

**THE EFFECT OF USING LOGAN AVENUE PROBLEM SOLVING
HEURISTIC LEARNING MODEL ON STUDENTS'
READING ACHIEVEMENT**

SKRIPSI

*Submitted in Partial Fulfillment of the Requirements
for the Degree of Sarjana Pendidikan (S.Pd)
English Education Program*

By:

NOVI HANDAYANI SINAGA
NPM: 1402050214



**FACULTY OF TEACHER TRAINING AND EDUCATION
UNIVERSITY OF MUHAMMADIYAH SUMATERA UTARA
MEDAN
2019**



**MAJELIS PENDIDIKAN TINGGI
UNIVERSITAS MUHAMMADIYAH SUMATERA UTARA
FAKULTAS KEGURUAN DAN ILMU PENDIDIKAN**

Jalan Kapten Mukhtar Basri No. 3 Telp. (061) 6619056 Medan 20238
Website : <http://www.fkip.umsu.ac.id> E-mail: fkip@umsu.ac.id

BERITA ACARA

Ujian Mempertahankan Skripsi Sarjana Bagi Mahasiswa Program Strata I
Fakultas keguruan dan Ilmu Pendidikan Universitas Muhammadiyah Sumatera Utara



Panitia Ujian Sarjana Strata-1 Fakultas Keguruan dan Ilmu Pendidikan dalam Sidangnya yang diselenggarakan pada hari Kamis, 03 Oktober 2019, pada pukul 07.30 WIB sampai dengan selesai. Setelah mendengar, memperhatikan dan memutuskan bahwa :

Nama Lengkap : Novi Handayani Sinaga
NPM : 1402050214
Program Studi : Pendidikan Bahasa Inggris
Judul Skripsi : The Effect of Using Logan Avenue Problem Solving Heuristic Learning Model on Students' Reading Achievement

Ditetapkan : (**A**) Lulus Yudisium
() Lulus Bersyarat
() Memperbaiki Skripsi
() Tidak Lulus

Dengan diterimanya skripsi ini, sudah lulus dari ujian komprehensif, berhak memakai gelar Sarjana Pendidikan (S.Pd.)

PANITIA PELAKSANA

Ketua,

Sekretaris,

Dr. H. Elfrianto Nasution, S.Pd., M.Pd.

Dra. Hj. Svamsuyurnita, M.Pd.

ANGGOTA PENGUJI:

1. Prof Amrin Saragih, M.A, Ph.D
2. Rini Ekayati, S.S, M.A
3. Imelda Darmayanti Manurung, S.S, M.Hum

1.

2.

3.



LEMBAR PENGESAHAN SKRIPSI

بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ

Skripsi ini yang diajukan oleh mahasiswa di bawah ini :

Nama Lengkap : Novi Handayani Sinaga

N.P.M : 1402050214

Program Studi : Pendidikan Bahasa Inggris

Judul Skripsi : The Effect of Using Logan Avenue Problem Solving Heuristic Learning Model on Students' Reading Achievement

sudah layak disidangkan.

Medan, 25 September 2019

Disetujui oleh:

Dosen Pembimbing

Imelda Darmavanti Manurung, S.S, M.Hum

Diketahui oleh:



Dr. H. Elfrianto Nasution, S.Pd., M.Pd

Ketua Program Studi,

Mandra Saragih, S.Pd, M.Hum

SURAT PERNYATAAN

بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ

Saya yang bertanda tangan dibawah ini :

Nama Lengkap : Novi Handayani Sinaga
N.P.M : 1402050214
Prog. Studi : Pendidikan Bahasa Inggris
Judul Proposal : The Effect of Using Logan Avenue Problem Solving Heuristic Learning Model on Students' Reading Achievement

Dengan ini saya menyatakan bahwa :

1. Penelitian yang saya lakukan dengan judul diatas belum pernah diteliti di Fakultas Keguruan dan Ilmu Pendidikan Universitas Muhammadiyah Sumatera Utara.
2. Penelitian ini akan saya lakukan sendiri tanpa ada bantuan dari pihak manapun dengan kata lain penelitian ini tidak saya tempahkan (dibuat) oleh orang lain dan juga tidak tergolong *Plagiat*.
3. Apabila point 1 dan 2 di atas saya langgar maka saya bersedia untuk dilakukan pembatalan terhadap penelitian tersebut dan saya bersedia mengulang kembali mengajukan judul penelitian yang baru dengan catatan mengulang seminar kembali

Demikian surat pernyataan ini saya perbuat tanpa ada paksaan dari pihak manapun juga, dan dapat dipergunakan sebagaimana mestinya.

Medan, Mei 2019
Hormat saya
Yang membuat pernyataan,



Novi Handayani Sinaga

Diketahui oleh
Ketua Program Studi
Pendidikan Bahasa Inggris



Mandra Saragih, S.Pd, M.Hum



MAJELIS PENDIDIKAN TINGGI
UNIVERSITAS MUHAMMADIYAH SUMATERA UTARA
FAKULTAS KEGURUAN DAN ILMU PENDIDIKAN

Jalan Kapten Mukhtar Basri No. 3 Telp. (061) 6619056 Medan 20238
Website : <http://www.fkip.umsu.ac.id> E-mail: fkip@umsu.ac.id

BERITA ACARA BIMBINGAN SKRIPSI

Perguruan Tinggi : Universitas Muhammadiyah Sumatera Utara
Fakultas : Keguruan dan Ilmu Pendidikan
Nama Lengkap : Novi Handayani Sinaga
N.P.M : 1402050214
Program Studi : Pendidikan Bahasa Inggris
Judul Skripsi : The Effect of Using Logan Avenue Problem Solving Heuristic Learning Model on Students' Reading Achievement

Tanggal	Materi Bimbingan Skripsi	Paraf	Keterangan
27/8 19	Revisi Ch. 1, 2, 3	f.	
2/9 19	Instrument of research	f.	
20/9 19	Raw Data	f.	
22/9 19	Validity & Reliability	f.	
26/9 19	Normality & Homogeneity	f.	
3/10 19	Testing hypothesis	f.	
10/10 19	findy & discussion	f.	
20/10 19	Conclusion, abstract, acknowledgement	f.	
25/10 19	References, acc	f.	

Unggul | Cerdas | Terpercaya
Medan, September 2019

Diketahui oleh :
Ketua Program Studi

Mandra Saragih, S.Pd., M.Hum.

Dosen Pembimbing

Imelda Darmayanti Manurung, S.S, M.Hum

ABSTRACT

Sinaga, Novi Handayani. 1402050214. “The Effect of Using Logan Avenue Problem Solving Heuristic Learning Model on Students’ Reading Achievement”. Skripsi: English Education Program. Faculty of Teachers’ Training and Education University of Muhammadiyah Sumatera Utara. Medan. 2019.

The objective of this study was to investigate the effect of using logan avenue problem solving heuristic learning model on students’ reading achievement. This research was conducted at SMA Negeri 21 Medan, Jl. Kramat Indah Kecamatan Medan Denai, Kota Medan, Sumatera Utara in the academic year 2019/2020. An experimental research design in the descriptive quantitative method applied in this research. By using simple random sampling two classes, X IPA 1 and X IPS 1 were chosen as the sample. The experimental class, X IPS 1 with 34 students was taught by using logan avenue problem solving heuristic learning model, and 34 students in X IPA 1 as the control class was taught by using conventional model. The data obtain were analyzed by using t- test formula. The result of data analysis showed that $t_{observe}$ ($t_0= 2.27$) was greater than t_{table} was (1.998) at $\alpha = 0.05$ and $dk = 66$. It mean that based on the fact final hypothesis that H_0 was rejected and H_a was accepted. It concluded that there was a significant effect of using logan avenue problem solving heuristic learning model on students’ reading achievement.

Keywords: logan avenue problem solving heuristic learning model, narrative text, reading comprehension.

ACKNOWLEDGMENTS



Firstly, praise to Allah SWT, the almighty for the strengths and his blessing in enabling the researcher to finish this research as one of requirements to achieve scholar academic degree at English Education Program in The Faculty of Teachers' Training and Education University of Muhammadiyah Sumatera Utara.

Secondly, regard to Prophet Muhammad SAW who has brought human being from the darkness into the lightness in this life.

Thirdly, special appreciation goes to her beloved father ALM. Darwis Sinaga, and her beloved mother Fatimah Yendra, S.Pd for never ending and giving prayer, supports, love cares, and in her life. Special appreciation also goes to her brother: Fadli Zajry Sinaga, and her sister: Ria Ardika Damanik.

Finally, in writing this research. The researcher faced a lot difficulties and problems that without much helping, from the following people, it was impossible to her to accomplish this research. Therefore, the researcher to express her gratitude for:

1. Dr. Agussani, M.AP, the Rector of University of Muhammadiyah Sumatera Utara.
2. Dr. Elfrianto Nasution, S.Pd, M.Pd, the Dean of FKIP UMSU who had given recommendation to carry out this study.

3. Mandra Saragih, S.Pd, M. Hum, and Pirman Ginting, S.Pd, M.Hum, the Head and Secretary English Education Program, in Faculty of Teachers' Training and Education University of Muhammadiyah Sumatera Utara.
4. Imelda Darmayanti Manurung, S. S, M. Hum, her Supervisor for the valuable knowledge, supports, corrections, and giving advices to make the study better.
5. Rini Ekayati, S. S, M. A, her beloved reviewer who had given guidance, knowledge, support, suggestion, and time.
6. All lectures especially those English Education Program for their knowledge during academic years.
7. All of the Staff in English Department administration FKIP UMSU, who had given help in administrative system services of completing necessary requirements, so that all of the administrative system could be easy.
8. The employees of UMSU library, who had given her in completing all of then necessary requirements.
9. Sunariyo, S. Pd, M. Si, the headmaster of SMA N 21 Medan and Sudarto, S. Pd, M.S, the English teacher of SMA N 21 Medan, who had given guidance, support, suggestion, advice, permission, to her to observe in the class, and all of the teacher at SMA N 21 Medan who had given support, suggestion, and advice.
10. Dian Nanda Utama, S.Ak her special friend who support all of about this study, and helpful in completing this study.

11. Dewi Ernila, Desy Angraini, Kusuma, Siti Fatma Sari, Nanda Nauri, Devi Rasita Tarigan, Khairunnisa, Cahyani Wulandari, Simarapika Dila Sinaga, Emma Kurniawati, Desi Dwi Jayanti, Aydila Adha, Ayu Puspita Sari, Rika Oktaviani, Agustriani, Eka Arika, Kiki Handayani, Yuni, her beloved friends who has giving supports, attention, and information.
12. Her beloved classmate in C morning and her beloved classmate in B morning of English Education Program, for their supports, love, and motivation during learning process.
13. Jayanti, Nia, Kiki, Muthia, Puji, Vira, Putri, Indi, Nanda, and other friends in real teaching program for their support, spirit, suggestion and for anything.

Finally, the researcher realizes that this final project is far from being perfect. However, the researcher hopes that this study will give some contribution to the teaching and learning of reading comprehension. The researcher admits that there are still many weaknesses and shortcomings. Thus, the researcher would be gratefully to accept any constructive comments and suggestions for the betterment of this final project.

Medan, September 2019

The Researcher

Novi Handayani Sinaga

1402050214

TABLE OF CONTENT

ABSTRACT	i
ACKNOWLEDGMENTS	ii
TABLE OF CONTENT	v
LIST OF TABLES	viii
LIST OF APPENDICES	x
CHAPTER I INTRODUCTION	1
A. Background of the Study	1
B. The Identification of the Problem	3
C. Scope and Limitation	3
D. The Formulation of the Study	4
E. The Objectives of the Study	4
F. The Significance of the Study	4
CHAPTER II REVIEW OF LITERATURE	6
A. Theoretical Framework	6
1. The Nature of Reading	6
2. The Importance of Reading	8
3. Reading Comprehension	9
4. Genre of the text	11

4.1. Kinds of Genres Text	11
a. Exposition text	11
b. Explanation text	11
c. Procedure Text	12
d. Narrative Text	12
4.2. Narrative Text	12
a. Social Function of Narrative Text	13
b. Generic Structures of Narrative text	13
c. Linguistic Features of Narrative Text	15
5. Definition of Logan Avenue Problem Solving Heuristic	15
5.1. The Steps of Logan Avenue	
Problem Solving (LAPS)-Heuristic	17
5.2. The Advantages of Logan Avenue	
Problem Solving	18
5.3. The Disadvantages of Logan Avenue	
Problem Solving	19
B. Previous Relevant Studies	20
C. Conceptual Framework	21
D. Hypothesis	23
CHAPTER III METHOD OF RESEARCH	24
A. Location and Time	24
B. Population and Sample	24
C. Research Design	25

D. The Instrument of Research	28
E. The Technique of Collecting Data	30
F. The Technique of Analyzing Data	31
G. Statistical Hypothesis	34
CHAPTER IV DATA COLLECTION AND DATA ANALYSIS ...	35
A. Data Collection	35
B. Data Analysis	36
C. Testing Hypothesis	41
D. Research Findings	48
CHAPTER V CONCLUSION AND SUGGESTION	49
A. Conclusion	49
B. Suggestion	49
REFERENCES	
APPENDICES	

LIST OF TABLES

Table 3.1. Population and Sample	25
Table 3.2. The Research Design	25
Table 3.3. Treatment in Experimental Group and Control Group	26
Table 4.1. The score in pre-test and post-test of each group	35
Table 4.2. The score of Post-test on Students' Reading Narrative Text of Experimental Group (X1) and Control Group (X2)	36
Table 4.3. The Different Score Post-test In Both Experimental and Control Group	37
Table 4.4. Tabel Penolong Normality Experimental Class	38
Table 4.5. Tabel Penolong Normality Control Class.....	40
Table 4.6. The Validity of Pre-test Items Test	43
Table 4.7. The Validity of Post-test Items Test	44
Table 4.8. The Reliability Pre-test Items Test	45

Table 4.9. The Reliability Post-test Item Test	46
Table 4.10. Interpretation of the Correlation Coefficient	47

LIST OF APPENDICES

Appendix I	Lesson Plan of Control Class
Appendix II	Lesson Plan of Experimental Class
Appendix III	Test Item of Pre-test
Appendix IV	Test Item of Post-test
Appendix V	Answer Key of Pre-test
Appendix VI	Answer Key of Post-test
Appendix VII	The Different Score of Pre-test and Post-test in Experimental Class
Appendix VIII	The Different Score between Pre-test and Post-test of Control Class
Appendix IX	The Calculation of Standard Deviation in Experimental Class
Appendix X	The Calculation of Standard Deviation in Control Class
Appendix XI	The Calculation of Validity Pre-test and Post-test
Appendix XII	The Calculation of Reliability Pre-test and Post-test
Appendix XIII	Research Documentation
Appendix XIV	Form K-1
Appendix XV	Form K-2
Appendix XVI	Form K-3
Appendix XVII	Berita Acara Bimbingan Proposal
Appendix XVIII	Lembar Pengesahan Proposal

Appendix XIX	Lembar Permohonan Perubahan Judul Skripsi
Appendix XX	Lembar Pengesahan Hasil Seminar
Appendix XXI	Surat Keterangan Seminar Proposal
Appendix XXII	Surat Pernyataan Tidak Plagiat
Appendix XXIII	Surat Izin Riset
Appendix XXIV	Surat Balasan Izin Riset
Appendix XXV	Berita Acara Bimbingan Skripsi
Appendix XXVI	Lembar Pengesahan Skripsi
Appendix XXVII	Berita Acara Sidang
Appendix XXVIII	Curriculum Vitae

CHAPTER I

INTRODUCTION

A. Background of the Study

Reading is one of the four lessons covered in English lessons. Being able to read English is crucial especially for the student, because students' book in English learning is written in English. It becomes important for students to increase their knowledge in English. Reading is an activity which done to get the information from what is read. In reading process expected by the student to get the ideas from the text. After know that the goal of reading is catch the idea from the text, it will be continue to reading comprehension which is also the goal in reading achievement. Reading comprehension is the main point to build understanding the meaning from the text which then it can to translate with logical mind from students selves.

If students were wonted try their self in reading comprehension, it will make them strong to draw the conclusion clearly about what they read. Because said that someone who can comprehend the text, they will be able to make the conclusion from it. Teaching reading comprehension is not easy and it is not easy also to implement it. Reading comprehension need critical thinking from students, because reading comprehension is need more attention and more focus to interprets the message and make a conclusion based on their own word. Remember that to read an English text is not easy the students' effort is need here. They should practice reading in the form of

English. Students also need motivation in reading. Therefore, teacher must be able to use variety of learning models when teaching reading in the class. In this case, the student and the teacher need effort together to reach one goal same.

Based on the researcher's experience when she was teaching practice in the field, many students had difficulty to understand a text well. The student can't catch the meaning or information because the text presented in English. Many problems that faced students in teaching reading comprehension. In reading learning the teacher still use conventional model. (O'Brien, Beach, & Scharber, 2007) when the student following teaching reading comprehension, they are not confidence, because they have problems in reading English text, for example, they can't analyze the meaning of the text, they are lack of vocabulary, and they difficult to apply reading comprehension strategies. Other causes, students rarely trying to practice their ability in English text. Thus why, the participation of a teacher is need here. The teacher should solve this case with the new learning model. Because in learning process the student need support system as a new model to make them more able to understand the text well (Allington, 2005).

The learning model is very important to support teaching and learning process. Logan Avenue Problem Solving (LAPS) is one model that using in teaching reading. LAPS as a learning model to solve the problems the student in reading comprehension. When the teacher apply the learning model of LAPS, it's same with the teacher give some questions before the teacher ask

to the student to read a text. These questions as the simulation for give warming up such as some questions with use WH-words. Although they are not yet read whole the text. But It will give a little comprehend about the story from the text.

Teaching strategy in reading will be developed with the new model for the student so that the student more able to understand or comprehend the English text, especially in narrative text. Therefore, the researcher will do a study with the title “The Effect of Logan Avenue Problem Solving Heuristic Learning Model on Students’ Reading Achievement”.

B. The Identification of the Problem

Based on the background of the study above, the identification of the problems identified as follow:

1. The student lack in vocabulary.
2. The teacher still use conventional model in teaching reading.
3. The student difficult to understand a text in English.

C. Scope and Limitation

The scope in this research focused on reading comprehension and the limitation of this research is focus on reading narrative text.

D. The Formulation of the Study

The formulation of the problem of this study was formulated as the following:

Is there any significant effect of using logan avenue problem solving heuristic learning model on students' reading achievement?

E. The Objectives of the Study

Based on the formulation above, the objective of this research to investigate the effect of using logan avenue problem solving heuristic learning model on students' reading achievement.

F. The Significance of the Study

The finding of this research was expected to be useful for:

1. Theoretically

Theoretically, the study gives easier and interesting way in teaching reading by using logan avenue problem solving toward students' reading achievement and it given the contribution to successful teaching English learning especially in senior high school.

2. Practically

1. The students to be able in improving their reading comprehension through logan avenue problem solving learning model toward students' reading

achievement so that they can understanding with critical thinking use this model on reading comprehension of narrative text.

2. The teachers, use to various in teaching English especially in reading text by using logan avenue problem solving learning model toward students' reading achievement.
3. The other researchers, who are interested in conducting the same study of research.

CHAPTER II

REVIEW OF LITERATURE

A. Theoretical Framework

In conducting research, theories need to explain all the terms which were used in the study avoid miss-understanding between the researcher and readers. The researcher began to clarify the terms and concepts so that the researcher and readers have the same perception of them. The theoretical framework was aimed by giving a clear concept of the application in this study.

1. The Nature of Reading

Reading is a language process. It's mean that reading process is to understand the text and to get information. According to (Tarigan: 2008 in Nelli Irmayani Pandia thesis, 2018), the goal of reading is get the information that covers the content based on the story and get know what is the purpose of reading itself. Reading is one of four language skill. It is as the first skill to direct communication of the students to get their language development. Listening skill as the first one when the student will learn about speaking, and it's the same with reading skill when the student will learn about writing the first should mastered is reading skill. (Nunan: 1999 in Andi Herdiana Nur and Hj Djuwairiah Ahmad journal, 2017) reading is activity passive from reader to

get know about the content of reading the text through a language. It involves the processing of the generated ideas by others that are transmitted through language. Someone can read is not only a coincidence, however, because someone study and practice reading a text that includes such as, set as of words that meaningful. In the reading activity, which we read is symbol or sign or writing that meaningful. In this case, symbols or sign or writing mentioned it is can as a set of words that forming a word, a set of words that forming group of word and sentences, a set of sentences that forming paragraph, and a set of the paragraph that forming intact text.

Reading is an activity or process to apply a number of skill processing reading text in order to understand the contents of reading text. Therefore, reading can say as an activity get information or message delivered by the author in written language speech. Here, reading is to comprehend of reading the text well as literal, interpretative, critical, or creative. Reading it can say as a process to get information with use technique reading that suitable with reading material that got suitable with the purpose of reading. Basically, when someone reading, that we search is specific information. In reality, all of the people that have not clear reading purpose so it is difficult to get the information that is needed. The specific information is an important thing which there is in text. The specific information that we need it is the main idea by the author. The main idea which of the next poured out and developed by the author become a topic sentence. The main idea from the text should mastered. It is as a key to get information from each paragraph. In reading so

many things that we get, it is about knowledge and experience can increase. Change your life with reading in your daily activity.

When we begin to read, we actually have a number of initial decisions to make, and we usually make these decisions very quickly, almost unconsciously in most cases. For example, when we pick up a newspaper, we usually read the front page with some combination of search processing, reading comprehension. We read partly for information, but sometimes many people read with the goal until the ends of the lines in the newspaper.

2. The Importance of Reading

Reading is an activity to get information and knowledge from reading the text. Almost in activity reading that human gets knowledge with something that read. (Cunningham and Stanovich 1998, cited in Clark and Rumbold, 2006: p. 9 in Birsen Dogan journal, 2014) reading is not only for formal text but same with informal text, because from the reading activity we got many information and knowledge. Therefore, reading as a gateway to success. Because we get knowledge about what we read. With extensive knowledge, it makes fundamental in today's' society. Reading as so important to a variety of reason. The students need reading skill to improve their carrier and for a good job in the future. When the students get used to reading, it is can develop their mind. The Mind is muscle. It needs exercise. Teaching young children to read it can help them develops their language skills. (Majid and Tan: 2007 in

Birsen Dogan journal, 2014) the children success in the end of test because reading and the student to develop their language skills, children need reading. Reading is to help the children or adults to focus on people in communicating. Reading is developed imagine of the students. It is can develop the creative side of the students. The creative students need in education because of the students that creative usually is a smart student. The students with this case have good ideas and good skill to improve their self in the future, that it is so important for them. The story of Thomas Alfa Edison can be motivation to the students the awareness of many people how important it is to read.

3. Reading Comprehension

Reading comprehension is most obvious sense, the ability to understand the information in a text and interpret it appropriately. However, comprehension abilities are much more complex than this definition suggests. From the psycholinguistic point of view, reading is not primarily a visual process. There are two kinds of information involved in reading: (i) visual information, that is the one that comes from the printed page and (ii) non-visual information, that is, the information that comes from the brain of the reader. The explicit meaning in reading comprehension should mastered to the students so that they know about the specific information from the text (Smith, 1973:6 in English as a foreign language journal Maria Novary Ngabut, 2015). Even though, it is not an easy matter for the students. Teacher participation is needed here for solving this problem. Moreover, (Lynskey

and Stilie: 1982 in Rahmawati, et al journal, 2014) It means that reading comprehension needs much skill to know information and comprehend the text well, can value of texts.

(Carrel: 1988 in English as a foreign language journal Maria Novary Ngabut, 2015) states that reading comprehension have many interaction includes such as readers, text, task, and structured activity. The success of this interaction depends on the availability of the content strategy in problem-solving. Moreover, reading comprehension is the level of the understanding the text of a text/message. This understanding comes from the interaction between the words that are written, and how they trigger knowledge outside the text/message. Comprehension is a creative, multifaceted process dependent upon four language skills: phonology, syntax, semantics, and pragmatic. There are 7 essential skills for reading comprehension: decoding, fluency, vocabulary, sentence construction and cohesion, reasoning and background knowledge, and working memory and attention. Teaching reading comprehension in junior high school should seriously as a teacher to support and guide the students so that can it. Teachers' attention is more need in this case.

In short, reading comprehension is complex and requires cognitive skill the students to understand the mean of the text about. Even though teaching reading comprehension is not easy but if the teacher and the students can cooperate with each other it is an easy to learn it. Without comprehension, reading is zero. It is mean that when the students can able to reading

comprehension it make the students get any information which can increase their knowledge. So it is so important thing.

4. Genre of the Text

Genre is a stage, goal-oriented social process. Genre has features in each different text, it includes: social function, generic structure, and language features. Many human make a different way when use the concept of text type or genre, such as: as literature, fiction and narrative are mixed. Literature makes a purpose to the readers is pleasure of the audience (Kant, 1793 in Ole Togeby journal, 2010). In this study will be focused in genre of fiction, especially in narrative text.

4.1. Kinds of Genres Text

a. Exposition text

Exposition text is related most neutral, as continuing information and facts. The examples of exposition self are: describe something event seen or heard, take the minutes of a meeting, give a summary of something said or written, account for concepts, taxonomies, and generalize, document something, report, recount, etc.

b. Explanation text

Explanation text is the communicative issue comprehensible, make it plain. The examples of explanation text such as: define, give reasons, explain, indicates causes, interpret the meaning of some verbal.

c. Procedure Text

Procedure text is the text that explain about to do something. The position of this text use as the ruler of a management situation. Examples: a recipes, order, rule, etc.

d. Narrative Text

Narrative text is involves the event that happen in the past and it has a purpose as entertain the readers. In a narrative text from the story of narrative text there is a message that can take a wisdom to the reader in life. Examples of narrative text: narrate about episodes, incidents and events, etc.

4.2. Narrative Text

In this research focused on narrative texts. So according to (Pardiyono: 2007 in Rayendriani Fahmei Lubis journal, 2014) narrative is a story that has problem and written in past event also from narrative include a wisdom for readers. Narrative text tell about event in the past and there is a purpose of this text, it's to entertain the reader. (Otong Setiawan: 2007 in Rayendriani Fahmei Lubis journal, 2014) said that narrative text is tell about story of legend and there is a resolution from the story and has a purpose such as entertain readers. There is some characteristic of narrative text, such as character, the setting like, time and places, climax or the problem occur in the story. The problem in the story is included problem-solving, there is a message conveyed to the reader.

The narrative text has a core story which usually only in the form of the author's imagination or the real incident that was made by the author or even a combination of both. In various sources, narrative text can be found in form: fables, fairy tales, mysteries, science fiction, romance horror stories, legends, historical narratives, personal experience, and ballads.

a. Social Function of Narrative Text

Social function is same the mean with the purpose of the text. On the other hand, text types have a social function include in the story. For example in story of Malin Kundang, the social function from this story such is the readers can take a message based on the story such as, don't be rebellious to parents.

b. Generic Structures of Narrative text

According to (Dirgeyasa: 2014 in Ira Anggraini thesis, 2017), there are three elements of narrative text: (1) orientation, (2) complication, and (3) resolution.

1. Orientation

It is about the opening of a paragraph. In the orientation as introduce of the story, such as: introduce the name of the character, the main character, and introduce the setting from the story. For example in the story of Timun Mas, in orientation is explain about the participants of Timun Mas. They are Timun Mas such as the main character from the story, a widow as the mother of Timun Mas, and the giant as the antagonist character base on the story.

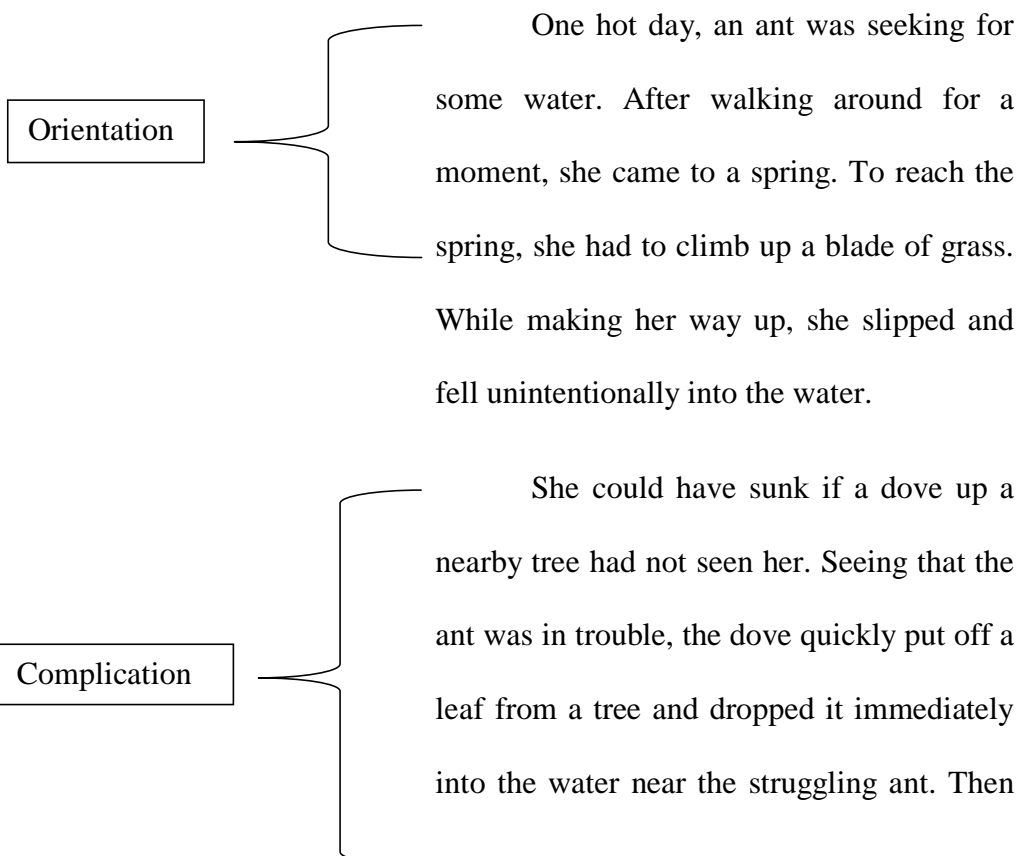
2. Complication

It is such a climax in the story. How is the development of the problem in this case? Sometimes, there are some of the complications in narrative text, such in the story of Timun Mas, a widow find the baby in the cucumber trees, the second complication is the giant want to eat the Timun Mas when 17 years.

3. Resolution

In resolution is how the problem is solved, or it is an ending of the story. The resolution in the narrative text can be a good or bad ending. Base on the Timun Mas story in the resolution of this story is Timun Mas and her mother lived happily. And the giant dead buried in mud.

Another example of narrative text:



the ant moved towards the leaf and climbed up there. Soon it carried her safely to dry ground.

Complication

Not long after that, there was a hunter nearby who was throwing out his net towards the dove, hoping to trap it in this way.

Resolution

Guessing what he should do, the ant quickly bit him on the heel. Feeling the pain, the hunter dropped his net and the dove flew away quickly from this net.

c. Linguistic Features of Narrative Text

As we see the story above, the common grammatical features of narrative text, such as (a) it is used past tense, (b) usually begins with adverb of time, likes, long time ago, once upon time, once, one, etc. (c) it has specific characters, like, Timun Mas, Cinderella, etc. (d) a verb shows an action, (e) use direct speech, it makes the story like life, such as, Snow White said" My name is Snow White".

5. Definition of Logan Avenue Problem Solving Heuristic

Logan avenue problem solving Heuristic leaning model is a series of demanding questions in the solution to the problem. Logan Avenue Problem Solving (LAPS) usually uses the question word what the problem is, is there an alternative, is it useful, what is the solution, and how should it be done. According to (Nurdin, 2006: 25) Heuristic is the model that use sequences of the questions to solve a problem and find the solution from the problem. Heuristic functions to solve students' problem solving to find solutions to problems given. There is an alternative to solve the problem with use questions such as, what the problem, and how they solve the problem it (Adiarta, 2014 in Education and Practice journal Desy Anggrianto, dkk, 2016). It means that LAPS is the learning model that need critical thinking of the students because in LAPS the students will face a series of question that should they answer and comprehend, when the teacher ask it. The students used their logic to use this learning model. (Stanovich et al, 2008 in Education and Practice journal Desy Anggrianto, dkk, 2016) found that the strategy of Heuristic is to improve the critical thinking with use the logical mind. In addition to some of these benefits, the strategy Heuristic can also improve the ability to think logically. The logical thinking will help the students to think more realistically and openly.

In English subject at the school, the students need more attention so that they can enjoy and understand the material from the teacher. It is necessary to develop the ability of the students' English creative thinking through learning that can generate the student creative thinking abilities to solve reading text in

English problems. One of the efforts that can be done is implementing the learning through the model of Logan avenue problem solving Heuristic. Learning with LAPS Heuristic model can create a sense of curiosity and motivation which makes students more creative. The learning of LAPS Heuristic model consists of understanding the problem, planning the solution, solving the problem, and reviewing the solutions. The researcher has developed learning instruments with LAPS Heuristic model as an effort to help students' reading creative thinking abilities. If the students get used to the model of LAPS it will make the students trained to develop their mindset, where the students should critic in the classroom when doing activity teaching and learning process.

The teacher should apply the accurate learning model which suit the students' characteristic. The selection of a learning model which is applied by the teacher must increase the students' activity, so the well-managed, accurate learning model will produce effective learning. To increase the students' activity, a teacher should have variety in learning, in order to make the students involved directly in the learning process applied. One of the learning model that able to be applied to create the students' activity is the learning model logan avenue problem solving Heuristic.

5.1. The Steps of Logan avenue problem solving Heuristic

In LAPS Heuristic learning model, it is the active activity, because in this study, the students should seriously use their memory and their eyes to focus comprehend the reading text, in short the students should find the main idea

from the text so that solve the problem base on the story and the students also can answer the questions of the texts. Teaching procedures of Logan avenue problem solving Heuristic learning model is described as follows:

- a. The problem was included from material that given.
- b. The teacher explains the purpose of the study.
- c. The students comprehend the problem base on the story of the narrative text. It will make the students easy to answer the question from the text.
- d. The students will be divided into some groups that in one group includes 4 students.
- e. Then, the students will plan the solution.
- f. After that, the students complete the problem base on the plain in point of step E.
- g. Finally, the students correct again the result of the value obtained.

When all the students start to read the story use the LAPS learning model, the teacher will ask each of the group. The teacher leads the students to comprehend the text with some series of the question as a warming up before the students know the story about. Each of the groups should show their result make a conclusion of the story based on their comprehension in a learning activity in their groups.

5.2. The Advantages of Logan Avenue Problem Solving

- a. Can lead to curiosity and motivation to be creative.
- b. Besides having knowledge and skills, it is necessary to have the ability to be skilled in reading and making the right questions.

- c. Generating answers that are original, new, distinctive, and diverse and can add new knowledge.
- d. Can improve the application of the knowledge that has been obtained.
- e. Inviting students to have problem-solving procedures, able to make analysis and synthesis, and are required to make evaluations of the results of their solutions.
- f. It is an important activity for students who involve themselves, not just one field of study but (if needed) many fields of study.

5.3.The Disadvantages of Logan Avenue Problem Solving

- a. When students have no interest or do not believe that the problem being studied is difficult to solve, they will feel reluctant to try.
- b. The success of the learning strategy requires enough time to prepare.
- c. Without understanding why trying to solve the problem being studied, they will not learn what they want to learn.

The rules:

1. Teacher explain Logan avenue problem solving Heuristic learning model to the students clearly.
2. Teacher explain how the way to do.
3. In each group must involve discussion
4. The teacher sees students development in reading comprehension
5. The end as the result of the discussion, the teacher asks the students to retell the story with their own comprehension.

6. The group that did retell the story will give the other group punishment is to find the meaning of difficult vocabulary, then answer it.

B. Previous Relevant Studies

The researcher took any information from the previous proposal. That it was conducted by other researcher was relevant to this research. Besides, the researcher had to analyze what the point that conveys on inform the design, finding and conclusion of the previous proposal, such as:

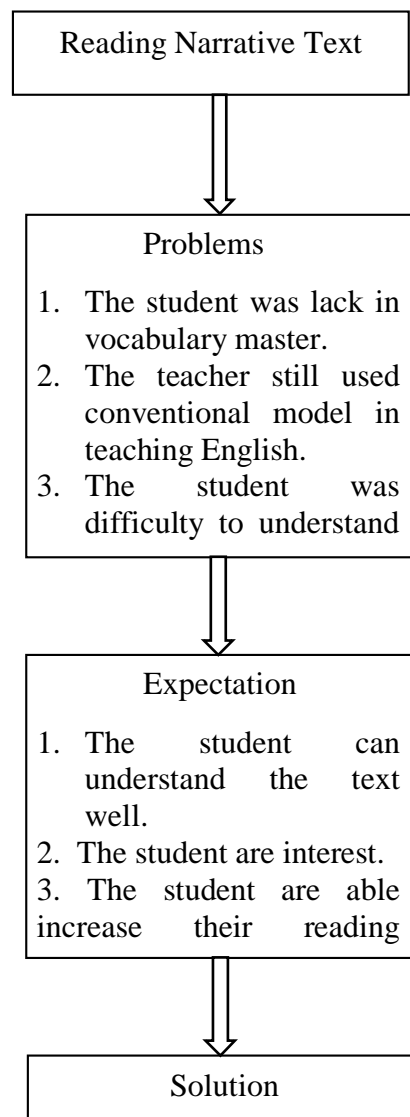
1. Desi Anggrianto, dkk (2016), Improving Critical Thinking Skills Using Learning Model Logan avenue problem solving Heuristic. This research has shown by the result of the post-test students' critical thinking skill that scores of the experimental class are higher than the control class. In accordance with the characteristic of the LAPS Heuristic on learning their activities and their problem-solving activities is to find the solutions to the problems.
2. U Husna, dkk (2018), Students' Creative Thinking Ability in Learning Mathematics Through Learning Model of Logan avenue problem solving Heuristic. The problem is also supported by the heuristic question. That makes a concluded the LAPS Heuristic model can be used to improve students' creative thinking abilities in learning mathematics.
3. Nofriansyah (2018), The Effect of Learning Model Logan Avenue Problem Solving to the Students Learning Activity. I see based on the

research done and from the data analysis that there is the effect of learning model LAPS Heuristic to the students' activity at the Economy subject in SMAN 1 Bukit Tinggi, West Sumatera province. The LAPS Heuristic learning model which can be used by the teachers to increase the students' activity.

C. Conceptual Framework

Teaching reading is an important thing for students. Because reading something is useful to increase knowledge and behavior in reading. In reading the students should get the meaning of the text reading. It is called reading comprehension. Where reading comprehension is the way to know about the meaning of the story and get make an evaluation of the text. The teacher should struggle to teach reading comprehension to the students. The students also struggle so that able to reading comprehension. If the students are often reading something with using their comprehension, it so makes the students get much knowledge and experience in reading achievement, it is so different from the students is lazy to reading something. Mostly, in all the subject matter in the class is to use students to comprehend the subject it. It will make the students more creative in their mind to able in their reading ability. As the teacher, it should know about the good technique and innovation to solve the problem faced by the students in reading the text in English. The researcher will make a creation for teaching reading by using LAPS, to give help to the students solved their problem. Learning model like LAPS will make the

student's common use their critical thinking and can make key or concept ideas in study English. Especially, in the reading achievement is reading comprehension.





Logan Avenue Problem Solving Heuristic.

D. Hypothesis

Ha: There is a significant effect of using logan avenue problem solving Heuristic learning model on students' reading achievement.

Ho: There is no significant effect using logan avenue problem solving Heuristic learning model on students' reading achievement.

CHAPTER III

METHOD OF RESEARCH

A. Location and Time

This research was conducted at SMA Negeri 21 Medan, JL. Kramat Indah, Kecamatan Medan Denai, Kota Medan, Sumatera Utara. This research focused in tenth-grade of 2019/2020 academic years conducted for approximately 3 week. This location was chosen based on the observation which has been done for one week and it showed that the students in the school still have difficulties in reading comprehension. This research was implemented on July 2019.

B. Population and Sample

The population of this research was taken from tenth-grade students of SMA N 21 Medan academic year 2019/2020, which consist of eight classes. There are X IPA 1 consist of 34 students, X IPA 2 consist of 34 students, X IPA 3 consist of 35 students, X IPA 4 consist of 35 students, X IPS 1 consist of 34 students, X IPS 2 consist of 35 students, X IPS 3 consist of 34 students, X IPS 4 consist of 33 students. So, the total of population was 274 students. The sample was taken by using simple random sampling. The sample class was X IPA 1 which consist of 34 students as the control class and X IPS which consist of 34 students as the experimental class, the total of sample was 68. It shown in the following table below:

Table 3.1**The population and The Sample**

Class	Population	Sample
X IPA 1	34	34
X IPA 2	34	34
X IPA 3	35	-
X IPA 4	35	-
X IPS 1	34	-
X IPS 2	35	-
X IPS 3	34	-
X IPS 4	33	-
Total	274	68

C. Research Design

The experimental quantitative research was applied in this research, with two different groups, experimental group that consist of 34 students and control group consist of 34 students. The experimental group was taught by using logan avenue problem solving Heuristic learning model and control, group was taught by using conventional model. The design of the research shown in table 3.2.

Table 3.2**The Research Design**

Class	Name of group	Pre-test	Treatment	Post-test
X IPS 1	Experimental (X)	ü	Using LAPS Heuristic learning model	ü
X IPA 1	Control (Y)	ü	Using the conventional method	ü

Base on the table, X IPS 1 was experimental group taught by using logan avenue problem solving heuristic and X IPA 1 was control group taught by using conventional model on reading comprehension. There are three stages was conducted in this research, namely pre-test, treatment, and post-test.

a. Pre-test

The researcher given the pre-test to both of classes that are experimental and control class. It was to know the ability in reading before having a treatment. A pre-test regulated to the experimental group and control group. The pre-test was useful to know the mean score of experimental group and control group.

b. Treatment

After having the pre-test, the treatment given to the students, both the experimental and control group. The treatment of experimental group was taught by using logan avenue problem solving Heuristic. While the control group was taught by using a conventional method. The steps in learning process shown in table 3.3.

Table 3.3

Treatment in Experimental Group and Control Group

Meeting	Experimental Group	Control Group
1 (First) Pre-test	1. Teacher greets students to open the class. 2. Teacher given the pre-test to the student. 3. Teacher collected the student's answer sheet. 4. Teacher calculated the	1. Teacher greets students to open the class. 2. Teacher given the pre-test to the student. 3. Teacher collected the student's answer sheet. 4. Teacher calculated the

<p>2 (Second) Treatment</p>	<p>score of the test.</p> <ol style="list-style-type: none"> 1. The teacher explained about the next material, it is about the narrative text. 2. The teacher though by using logan avenue problem solving learning model. 3. The teacher explained about the definition of logan avenue problem solving as a learning model. 4. The teacher given material of lesson about narrative text. 5. The teacher asked the student to see about story of narrative text. 6. Teacher asked students to make a group discussion. 7. The teacher given worksheet that should discussed. 8. The teacher asked the students to read, analyze, ask, and discuss the text. 9. The teacher asked the students about 5 stage questions before the students can solve the problem. 10. The teacher asked the students to remember the 5 stage questions to get the answer of the questions. 11. The teacher asked the students to re-test temporary answers before get the best answer. 12. The teacher asked the student to point randomly some students to represent each group on white board to write the answer from the result of discussion. 	<p>score of the test</p> <ol style="list-style-type: none"> 1. The teacher shared the material about reading text. 2. The teacher asked to the student about the example of narrative text. 3. The teacher asked student to see and find out the difficult word from the text. 4. The teacher written the difficult word based on the text in whiteboard. 5. The teacher explained about the elements of narrative text (social function, generic structure and language features). 6. The teacher asked the student to find the generic structure of the narrative text. 7. The teacher asked student to read the text before answer the questions. 8. The teacher asked students to answer the question in worksheet. 9. The teacher collected the student's answer sheet.
--	---	---

3 (Third) Post-test	13. The teacher discussed the answer of the question together with students to get the best answer. 14. The teacher asked the students to make a conclusion of the problem. 1. The teacher given direction related to the post-test. 2. The teacher given the post-test. 3. The teacher collected the student's answer sheet. 4. The teacher calculated the score.	1. The teacher given direction related to the post-test. 2. The teacher given the post-test. 3. The teacher collected the student's answer sheet. 4. The teacher calculated the score
-------------------------------	---	--

c. Post-test

The post-test given to the student after having a treatment. The post-test was same with pre-test. The post-test was the final test in this research, especially in measuring the treatment. It's mean to know the treatment was given effect to the student's ability in reading especially how to use their critical thinking with the model in the text. In the experimental group and control group, post-test was also regulated. It's mean that to find out the difference of scores of both experimental group and control group before and after giving the treatment.

D. The Instrument of Research

This research used essay test as an instrument in collecting the data, the test which consist of 5 questions. The data of this research was collected by

giving essay test in pre-test and post-test. In the test taken from the student's book with the title *Bahasa Inggris/ kementerian pendidikan dan kebudayaan _ edisi revisi Jakarta: Kementrian dan Kebudayaan, 2017*, the authors are Utami Widiati, dkk. In scoring the student's answer used the rubric assessment. The complete answer got 4 scores, with the criteria of score is 1-4 point for each question. The rubric was inserted in appendices.

1. Validity

The validity of each test was calculated by using person's product moment formula as follows:

$$r_{xy} = \frac{N \sum XY - (\sum X)(\sum Y)}{\sqrt{\{N \sum X^2 - (\sum X)^2\} \{N \sum Y^2 - (\sum Y)^2\}}}$$

Where:

= correlation coefficient

X = the score of items

Y = total score obtained

N = the number of respondent

= number of square of the value X

= number of square of the value Y

2. Reliability

The reliability of each test will calculated by using person's product moment formula as follows:

$$r_{11} = \left(\frac{K}{K-1} \right) \left(1 - \frac{\sum \sigma_b^2}{\sum \sigma_i^2} \right)$$

Where:

r_{11} = the reliability of instrument

k = total of questions

$\sum \sigma_b^2$ = the number of item variants

$\sum \sigma_i^2$ = total of variants.

Based on the testing reliability above, it got the criteria measurement of test reliability if $r_{11} > 0.7$ so the questions was reliable.

E. The Technique of Collecting Data

The data was collected by giving a test to the students. Several steps were used to collect the data:

1. Given pre-test to the experimental and control group.
2. Submitted pre-test to experimental and control group.
3. Given treatment to experimental by using logan avenue problem solving learning model.
4. Given post-test to the experimental and control group
5. Submitted post-test to the experimental and control group
6. Listed the scores of pre-test and post-test in the table to the experimental and control group.

F. The Technique of Analyzing Data

From the data, a calculation was made to find out whether using logan avenue problem solving learning model could be helpful in reading comprehension. The data were calculated by using t-test from Sudijono (2018).

1. Finding the Mean by using the formula:

a. Mean of Experimental Group

$$M_x = \frac{\sum X}{N} \quad (\text{Sudijono, 2018: 81})$$

b. Mean of Control Group

$$M_y = \frac{\sum y}{N}$$

2. Finding the Standard Deviation by using the formula:

a. Standard Deviation (SD) of Experimental Group

$$SD_x = \sqrt{\frac{\sum x^2}{N}} \quad (\text{Sudijono, 2018: 157})$$

b. Standard Deviation (SD) of Control Group

$$SD_y = \sqrt{\frac{\sum y^2}{N}}$$

3. Finding the Standard Error by using the formula:

a. Standard Error of Experimental Group

$$SE_{M1} = \frac{SD_1}{\sqrt{N_1-1}} \quad (\text{Sudijono, 2018: 282})$$

b. Standard Error of Control Group

$$SE_{M2} = \frac{SD_2}{\sqrt{N_2-1}}$$

4. Finding the Standard Error differential between M_x and M_y by using the formula:

$$SE_{M_1-M_2} = \sqrt{SE_{M_1}^2 + SE_{M_2}^2} \quad (\text{Sudijono, 2018: 283})$$

5. Normality test

The normality test was done to see the question items test from each group having normal or normal distribution, the formula as follow:

$$X^2 = \sum \frac{(f_o - f_h)^2}{f_h} \quad (\text{Arikunto, 2010:333})$$

The data taken in using chi-square are:

- a. Summarize the data of all variables that will be tested for normality.
- b. Determine the number of interval classes.
- c. Determine the length of the interval class.
- d. Arranges into a frequency distribution table, which is also a helper table to calculate the chi-square price.
- e. Calculate the expected frequency f_h by multiplying the area percentage of each normal curve field by the number of sample members.
- f. Enter prices f_h into the column table f_h , while calculating prices f_h -
 f_o and $\frac{(f_o - f_h)^2}{f_h}$ and add them up. Price $\frac{(f_o - f_h)^2}{f_h}$ is the price of chi-squared X_h^2 count.

g. Comparing the calculated chi-squared price with the chi-square table.

If the calculated chi-square price is smaller or equal to the chi square of the table ($X_h^2 \leq X_t^2$), then the data distribution is declared normal, and if greater (>) is declared abnormal.

6. Homogeneity

The data homogeneity which used is the result of post-test item test with using F test from post-test, with the formula:

$$F = \frac{\text{the highest varian}}{\text{the lowest varian}}$$

7. Finding t_0 by using the formula:

$$t_0 = \frac{M_1 - M_2}{SE_{M_1 - M_2}} \quad (\text{Sudijono, 2018: 284})$$

Where:

M_x = Mean score of experimental group

M_y = Mean score of control group

N_1 = Number of students in experimental 1 group

N_2 = Number of students in control group

SD_x = Standard deviation of experimental group

SD_y = Standard deviation of control group

SE_{M_1} = Standard Error of Mean of experimental group

SE_{M_2} = Standard Error of Mean of control group

$SE_{M_1 - M_2}$ = Standard Error differential between M_x and M_y

t_0 = Test Observation.

G. Statistical Hypothesis

In this research statistical hypothesis is used to device whether the hypothesis will be accepted or rejected. The statistical statistic formula:

If $t - \text{test} > t - \text{table} = H_a$ is accepted and H_0 is rejected

If $t - \text{test} < t - \text{table} = H_a$ is rejected and H_0 is accepted.

Where:

H_a : There is a significant effect of using Logan Avenue Problem Solving Heuristic learning model on students' reading achievement. (The hypothesis is accepted).

H_0 : There is no significant effect of using Logan Avenue Problem Solving Heuristic learning model on students' reading achievement. (The hypothesis is rejected).

CHAPTER IV

DATA COLLECTION AND DATA ANALYSIS

A. Data Collection

The data was collected by giving the students an essay test that consisting of 5 questions. In this research, the sample was divided into two groups, the experimental and Control Class. Each group was given a pre-test and post-test. The student's score in pre-test and post-test of each group was presented on the table 4.1. Below:

Table 4.1

The Score in Pre-test and Post-test of Each Group

Criteria	Experimental Class		Control Class	
	Pre- test	Post-test	Pre-test	Post-test
Maximum	60	95	70	95
Minimum	40	55	30	60
Mean	47.64	80.59	47.35	72.62
Standard Deviation	13.69		10.31	
Total	1620	2740	1610	2470

The data showed that the highest score of the pre- test in Experimental Class was 60 and the lowest was 40. While the highest score of the post- test was 95 and the lowest 55, while the data showed that the highest score of the pre- test of the Control Class was 70 and the lowest was 30. While the highest score of the post test was 95 and the lowest were 60.

B. Data Analysis

In order to investigate the effect of using logan avenue problem solving heuristic learning model, the next procedure is analyzing the data obtain by following these steps. Each steps was described as followed:

Scores of Data the Effect of Using Logan Avenue Problem Solving Heuristic on Students' Reading Achievement.

Table 4.2
The Score of Post Test on Students' Reading Narrative Text of Experimental Class (X1) and Control Class (X2)

No respondent	X1	No respondent	X2
1	65	1	65
2	90	2	70
3	95	3	80
4	90	4	75
5	70	5	65
6	75	6	75
7	95	7	80
8	85	8	65
9	55	9	65
10	85	10	70
11	85	11	75
12	80	12	60
13	70	13	80
14	65	14	70
15	95	15	70
16	80	16	65
17	80	17	75
18	80	18	75
19	95	19	80
20	80	20	70
21	95	21	80
22	80	22	75
23	85	23	70
24	80	24	80
25	85	25	85
26	70	26	70

27	70	27	75
28	75	28	75
29	80	29	65
30	75	30	60
31	85	31	95
32	90	32	65
33	65	33	70
34	90	34	75
Total	2740	Total	2470
Mean	31.91	Mean	25.14
SD	13.69	SD	10.31
Standard Error	2.38	Standard Error	1.79
Total Squared	7507600	Total Squared	6100900

Table 4.3
Different Score Post- Test in Both Experimental and Control Class

NO	X ₁	X ₂
1	N = 34	N = 34
2	$\sum X = 1085$	$\sum X = 855$
3	SD = 13.69	SD = 10.31
4	Standard E= 2.38	Standard E= 1.79
5	Mean = 31.91	Mean = 25.14

Notes:

X₁ = Results of students' reading achievement taught with LAPS Heuristic

X₂ = Results of students' reading achievement taught in conventional ways.

So from the results of research students who are taught with LAPS Heuristic learning model have an average value of students that was 31,91 with maximum value of 95, while the students taught by conventional way have an average value of students that was 25,14 with maximum value of 95.

1. Normality Test

Experimental Class

The high score = 95

The low score = 40

N = 34

Range (J) = largest data – smallest data

$$= 95-40$$

$$= 55$$

Banyak kelas (K) = $1 + 3.3 \log n$

$$= 6.21 \text{ or } 6$$

Panjang kelas = J:K

$$= 55:6$$

$$= 9.1 \text{ or } 9$$

After got the K = 6 and J:K = 9, the next step is to make a helper table to help its normality.

Table 4.4

Tabel Penolong Normality

Interval	f_o	f_h	$(f_o - f_h)$	$(f_o - f_h)^2$	$\frac{(f_o - f_h)^2}{f_h}$
40-50	1	1.026	0.974	0.948676	0.924635
50-60	4	5.069	-1.0692	1.143189	0.225517
60-71	2	1.026	0.974	0.948676	0.924635
71-79	6	5.069	-1.0692	1.143189	0.225517
79-87	9	12.904	-3.9048	15.24746	1.181534
87-95	12	12.904	-0.9048	0.818663	0.063439
Total	34				3.490752

How determine the price of f_h . The number of class or (K) = 6, so based on the table above is divided into six, each of which is $2.7\% \times 34 = 1.026$, $13.34\% \times 34 = 5.0692$, $33.96\% \times 34 = 12.9048$, $33.96\% \times 34 = 12.9048$, $13.34\% \times 34 = 5.0692$, $2.7\% \times 34 = 1.026$.

From the calculation above, it was got that the chi-square value = 3.490752. The next step is compared the chi-square with table price, with dk (degrees of freedom) $6-1 = 5$. If dk is 5 and the error level is 5%, the chi-square table = 11.070. Because the calculated chi-square is smaller than chi-square table ($3.490 < 11.070$), the distribution of the experimental class is normal.

Control Class

The high score = 95

The low score = 30

N = 34

Range (J) = largest data- smallest data

= 95-30

= 65

Banyak kelas (K) = $1 + 3.3 \log n$

= 6.21 or 6

$$\begin{aligned}
 \text{Panjang kelas} &= J : K \\
 &= 65 : 6 \\
 &= 10.8 \text{ or } 11
 \end{aligned}$$

Known that $K= 6$ and $J:K= 11$, the table 4.5 is a helper table to help test its normality, as follow:

Table 4.5

Tabel Penolong Normality

Interval	f_o	f_h	$(f_o - f_h)$	$(f_o - f_h)^2$	$\frac{(f_o - f_h)^2}{f_h}$
30-41	1	1.026	0.974	0.948676	0.924635
41-52	10	12.904	-2.904	8.433216	0.653535
52-63	9	12.904	-3.904	15.241216	1.181123
63-74	8	5.069	2.931	8.590761	1.694764
74-85	4	5.069	0.931	0.866761	0.170992
85-95	2	1.026	0.974	0.948676	0.924635
Total	34				4.7720455

Based on calculated above, it was found that the price chi-square= 4.7720455.

Because the calculation chi-square is smaller than chi-square table (4.7720455 < 11.070), the distribution of control class is normal.

2. Homogeneity Test

Based on the data of post-test, it was calculated homogeneity testing by using

F test, as follow:

$$F = \frac{\text{the highest varian}}{\text{the lowest varian}}$$

For previous data obtained:

$$N = 34$$

Experimental class variance = 204.3613

Control class variance = 253.0668

$$F_{hitung} = \frac{\text{the highest varian}}{\text{the lowest varian}} = \frac{204.3613}{253.0668} = 1.238$$

The price of F table was obtained from the interpolation of F distribution list

with the real level $\alpha = 0.05$ and $dk_{pembilang} = 33$ and $dk_{penyebut} = 33$.

Where:

$$F_{0.05} (33.30) = 1.805$$

$$F_{0.05} (33.40) = 1.715$$

$$F_{0.05(34.34)} = 1.805 + \frac{33-30}{40-30}(1.715-1.805) = 1.805 + (-0.063) = 1.742$$

It was got F table = 1.742 and can see that F count < F table (1.238 < 1.742) then H_0

is accepted. It means that experimental and control class were homogeneous.

C. Testing Hypothesis

The result above when was applied to test the hypothesis. The t-test value was be seen in the following calculation:

$$\begin{aligned} t_o &= \frac{M_1 - M_2}{SE_{M_1 - M_2}} \\ &= \frac{31.91 - 25.14}{2.97} \\ &= \frac{6.77}{2.97} \\ &= 2.27 \end{aligned}$$

Ha: The value of the t_o was higher than the value of the t_{table} ($t_{observe} > t_{table}$), to Where t_{table} value for the degree of freedom was calculated as follows:
It was obtained $t_o = 2.27$, while t_{table} , $dk = 34 + 34 - 2 = 66$, $\alpha = 0.05$. So:

$$t_{(0.05,60)} = 2.000$$

$$t_{(0.05,120)} = 1.980$$

$$\begin{aligned} t_{table} &= 2.000 + \frac{66-60}{120-60} (1.980-2.000) \\ &= 2.000 + (-0.002) \\ &= 1.998 \end{aligned}$$

Based on the calculation above, it found that $t_o = 2.27$ and $t_{table} = 1.998$. It means that the value of $t_{observe}$ was higher than t_{table} ($2.27 > 1.998$). Therefore, alternative hypothesis (H_a) was accepted.

1. Testing Validity

Testing the Validity of Problem Items Test validity is a measure that shows the validity of the test you want to use. The test is said to be valid if $r_{\text{count}} > r_{\text{table}}$. The formula used stated by Arikunto: 2010, namely:

$$r_{xy} = \frac{N \sum XY - (\sum X)(\sum Y)}{\sqrt{\{N \sum X^2 - (\sum X)^2\} \{N \sum Y^2 - (\sum Y)^2\}}}$$

From the validity of pre-test and post-test shown in the calculation bellow, as follow:

Pre-test

Question 1:

$$= \frac{\sum(X - \bar{X})(Y - \bar{Y})}{\sqrt{(\sum(X - \bar{X})^2)(\sum(Y - \bar{Y})^2)}}$$

$$= \frac{10(10 - 5)(10 - 5)}{\sqrt{10(10 - 5)^2(10 - 5)^2}}$$

$$= \frac{100}{100}$$

$$= 0.72$$

Then, for the next validity test of question 2 until 5 could see in appendices. The calculation above was got = 0.361 at the real level $\alpha = 0.05$. If $t_{count} > t_{table}$, so the question item was valid. The table 4.7 below make it easy to see the comparison of $t_{count} > t_{table}$ as follow:

Table 4.6

The Validity of Pre-test Items Test

Questions' Items			Explanation
1	0.72	0.361	Valid
2	0.53	0.361	Valid
3	0.70	0.361	Valid
4	0.46	0.361	Valid
5	0.77	0.361	Valid

Post-test

Question 1:

$$r_{xy} = \frac{N \sum XY - (\sum X)(\sum Y)}{\sqrt{[N \sum X^2 - (\sum X)^2][N \sum Y^2 - (\sum Y)^2]}}$$

$$= \frac{\dots}{\dots}$$

$$= \dots$$

$$= 0.87$$

The calculation above was got = 0.87 and was got = 0.361 at the real level $\alpha = 0.05$. So $0.87 > 0.361$, it was valid. Then, for the next validity test of question 2 until 5 could see in appendices. The table 4.8 below make it easy to see the comparison of $0.87 > 0.361$ as follow:

Table 4.7

The Validity of Post-test Item Test

Questions' Items			Explanation
1	0.87	0.361	Valid
2	0.70	0.361	Valid
3	0.58	0.361	Valid
4	0.73	0.361	Valid
5	0.48	0.361	Valid

2. Testing Reliability

Item Reliability Test Question

The ability of students to reading comprehension in narrative text.

To test the reliability of the test in the form of description, an alpha formula is used stated by Arikunto, namely:

$$r_{11} = \left(\frac{K}{K-1} \right) \left(1 - \frac{\sum \sigma_b^2}{\sum \sigma_t^2} \right)$$

$$r_{11} = \left(\frac{5}{5-1}\right) \left(1 - \frac{110.6111}{219.555}\right)$$

$$r_{11} = (1.25) (0.50379)$$

$$r_{11} = 0.62$$

Post-test

Question 1:

$$N = 30$$

$$\sum X_1 = 495$$

$$\sum X_1^2 = 9375$$

$$K = 5$$

$$\sigma_1^2 = \frac{\sum X_1^2 - \frac{(\sum X_1)^2}{N}}{N} = \frac{9375 - \frac{(495)^2}{30}}{30} = 40.25$$

With used the same way like above, so it got the value of each variants in table 4.

13 as follow:

Table 4. 9

The Reliability Post-test Item Test

Questions' Item	Variants
1	40.25
2	45.58
3	54.33
4	41.55
5	64.88
Total	246.6111

So, the value of each variants ($\sum \sigma_b^2$) = 246.6111

While, total number of variants namely:

$$\sigma_t^2 = \frac{\sum Y_1^2 - \frac{(\sum Y_1)^2}{N}}{N} = \frac{2040 - \frac{(154900)^2}{30}}{30} = 539.333$$

So, it was obtained:

$$r_{11} = \left(\frac{K}{K-1}\right) \left(1 - \frac{\sum \sigma_b^2}{\sigma_t^2}\right)$$

$$r_{11} = \left(\frac{5}{5-1}\right) \left(1 - \frac{246,6111}{539,333}\right)$$

$$r_{11} = (1.25) (0.45725)$$

$$r_{11} = \mathbf{0.67}$$

Table 4. 10

Interpretation of the Correlation Coefficient

Coefficient Interval	Level of Relationship
0.00- 0.199	Very low
0.20- 0.399	Low
0.40- 0.599	Normal
0.60- 0.799	Strong
0.80- 1.000	Very strong

For reliability item test of pre-test was $r_{hitung} = 0.62$ to $r_{table} = 0.361$, with $N = 30$, $\alpha = 0.05$. It was reliable because $r_{hitung} > r_{table}$, and for post-test was $r_{hitung} = 0.67 > r_{table} = 0.361$, with $N = 30$, $\alpha = 0.05$. So, the questions item was reliable and had coefficient interval 0.60- 0.799, it had strong level of relationship between Pre-test and Post-test.

D. Research Findings

Based on the data analysis above, the findings of this research were described that the students who were taught by LAPS Heuristic learning model got higher score than who were taught by using conventional model. It is also proved from the result of $t_{observe}$ which was 2.27 and t_{table} which was 1.998 ($t_{observe} > t_{table}$, $2.73 > 1.998$). It meant that H_0 was rejected and H_a was accepted.

CHAPTER V

CONCLUSION AND SUGGESTION

A. Conclusion

Based on the analyzing the data it was found that there was a significant effect of using logan avenue problem solving heuristic learning model on students' reading achievement. It was proved from calculated of t_{count} which was higher than t_{table} , $2.27 > 1.998$, at $\Gamma = 0.05$, and $df = 30$ it meant that the alternative hypothesis or H_a was accepted.

B. Suggestion

Related to the conclusion above, some suggestions were put as the following:

1. The English teachers, use to various in teaching English especially in reading text by using logan avenue problem solving learning model toward students' reading achievement.
2. The students should able in improving their reading comprehension through logan avenue problem solving learning model toward students' reading achievement so that they can understanding with critical thinking use this model on reading comprehension of narrative text.
3. The other researchers, who are interested in conducting the same study of this research.

REFERENCES

- Anggraini, Ira. 2017. *The Effect of Using Give One Get One Move on (GOGOMO) on Students' Achievement in Reading*, thesis. Faculty of Teacher Training and Education. Medan: University of Muhammadiyah Sumatera Utara.
- Anggrianto, Desy, dkk. 2016. Improving Critical Thinking Skills Using Learning Model Logan Avenue Problem Solving (LAPS)-Heuristic. *Education and Practice Journal*, 7 (9): 128- 129.
- Arikunto, Suharsimi. 2010. *Prosedur Penelitian*, Jakarta: Rineka Cipta.
- Dogan, Birsen. 2014. Prospective Teachers' Reasons: The Importance of Reading a Book. *Bilgi Dunyasi*, 15 (1): 160.
- Fahmei, Rayendriani Lubis. 2014. Writing a Narrative Text. *English Education Journal*, 2 (1): 68.
- Hall, Leigh A, et al. 2011. *Empowering Struggling Readers*. United States of America: The Guilford Press.
- Ngabut, Maria Novary. 2015. Reading Theories and Reading Comprehension. *English as a foreign language journal*, 5 (1): 26-27.
- Nur, Andi Herdiana, and Djuwairiah Ahmad. 2017. Improving Students' Reading Skill Through Interactive Approach at the First Grade of SMAN 1 Mare, Bone. *Universitas Islam Negeri Alauddin Makassar*, 3 (1): 47.
- Pandia, Nelli Irmayani. 2018. *The Effect of Using Index Card Match Technique to the Students Achievement in Learning Reading Comprehension*, Thesis. Faculty of Teacher Training and Education. Medan: University of Muhammadiyah Sumatera Utara.
- Rahmawati, L. 2014. The Effect of CIRC Strategy and Achievement Motivation Toward Students' Reading Comprehension. *Program Pascasarjana Universitas Pendidikan Ganesha*, 3: 2.
- Shoimin, Aris. 2014. *68 Model Pembelajaran Inovatif Dalam Kurikulum 2013*. Yogyakarta: Ar-Ruzz Media.
- Sudijono, Anas 2018. *Pengantar Statistik Pendidikan*. Depok: Raja Gravindo Persada.
- Togoby. Ole. 2010. A Model of Text Types and Genres. *English Journal*, :8.