{table} = 1.684$.

B. Suggestions

I would like to give some suggestion to readers to get benefit from this research; I hope these suggestions will be usefull for anyone in Islamic Boarding School Darul Hikmah TPI Medan :

1. For the head master suggest to the English teacher use Berlitz Method when teaching learning process, especially in Conjunction.

2. For the English teacher suggested to use Berlitz Method which was a pleasent learning condition, in the order that the students feel more motivated and interested in learning conjunction.

3. The other researcher, it is suggested to conduct futher research related to topic the study.

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APPENDIX I

PRE TEST

NAME   :

CLASS   :

1. Patricia...............sity are neighbours
   A. But   C. Yet
   B. Or   D. And

2. He worked hard..................he failed
   A. For   C. Nor
   B. And   D. But

3. Please print.......... type the information on the application form.
   A. But   C. Or
   B. And   D. Yet

4. Her arguments were easy to ridicule......... hard to refute.
   A. Yet   C. Or
   B. So   D. But

5. It was raining,.......... the game was cancelled
   A. Nor   C. Yet
   B. So   D. Or

6. My grandmother began traveling.....she sold her house.
   A. After   C. To
   B. Before   D. By

7. ....I'm not rich, I enjoy my life
   A. When   C. Once
   B. Although   D. Still

8. I jumped........the fire alarm went off..
   A. After   C. When
   B. To   D. Although

9. .... sales improve, the company will be able to pay its bills
   A. If   C. Since

B. In order to   D. Once

10. He will stand still *until* she opens the door

   A. Altough   C. Untill

   B. In order to   D. When

11. ....Bechtel...........Kaiser submitted bids on the project.

A. Both......And   C. Both.....And

B. Not only.....But Also   D. Either.....Or

12. Maisha *not only* sent a card *but also* visited me in the hospital.

A. As......As   C. Not Only..... But Also

B. Both.......And   D. Either........Or

13. Diana is *as* beautiful *as* her sister

A. Just as.....so   C. Neither.......nor

B. Whether...or.   D. As............as

14. She loves.......swimming......running

A. Both.....And   C. Neither.......nor

B. Just as.....so   D. As............as

15............ nisa..........her mother is a scientist

A. Either.....Or   C. As............as

B. Just as....So   D. Both.....And

POST TEST

1. Sammy had someone handle her passport ... he went to abroad.
a. when   c. whenever
b. before   d. Not

2. A power failure occured, ... the lamps went out.
a. then   c. for
b. so   d. whenever

3. I forgot my coat, ... i got very cold
a. so   c. for
b. as a result   d. but

4. It was raining, ... I decided not to go camping.
a. so   c. but
b. altough   d. as a result

5. The material has been cut, ... the pieces have been sewn together.
a. so   c. for
b. and   d. but

6. The mail carrier has already delivered the mail, ... the letter is not going to arrive today.
a. but   c. as
b. or   d. as a result

7. To stay ... to leave your job is your prerogative.
a. nor   c. for
b. or   d. whenever

8. Kim eats many egg whites before work out ... he wants to gain weight.
a. so that   c. for
b. because   d. as a result

9. I can trust neither the manager ... his secretary.
a. for   c. nor
b. so   d. but

10. My supervisor called him ... me to meet in his office.
a. but   c. so
b. and   d. for

11. Mr. Adam is respected for researching issues ... seeking practical solutions.
a. and   c. or
b. yet   d. for

12. The boss said yesterday ... production in this department was down fifty percent.

a.   when   c.   if

b.   that

13. You can come to my house ... you want.
a. whenever   c. before
b. while   d. as a result

14. The man drove ... he was an F-1 racer.
a. if   c. as though
b. because   d. so that

15. She cooks by herself ... her family gets the best nutrition.
a. because   c. so that
b. altough   d. as though

APPENDIX II

THE CRITICAL VALUE LILIEFORS TEST

Ukuran Sampel	Taraf Nyata (α)				
	0,01	0,05	0,10	0,15	0,20
n = 4	0,417	0,381	0,352	0,319	0,300
5	0,405	0,337	0,315	0,299	0,285
6	0,364	0,319	0,294	0,277	0,265
7	0,348	0,300	0,276	0,258	0,247
8	0,331	0,285	0,261	0,244	0,233
9	0,311	0,271	0,249	0,233	0,223
10	0,294	0,258	0,239	0,022	0,215
11	0,284	0,249	0,230	0,217	0,206
12	0,275	0,242	0,223	0,212	0,199
13	0,268	0,234	0,214	0,202	0,190
14	0,261	0,227	0,207	0,194	0,183
15	0,257	0,220	0,201	0,187	0,177
16	0,250	0,213	0,195	0,182	0,173
17	0,245	0,206	0,189	0,177	0,169
18	0,239	0,200	0,184	0,173	0,166
19	0,235	0,195	0,179	0,169	0,163
20	0,231	0,190	0,174	0,166	0,160
25	0,200	0,173	0,158	0,147	0,142
30	0,187	0,161	0,144	0,136	0,131
n > 30	$\dfrac{1,031}{\sqrt{n}}$	$\dfrac{0,886}{\sqrt{n}}$	$\dfrac{0,805}{\sqrt{n}}$	$\dfrac{0,768}{\sqrt{n}}$	$\dfrac{0,736}{\sqrt{n}}$

APPENDIX III

TABLE OF F DISTRIBUTION

(Bilangan Dalam Badan Daftar Menyatakaan:

Fp : Baris Atas untuk p = 0,05 dan Baris Bawah untuk p = 0,01)

v_2 = dk penyebut	v_1 = dk pembilang																							
	1	2	3	4	5	6	7	8	9	10	11	12	14	16	20	24	30	40	50	75	100	200	500	∞
1	161	200	216	225	230	234	237	239	241	242	243	244	245	246	248	249	250	251	252	253	253	254	254	254
	4062	4999	5403	5625	5764	5859	5928	5981	6022	6056	6082	6106	6142	6169	6208	6234	6258	6286	6302	6323	6334	6352	6361	6366
2	18,51	19,00	19,16	19,25	19,30	19,33	19,36	19,37	19,38	19,39	19,40	19,41	19,42	19,43	19,44	19,45	19,46	19,47	19,47	19,48	19,49	19,49	19,50	19,50
	98,49	99,01	99,17	99,25	99,30	99,33	99,34	99,36	99,38	99,40	99,41	99,42	99,43	99,44	99,45	99,46	99,47	99,48	99,48	99,49	99,49	99,49	99,50	99,50
3	10,13	9,55	9,28	9,12	9,01	8,94	8,88	8,84	8,81	8,78	8,76	8,74	8,71	8,69	8,66	8,64	8,62	8,60	8,58	8,57	8,56	8,54	8,54	8,52
	34,12	30,81	29,46	28,71	28,24	27,91	27,67	27,49	27,34	27,23	27,13	27,05	26,92	26,83	26,69	26,60	26,50	26,41	26,30	26,27	26,23	26,18	26,14	26,12
4	7,17	6,94	6,59	6,39	6,26	6,16	6,09	6,04	6,00	5,96	5,93	5,91	5,87	5,84	5,80	5,77	5,74	5,71	5,70	5,68	5,66	5,65	5,64	5,63
	21,20	18,00	16,69	15,98	15,52	15,21	14,98	14,80	14,66	14,54	14,45	14,37	14,24	14,15	14,02	13,93	13,83	13,74	13,69	13,61	13,57	13,52	13,48	13,46
5	6,61	5,79	5,41	5,19	5,05	4,95	4,88	4,82	4,78	4,74	4,70	4,68	4,64	4,60	4,56	4,53	4,50	4,46	4,44	4,42	4,40	4,38	4,37	4,36
	16,26	13,27	12,06	11,39	10,97	10,67	10,45	10,27	10,15	10,05	9,96	9,89	9,77	9,68	9,55	9,47	9,38	9,29	9,24	9,17	9,13	9,07	9,04	9,02
6	5,99	5,14	4,76	4,53	4,39	4,28	4,21	4,15	4,10	4,06	4,03	4,00	3,96	3,92	3,87	3,84	3,81	3,77	3,75	3,72	3,71	3,69	3,68	3,67
	13,74	10,92	9,78	9,15	8,75	8,47	8,26	8,10	7,98	7,87	7,79	7,72	7,60	7,52	7,39	7,31	7,23	7,14	7,09	7,02	6,99	6,94	6,90	6,88
7	5,59	4,74	4,35	4,12	3,97	3,87	3,79	3,73	3,68	3,63	3,60	3,57	3,52	3,49	3,44	3,41	3,38	3,34	3,32	3,29	3,28	3,25	3,24	3,23
	12,25	9,55	8,45	7,86	7,46	7,19	7,00	6,84	6,71	6,62	6,54	6,47	6,35	6,27	6,15	6,07	5,98	5,90	5,85	5,78	5,75	5,70	5,67	5,65
8	5,32	4,46	4,07	3,84	3,69	3,58	3,50	3,44	3,39	3,34	3,31	3,28	3,23	3,20	3,15	3,12	3,08	3,05	3,03	3,00	2,98	2,96	2,94	2,93
	11,26	8,65	7,59	7,01	6,63	6,37	6,19	6,03	5,91	5,82	5,74	5,67	5,56	5,48	5,36	5,28	5,20	5,11	5,06	5,00	4,96	4,91	4,88	4,86
9	5,12	4,26	3,86	3,63	3,48	3,37	3,29	3,23	3,18	3,13	3,10	3,07	3,02	2,98	2,93	2,90	2,86	2,82	2,80	2,77	2,76	2,73	2,72	2,71
	10,56	8,02	6,99	6,42	6,06	5,80	5,62	5,47	5,35	5,26	5,18	5,11	5,00	4,92	4,80	4,73	4,64	4,56	4,51	4,45	4,41	4,36	4,33	4,31
10	4,96	4,10	3,71	3,48	3,33	3,22	3,14	3,07	3,02	2,97	2,94	2,91	2,86	2,82	2,77	2,74	2,70	2,67	2,64	2,61	2,59	2,56	2,55	2,54
	10,04	7,56	6,55	5,99	5,64	5,39	5,21	5,06	4,95	4,85	4,78	4,71	4,60	4,52	4,41	4,33	4,25	4,17	4,12	4,05	4,01	3,96	3,93	3,91
11	4,84	3,98	3,59	3,36	3,20	3,09	3,01	2,95	2,90	2,86	2,82	2,79	2,74	2,70	2,65	2,61	2,57	2,53	2,50	2,47	2,45	2,42	2,41	2,40
	9,65	7,20	6,22	5,67	5,32	5,07	4,88	4,74	4,63	4,54	4,46	4,40	4,29	4,21	4,10	4,02	3,94	3,86	3,80	3,74	3,70	3,66	3,62	3,60
12	4,75	3,88	3,49	3,26	3,11	3,00	2,92	2,85	2,80	2,76	2,72	2,69	2,64	2,60	2,54	2,50	2,46	2,42	2,40	2,36	2,35	2,32	2,31	2,30
	9,33	6,93	5,95	5,41	5,06	4,82	4,65	4,50	4,39	4,30	4,22	4,16	4,05	3,98	3,86	3,78	3,70	3,61	3,56	3,49	3,46	3,41	3,38	3,36
13	4,67	3,80	3,41	3,18	3,02	2,92	2,84	2,77	2,72	2,67	2,63	2,60	2,55	2,51	2,46	2,42	2,38	2,34	2,32	2,28	2,26	2,24	2,22	2,21
	9,07	6,70	5,74	5,20	4,86	4,62	4,44	4,30	4,19	4,10	4,02	3,96	3,85	3,78	3,67	3,59	3,51	3,42	3,37	3,30	3,27	3,21	3,18	3,16
14	4,60	3,74	3,34	3,11	2,96	2,85	2,77	2,70	2,65	2,60	2,56	2,53	2,48	2,44	2,39	2,35	2,31	2,27	2,24	2,21	2,19	2,16	2,14	2,13
	8,86	6,51	5,56	5,03	4,69	4,46	4,28	4,14	4,03	3,94	3,86	3,80	3,70	3,62	3,51	3,43	3,34	3,26	3,21	3,14	3,11	3,06	3,02	3,00
15	4,54	3,68	3,29	3,06	2,90	2,79	2,70	2,64	2,59	2,55	2,51	2,48	2,43	2,39	2,33	2,29	2,25	2,21	2,18	2,15	2,12	2,10	2,06	2,07
	8,68	6,36	5,42	4,89	4,56	4,32	4,14	4,00	3,89	3,80	3,73	3,67	3,56	3,48	3,36	3,29	3,20	3,12	3,07	3,00	2,97	2,92	2,89	2,87
16	4,49	3,63	3,24	3,01	2,85	2,74	2,66	2,59	2,54	2,49	2,45	2,42	2,37	2,33	2,28	2,24	2,20	2,16	2,13	2,09	2,07	2,04	2,02	2,01
	8,53	6,23	5,29	4,77	4,44	4,20	4,03	3,89	3,78	3,69	3,61	3,55	3,45	3,37	3,25	3,18	3,10	3,01	2,96	2,89	2,86	2,80	2,77	2,75
17	4,45	3,59	3,20	2,96	2,81	2,70	2,62	2,55	2,50	2,45	2,41	2,38	2,33	2,29	2,23	2,19	2,15	2,11	2,08	2,04	2,02	1,99	1,97	1,96
	8,40	6,11	5,18	4,67	4,34	4,10	3,93	3,79	3,68	3,59	3,52	3,45	3,35	3,27	3,16	3,08	3,00	2,92	2,86	2,79	2,76	2,70	2,67	2,65
18	4,41	3,55	3,16	2,93	2,77	2,66	2,58	2,51	2,46	2,41	2,37	2,34	2,29	2,25	2,19	2,15	2,11	2,07	2,04	2,00	1,98	1,96	1,93	1,92
	8,28	6,01	5,09	4,58	4,25	4,01	3,85	3,71	3,60	3,51	3,44	3,37	3,27	3,19	3,07	3,00	2,91	2,83	2,78	2,71	2,68	2,62	2,59	2,57
19	4,38	3,52	3,13	2,90	2,74	2,63	2,55	2,48	2,43	2,38	2,34	2,31	2,26	2,21	2,15	2,11	2,07	2,02	2,00	1,96	1,94	1,91	1,90	1,88
	8,18	5,93	5,01	4,50	4,17	3,94	3,77	3,63	3,52	3,43	3,36	3,30	3,19	3,12	3,00	2,92	2,84	2,76	2,70	2,63	2,60	2,54	2,51	2,49
20	4,35	3,49	3,10	2,87	2,71	2,60	2,52	2,45	2,40	2,35	2,31	2,28	2,23	2,18	2,12	2,08	2,04	1,99	1,96	1,92	1,90	1,87	1,85	1,84
	8,10	5,85	4,94	4,43	4,10	3,87	3,71	3,56	3,45	3,37	3,30	3,23	3,13	3,05	2,94	2,86	2,77	2,69	2,63	2,56	2,53	2,47	2,44	2,42
21	4,32	3,47	3,07	2,84	2,68	2,57	2,49	2,42	2,37	2,32	2,28	2,25	2,20	2,15	2,09	2,05	2,00	1,96	1,93	1,89	1,87	1,84	1,82	1,81
	8,02	5,78	4,87	4,37	4,04	3,81	3,65	3,51	3,40	3,31	3,24	3,17	3,07	2,99	2,88	2,80	2,72	2,63	2,58	2,51	2,47	2,42	2,38	2,36
22	4,30	3,44	3,05	2,82	2,66	2,55	2,47	2,40	2,35	2,30	2,26	2,23	2,18	2,13	2,07	2,03	1,98	1,93	1,91	1,87	1,84	1,81	1,80	1,78
	7,94	5,72	4,82	4,31	3,99	3,76	3,59	3,45	3,35	3,26	3,18	3,12	3,02	2,94	2,83	2,75	2,67	2,58	2,53	2,46	2,42	2,37	2,33	2,31
23	4,28	3,42	3,03	2,80	2,64	2,53	2,45	2,38	2,32	2,28	2,24	2,20	2,14	2,10	2,04	2,00	1,96	1,91	1,88	1,84	1,82	1,79	1,77	1,76
	7,88	5,66	4,76	4,26	3,94	3,71	3,54	3,41	3,30	3,21	3,14	3,07	2,97	2,89	2,78	2,70	2,62	2,53	2,48	2,41	2,37	2,32	2,28	2,26
24	4,26	3,40	3,01	2,78	2,62	2,51	2,43	2,36	2,30	2,26	2,22	2,18	2,13	2,09	2,02	1,98	1,94	1,89	1,86	1,82	1,80	1,76	1,74	1,73
	7,82	5,61	4,72	4,22	3,90	3,67	3,50	3,36	3,25	3,17	3,09	3,03	2,93	2,85	2,74	2,66	2,58	2,49	2,44	2,36	2,33	2,27	2,23	2,21
25	4,24	3,38	2,99	2,76	2,60	2,49	2,41	2,34	2,28	2,24	2,20	2,16	2,11	2,06	2,00	1,96	1,92	1,87	1,84	1,80	1,77	1,74	1,72	1,71
	7,77	5,57	4,68	4,18	3,86	3,63	3,46	3,32	3,21	3,13	3,05	2,99	2,89	2,81	2,70	2,62	2,54	2,45	2,40	2,32	2,29	2,23	2,19	2,17

df																								
26	4,22	3,37	2,89	2,74	2,59	2,47	2,39	2,32	2,27	2,22	2,18	2,15	2,10	2,05	1,99	1,95	1,90	1,85	1,82	1,78	1,76	1,72	1,70	1,69
	7,72	5,53	4,64	4,14	3,82	3,59	3,42	3,29	3,17	3,09	3,02	2,96	2,86	2,77	2,66	2,58	2,50	2,41	2,36	2,28	2,25	2,19	2,15	2,13
27	4,21	3,35	2,96	2,73	2,57	2,46	2,37	2,30	2,25	2,20	2,16	2,13	2,08	2,03	1,97	1,93	1,88	1,84	1,80	1,76	1,74	1,71	1,68	1,67
	7,68	5,49	4,60	4,11	3,79	3,56	3,39	3,26	3,14	3,06	2,98	2,93	2,83	2,74	2,63	2,55	2,47	2,38	2,33	2,25	2,21	2,16	2,12	2,10
28	4,20	3,34	2,95	2,71	2,56	2,44	2,36	2,29	2,24	2,19	2,15	2,12	2,06	2,02	1,96	1,91	1,87	1,81	1,78	1,75	1,72	1,69	1,67	1,65
	7,64	5,45	4,57	4,07	3,76	3,53	3,36	3,23	3,11	3,03	2,95	2,90	2,80	2,71	2,60	2,52	2,44	2,35	2,30	2,22	2,18	2,13	2,09	2,06
29	4,18	3,33	2,93	2,70	2,54	2,43	2,35	2,28	2,22	2,18	2,14	2,10	2,05	2,00	1,94	1,90	1,85	1,80	1,77	1,73	1,71	1,68	1,65	1,64
	7,60	5,52	4,54	4,04	3,73	3,50	3,33	3,20	3,08	3,00	2,92	2,87	2,77	2,68	2,57	2,49	2,41	2,32	2,27	2,19	2,15	2,10	2,06	2,03
30	4,17	3,32	2,92	2,69	2,53	2,42	2,34	2,27	2,21	2,16	2,12	2,09	2,04	1,99	1,93	1,89	1,84	1,79	1,76	1,72	1,69	1,66	1,64	1,62
	7,56	5,39	4,51	4,02	3,70	3,47	3,30	3,17	3,06	2,98	2,90	2,84	2,74	2,66	2,55	2,47	2,38	2,29	2,24	2,16	2,13	2,07	2,03	2,01
32	4,15	3,30	29,00	2,67	2,51	2,40	2,32	2,25	2,19	2,14	2,10	2,07	2,02	1,97	1,91	1,86	1,82	1,76	1,74	1,69	1,67	1,64	1,61	1,59
	7,50	5,34	4,46	3,97	3,66	3,42	3,25	3,12	3,01	2,94	2,86	2,80	2,70	2,62	2,51	2,42	2,34	2,25	2,20	2,12	2,08	2,02	1,98	1,96
34	4,13	3,28	2,88	2,65	2,49	2,38	2,30	2,23	2,17	2,12	2,08	2,05	2,00	1,95	1,89	1,84	1,80	1,74	1,71	1,67	1,64	1,61	1,59	1,57
	7,44	5,29	4,42	3,93	3,61	3,38	3,21	3,08	2,97	2,89	2,82	2,76	2,66	2,58	2,47	2,38	2,30	2,21	2,15	2,08	2,04	1,98	1,94	1,91
36	4,11	3,26	2,86	2,63	2,48	2,36	2,28	2,21	2,15	2,10	2,06	2,03	1,89	1,93	1,87	1,82	1,78	1,72	1,69	1,65	1,62	1,59	1,56	1,55
	7,39	5,25	4,38	3,89	3,58	3,35	3,18	3,04	2,94	2,86	2,78	2,72	2,62	2,54	2,43	2,35	2,26	2,17	2,12	2,04	2,00	1,94	1,90	1,87
38	4,10	3,25	2,85	2,62	2,46	2,35	2,26	2,19	2,14	2,09	2,05	2,02	1,96	1,92	1,85	1,80	1,76	1,71	1,67	1,63	1,60	1,57	1,54	1,53
	7,35	5,21	4,34	3,86	3,84	9,32	3,15	3,02	2,91	2,82	2,75	2,69	2,59	2,51	2,40	2,32	2,22	2,14	2,08	2,00	1,97	1,90	1,86	1,84
40	4,08	3,23	2,84	2,61	2,45	2,34	2,25	2,18	2,12	2,07	2,04	2,00	1,95	1,90	1,84	1,79	1,74	1,69	1,66	1,61	1,59	1,55	1,53	1,51
	7,31	5,18	4,31	3,83	3,51	3,29	3,12	2,99	2,88	2,80	2,73	2,66	2,56	2,49	2,37	2,29	2,20	2,11	2,05	1,97	1,94	1,88	1,84	1,81
42	4,07	3,22	2,83	2,59	2,44	2,32	2,24	2,17	2,11	2,06	2,02	1,99	1,94	1,89	1,82	1,78	1,73	1,68	1,64	1,60	1,57	1,54	1,51	1,49
	7,27	5,15	4,29	3,80	3,49	3,26	3,10	2,96	2,86	2,77	2,70	2,64	2,54	2,46	2,35	2,26	2,17	2,08	2,02	1,94	1,91	1,85	1,80	1,78
44	4,06	3,21	2,82	2,58	2,43	2,31	2,23	2,16	2,10	2,05	2,01	1,98	1,92	1,88	1,81	1,76	2,17	1,66	1,63	1,58	1,56	1,52	1,50	1,48
	7,24	5,12	4,26	3,78	3,46	3,24	3,07	2,94	2,84	2,75	2,68	2,62	2,52	2,44	2,32	2,24	1,72	2,06	2,00	1,92	1,88	1,82	1,78	1,75
46	4,05	3,20	2,81	2,57	2,42	2,30	2,22	2,14	2,09	2,04	2,00	1,97	1,91	1,87	1,80	1,75	2,15	1,65	1,62	1,57	1,54	1,51	1,48	1,46
	7,21	5,10	4,24	3,76	3,44	3,22	3,05	2,92	2,82	2,73	2,66	2,60	2,50	2,42	2,32	2,22	1,71	2,04	1,98	1,90	1,86	1,80	1,76	1,72
48	4,04	3,19	2,80	2,56	2,41	2,30	2,21	2,14	2,08	2,03	1,99	1,96	1,90	1,86	1,79	1,74	2,13	1,64	1,61	1,56	1,53	1,50	1,47	1,45
	7,19	5,08	4,22	3,74	3,42	3,20	3,04	2,90	2,80	2,71	2,64	2,58	2,48	2,40	2,28	2,20	1,70	2,02	1,96	1,88	1,84	1,78	1,73	1,70
50	4,03	3,18	2,79	2,56	2,40	2,29	2,20	2,13	2,07	2,02	1,98	1,95	1,90	1,85	1,78	1,74	1,69	1,63	1,60	1,55	1,52	1,48	1,46	1,44
	7,17	5,06	4,20	3,72	3,44	3,18	3,02	2,88	2,78	2,70	2,62	2,56	2,46	2,39	2,26	2,18	2,10	2,00	1,94	1,86	1,82	1,76	1,71	1,68
55	4,02	3,17	2,78	2,54	2,38	2,27	2,18	2,11	2,05	2,00	1,97	1,93	1,88	1,83	1,76	1,72	1,67	1,61	1,58	1,52	1,50	1,46	1,43	1,41
	7,12	5,01	4,16	3,65	3,37	3,15	2,98	2,85	2,75	2,66	2,59	2,53	2,43	2,35	2,23	2,15	2,00	1,96	1,90	1,82	1,78	1,71	1,66	1,64
60	4,00	3,15	2,76	2,52	2,37	2,25	2,17	2,10	2,04	1,99	1,95	1,92	1,86	1,81	1,75	1,70	1,65	1,59	1,56	1,50	1,48	1,44	1,41	1,39
	7,08	4,98	4,13	3,65	3,34	3,12	2,95	2,82	2,72	2,63	2,56	2,50	2,40	2,32	2,20	2,12	2,03	1,93	1,87	1,79	1,74	1,68	1,63	1,60
65	3,99	3,14	2,75	2,51	2,36	2,21	2,15	2,08	2,02	1,98	1,94	1,90	1,85	1,80	1,73	1,68	1,63	1,57	1,54	1,49	1,46	1,42	1,39	1,37
	7,01	4,95	4,10	3,62	3,31	3,09	2,93	2,79	2,70	2,61	2,54	2,47	2,37	2,30	2,18	2,09	2,00	1,90	1,84	1,76	1,71	1,64	1,60	1,56
70	3,98	3,13	2,74	2,50	2,35	2,32	2,14	2,07	2,01	1,97	1,93	1,89	1,84	1,79	1,72	1,67	1,62	1,56	1,53	1,47	1,45	1,40	1,37	1,35
	7,01	4,92	4,08	3,60	3,29	3,07	2,91	2,77	2,67	2,59	2,51	2,45	2,35	2,28	2,15	2,07	1,98	1,88	1,82	1,74	1,69	1,63	1,56	1,53
80	3,96	3,11	2,72	2,48	2,33	2,21	2,12	2,05	1,99	1,95	1,91	1,88	1,82	1,77	1,70	1,65	1,60	1,54	1,51	1,45	1,42	1,38	1,35	1,32
	6,96	4,88	4,01	3,58	3,25	3,04	2,87	2,74	2,64	2,55	2,48	2,44	2,32	2,24	2,11	2,03	1,94	1,84	1,78	1,70	1,65	1,57	1,52	1,49
100	3,94	3,09	2,70	2,46	2,30	2,19	2,10	2,03	1,97	1,92	1,88	1,85	1,79	1,75	1,68	1,63	1,57	1,51	1,48	1,42	1,39	1,34	1,30	1,28
	6,90	4,82	3,98	3,51	3,20	2,99	2,82	2,69	2,59	2,51	2,43	2,36	2,26	2,19	2,06	1,98	1,89	1,79	1,73	1,64	1,59	1,51	1,46	1,43
125	3,92	3,07	2,68	2,44	2,29	2,17	2,08	2,01	1,95	1,90	1,86	1,83	1,77	1,72	1,65	1,60	1,55	1,49	1,45	1,39	1,36	1,31	1,27	1,25
	6,84	4,78	3,94	3,47	3,17	2,95	2,79	2,65	2,56	2,47	2,40	2,33	2,23	2,15	2,03	1,94	1,85	1,75	1,68	1,59	1,54	1,46	1,40	1,37
150	3,91	3,06	2,67	2,43	2,27	2,16	2,07	2,00	1,94	1,89	1,85	1,82	1,76	1,71	1,64	1,59	1,54	1,47	1,44	1,37	1,34	1,29	1,25	1,22
	6,81	4,75	3,91	3,44	3,13	2,92	2,76	2,62	2,53	2,44	2,37	2,30	2,20	2,12	2,00	1,91	1,82	1,72	1,66	1,56	1,51	1,43	1,37	1,33
200	3,89	3,01	2,65	2,41	2,26	2,14	2,05	1,98	1,92	1,87	1,83	1,80	1,74	1,69	1,62	1,57	1,52	1,45	1,42	1,35	1,32	1,26	1,22	1,19
	6,76	4,71	3,88	3,41	3,11	2,90	2,73	2,60	2,50	2,41	2,34	2,28	1,17	2,09	1,97	1,88	1,79	1,69	1,62	1,53	1,48	1,39	1,33	1,28
400	3,86	3,02	2,62	2,39	2,23	2,12	2,03	1,96	1,90	1,85	1,81	1,78	1,72	1,67	1,60	1,54	1,49	1,42	1,38	1,32	1,28	1,22	1,16	1,13
	6,70	4,66	3,83	3,36	3,06	2,85	2,69	2,55	2,46	2,37	2,29	2,23	2,12	2,04	1,92	1,84	1,74	1,64	1,57	1,47	1,42	1,32	1,24	1,19
1000	3,85	3,00	2,61	2,38	2,22	2,10	2,02	1,95	1,89	1,81	1,80	1,76	1,70	1,65	1,58	1,53	1,47	1,41	1,36	1,30	1,26	1,19	1,13	1,08
	6,68	4,62	3,80	3,34	3,04	2,82	2,66	2,53	2,43	2,34	2,26	2,20	2,09	2,01	1,89	1,81	1,71	1,61	1,54	1,44	1,38	1,28	1,19	1,11
∞	3,84	2,99	2,60	2,37	2,21	2,09	2,01	1,94	1,88	1,83	1,79	1,75	1,69	1,64	1,57	1,52	1,46	1,40	1,35	1,28	1,24	1,17	1,11	1,00
	6,64	4,60	3,78	3,32	3,02	2,80	2,64	2,51	2,41	2,32	2,24	2,18	2,07	1,99	1,87	1,79	1,69	1,59	1,52	1,41	1,36	1,25	1,12	1,00

Source: Sudjana. *Metoda Statistika*. Bandung: Tarsito, 2002

APPENDIX IV

Nilai Kritis Distribusi t

ν	0.10	0.05	0.025	0.01	0.005	0.001
1.	3.078	6.314	12.706	31.821	63.657	318.313
2.	1.886	2.920	4.303	6.965	9.925	22.327
3.	1.638	2.353	3.182	4.541	5.841	10.215
4.	1.533	2.132	2.776	3.747	4.604	7.173
5.	1.476	2.015	2.571	3.365	4.032	5.893
6.	1.440	1.943	2.447	3.143	3.707	5.208
7.	1.415	1.895	2.365	2.998	3.499	4.782
8.	1.397	1.860	2.306	2.896	3.355	4.499
9.	1.383	1.833	2.262	2.821	3.250	4.296
10.	1.372	1.812	2.228	2.764	3.169	4.143
11.	1.363	1.796	2.201	2.718	3.106	4.024
12.	1.356	1.782	2.179	2.681	3.055	3.929
13.	1.350	1.771	2.160	2.650	3.012	3.852
14.	1.345	1.761	2.145	2.624	2.977	3.787
15.	1.341	1.753	2.131	2.602	2.947	3.733
16.	1.337	1.746	2.120	2.583	2.921	3.686
17.	1.333	1.740	2.110	2.567	2.898	3.646
18.	1.330	1.734	2.101	2.552	2.878	3.610
19.	1.328	1.729	2.093	2.539	2.861	3.579
20.	1.325	1.725	2.086	2.528	2.845	3.552
21.	1.323	1.721	2.080	2.518	2.831	3.527
22.	1.321	1.717	2.074	2.508	2.819	3.505
23.	1.319	1.714	2.069	2.500	2.807	3.485
24.	1.318	1.711	2.064	2.492	2.797	3.467
25.	1.316	1.708	2.060	2.485	2.787	3.450
26.	1.315	1.706	2.056	2.479	2.779	3.435
27.	1.314	1.703	2.052	2.473	2.771	3.421
28.	1.313	1.701	2.048	2.467	2.763	3.408
29.	1.311	1.699	2.045	2.462	2.756	3.396
30.	1.310	1.697	2.042	2.457	2.750	3.385
31.	1.309	1.696	2.040	2.453	2.744	3.375
32.	1.309	1.694	2.037	2.449	2.738	3.365
33.	1.308	1.692	2.035	2.445	2.733	3.356
34.	1.307	1.691	2.032	2.441	2.728	3.348
35.	1.306	1.690	2.030	2.438	2.724	3.340
36.	1.306	1.688	2.028	2.434	2.719	3.333
37.	1.305	1.687	2.026	2.431	2.715	3.326
38.	1.304	1.686	2.024	2.429	2.712	3.319
39.	1.304	1.685	2.023	2.426	2.708	3.313
40.	1.303	1.684	2.021	2.423	2.704	3.307
41.	1.303	1.683	2.020	2.421	2.701	3.301
42.	1.302	1.682	2.018	2.418	2.698	3.296
43.	1.302	1.681	2.017	2.416	2.695	3.291
44.	1.301	1.680	2.015	2.414	2.692	3.286
45.	1.301	1.679	2.014	2.412	2.690	3.281

APPENDIX V

NO	X	Y	X^2	Y^2	XY^2
1	75	60	5625	3600	4500
2	80	65	6400	4225	5200
3	75	70	5625	4900	5250
4	80	70	6400	4900	5600
5	80	65	6400	4225	5200
6	75	60	5625	3600	4500
7	80	60	6400	3600	4800
8	75	60	5625	3600	4500
9	80	65	6400	4225	5200
10	75	70	5625	4900	5250
11	75	65	6400	4225	4875
12	80	65	5625	4225	5200
13	80	60	5625	3600	4800
14	75	60	6400	3600	4500
15	75	60	6400	3600	4500
16	80	60	5625	3600	4800
17	80	60	6400	3600	4800
18	75	65	5625	4225	4875
19	80	70	6400	4900	5600
20	80	60	6400	3600	4800
$\sum 20$	$\sum 1555$	$\sum 7270$	$\sum 80950$	$\sum 80950$	$\sum 98750$

Table of the Standard Normal (z) Distribution

z	0.00	0.01	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09
0.0	0.0000	0.0040	0.0080	0.0120	0.0160	0.0190	0.0239	0.0279	0.0319	0.0359
0.1	0.0398	0.0438	0.0478	0.0517	0.0557	0.0596	0.0636	0.0675	0.0714	0.0753
0.2	0.0793	0.0832	0.0871	0.0910	0.0948	0.0987	0.1026	0.1064	0.1103	0.1141
0.3	0.1179	0.1217	0.1255	0.1293	0.1331	0.1368	0.1406	0.1443	0.1480	0.1517
0.4	0.1554	0.1591	0.1628	0.1664	0.1700	0.1736	0.1772	0.1808	0.1844	0.1879
0.5	0.1915	0.1950	0.1985	0.2019	0.2054	0.2088	0.2123	0.2157	0.2190	0.2224
0.6	0.2257	0.2291	0.2324	0.2357	0.2389	0.2422	0.2454	0.2486	0.2517	0.2549
0.7	0.2580	0.2611	0.2642	0.2673	0.2704	0.2734	0.2764	0.2794	0.2823	0.2852
0.8	0.2881	0.2910	0.2939	0.2969	0.2995	0.3023	0.3051	0.3078	0.3106	0.3133
0.9	0.3159	0.3186	0.3212	0.3238	0.3264	0.3289	0.3315	0.3340	0.3365	0.3389
1.0	0.3413	0.3438	0.3461	0.3485	0.3508	0.3513	0.3554	0.3577	0.3529	0.3621
1.1	0.3643	0.3665	0.3686	0.3708	0.3729	0.3749	0.3770	0.3790	0.3810	0.3830
1.2	0.3849	0.3869	0.3888	0.3907	0.3925	0.3944	0.3962	0.3980	0.3997	0.4015
1.3	0.4032	0.4049	0.4066	0.4082	0.4099	0.4115	0.4131	0.4147	0.4162	0.4177
1.4	0.4192	0.4207	0.4222	0.4236	0.4251	0.4265	0.4279	0.4292	0.4306	0.4319
1.5	0.4332	0.4345	0.4357	0.4370	0.4382	0.4394	0.4406	0.4418	0.4429	0.4441
1.6	0.4452	0.4463	0.4474	0.4484	0.4495	0.4505	0.4515	0.4525	0.4535	0.4545
1.7	0.4554	0.4564	0.4573	0.4582	0.4591	0.4599	0.4608	0.4616	0.4625	0.4633
1.8	0.4641	0.4649	0.4656	0.4664	0.4671	0.4678	0.4686	0.4693	0.4699	0.4706
1.9	0.4713	0.4719	0.4726	0.4732	0.4738	0.4744	0.4750	0.4756	0.4761	0.4767
2.0	0.4772	0.4778	0.4783	0.4788	0.4793	0.4798	0.4803	0.4808	0.4812	0.4817
2.1	0.4821	0.4826	0.4830	0.4834	0.4838	0.4842	0.4846	0.4850	0.4854	0.4857
2.2	0.4861	0.4864	0.4868	0.4871	0.4875	0.4878	0.4881	0.4884	0.4887	0.4890
2.3	0.4893	0.4896	0.4898	0.4901	0.4904	0.4906	0.4909	0.4911	0.4913	0.4916
2.4	0.4918	0.4920	0.4922	0.4925	0.4927	0.4929	0.4931	0.4932	0.4934	0.4936
2.5	0.4938	0.4940	0.4941	0.4943	0.4945	0.4946	0.4948	0.4949	0.4951	0.4952
2.6	0.4953	0.4955	0.4956	0.4957	0.4959	0.4960	0.4961	0.4962	0.4963	0.4964
2.7	0.4965	0.4966	0.4967	0.4968	0.4969	0.4970	0.4971	0.4972	0.4973	0.4974
2.8	0.4974	0.4975	0.4976	0.4977	0.4977	0.4978	0.4979	0.4979	0.4980	0.4981
2.9	0.4981	0.4982	0.4982	0.4983	0.4984	0.4984	0.4985	0.4985	0.4986	0.4986
3.0	0.4987	0.4987	0.4987	0.4988	0.4988	0.4989	0.4989	0.4989	0.4990	0.4990
3.1	0.4990	0.4991	0.4991	0.4991	0.4992	0.4992	0.4992	0.4992	0.4993	0.4993
3.2	0.4993	0.4993	0.4994	0.4994	0.4994	0.4994	0.4994	0.4995	0.4995	0.4995
3.3	0.4995	0.4995	0.4995	0.4996	0.4996	0.4996	0.4996	0.4996	0.4996	0.4997
3.4	0.4997	0.4997	0.4997	0.4997	0.4997	0.4997	0.4997	0.4997	0.4997	0.4998

Continuation of Appendix

z	.00	.01	.02	.03	.04	.05	.06	.07	.08	.09
−3.4	.0003	.0003	.0003	.0003	.0003	.0003	.0003	.0003	.0003	.0002
−3.3	.0005	.0005	.0005	.0004	.0004	.0004	.0004	.0004	.0004	.0003
−3.2	.0007	.0007	.0006	.0006	.0006	.0006	.0006	.0005	.0005	.0005
−3.1	.0010	.0009	.0009	.0009	.0008	.0008	.0008	.0008	.0007	.0007
−3.0	.0013	.0013	.0013	.0012	.0012	.0011	.0011	.0011	.0010	.0010
−2.9	.0019	.0018	.0018	.0017	.0016	.0016	.0015	.0015	.0014	.0014
−2.8	.0026	.0025	.0024	.0023	.0023	.0022	.0021	.0021	.0020	.0019
−2.7	.0035	.0034	.0033	.0032	.0031	.0030	.0029	.0028	.0027	.0026
−2.6	.0047	.0045	.0044	.0043	.0041	.0040	.0039	.0038	.0037	.0036
−2.5	.0062	.0060	.0059	.0057	.0055	.0054	.0052	.0051	.0049	.0048
−2.4	.0082	.0080	.0078	.0075	.0073	.0071	.0069	.0068	.0066	.0064
−2.3	.0107	.0104	.0102	.0099	.0096	.0094	.0091	.0089	.0087	.0084
−2.2	.0139	.0136	.0132	.0129	.0125	.0122	.0119	.0116	.0113	.0110
−2.1	.0179	.0174	.0170	.0166	.0162	.0158	.0154	.0150	.0146	.0143
−2.0	.0228	.0222	.0217	.0212	.0207	.0202	.0197	.0192	.0188	.0183
−1.9	.0287	.0281	.0274	.0268	.0262	.0256	.0250	.0244	.0239	.0233
−1.8	.0359	.0351	.0344	.0336	.0329	.0322	.0314	.0307	.0301	.0294
−1.7	.0446	.0436	.0427	.0418	.0409	.0401	.0392	.0384	.0375	.0367
−1.6	.0548	.0537	.0526	.0516	.0505	.0495	.0485	.0475	.0465	.0455
−1.5	.0668	.0655	.0643	.0630	.0618	.0606	.0594	.0582	.0571	.0559
−1.4	.0808	.0793	.0778	.0764	.0749	.0735	.0721	.0708	.0694	.0681
−1.3	.0968	.0951	.0934	.0918	.0901	.0885	.0869	.0853	.0838	.0823
−1.2	.1151	.1131	.1112	.1093	.1075	.1056	.1038	.1020	.1003	.0985
−1.1	.1357	.1335	.1314	.1292	.1271	.1251	.1230	.1210	.1190	.1170
−1.0	.1587	.1562	.1539	.1515	.1492	.1469	.1446	.1423	.1401	.1379
−0.9	.1841	.1814	.1788	.1762	.1736	.1711	.1685	.1660	.1635	.1611
−0.8	.2119	.2090	.2061	.2033	.2005	.1977	.1949	.1922	.1894	.1867
−0.7	.2420	.2389	.2358	.2327	.2296	.2266	.2236	.2206	.2177	.2148
−0.6	.2743	.2709	.2676	.2643	.2611	.2578	.2546	.2514	.2483	.2451
−0.5	.3085	.3050	.3015	.2981	.2946	.2912	.2877	.2843	.2810	.2776
−0.4	.3446	.3409	.3372	.3336	.3300	.3264	.3228	.3192	.3156	.3121
−0.3	.3821	.3783	.3745	.3707	.3669	.3632	.3594	.3557	.3520	.3483
−0.2	.4207	.4168	.4129	.4090	.4052	.4013	.3974	.3936	.3897	.3859
−0.1	.4602	.4562	.4522	.4483	.4443	.4404	.4364	.4325	.4286	.4247
−0.0	.5000	.4960	.4920	.4880	.4840	.4801	.4761	.4721	.4681	.4641