

CHAPTER I

INTRODUCTION

This chapter discusses the general description of the research which includes: the research background, the problem statements, the research questions, the research objectives, the research significance, the research scope and limitation, and the operational definition.

1.1 The Research Background

Recent education demands people to have the ability to solve problems appropriately by applying critical thinking. Getting knowledge by memorizing is just for beginner learners. The knowledge they memorized easily passed as long as they never applied or used it. However, the knowledge stays longer if people frequently practice and utilize it in their lives. Critical thinking is a kind of cognitive practice that needs a process to obtain results. The achieving goal is to be rational; and have quality in reasoning and problem-solving. Students with these kinds of abilities can communicate effectively as well as solve complex problems. They will be creators, critical thinkers, decision-makers, evaluators, open-minded, and intelligent people.

As a matter of fact, to have the ability to think critically requires some exercise. In classroom situations, teachers as well as lecturers encourage students to think critically. Designing and creating learning objectives that accommodate tasks and activities, facilitating students' critical thinking, is demanded nowadays. Lucia, Sofia, and del Pilar (2017) argue that developing critical thinking, which is inherent in education during teaching practices, is a must since societies need citizens who facilitate their progress. Anderson (2000) says that teachers could organize their goals and create categories or types of questions to build critical thinking and active learning. Moreover, types of questions range from a very low level, that is, remembering, and then followed by understanding, applying, analyzing, and evaluating, and a very high level is creating.

This research is inspired by applying types of questions as guidance to students to write. By asking questions, the students process their minds to and carry out writing tasks. They show their qualities of thinking and creating by convincing their arguments, which reflects critical thinking. Their writing products are hopefully increased as they are trained to build their



critical thinking. At first, students are asked simple questions to respond by producing their memorization and their understanding of particular knowledge. Next, they are given more complex questions to make them think about how to apply, analyze, and evaluate until they create something. Finally, the students can improve their writing products and critical thinking as well.

Besides the demand to create critical thinking students, in reality, students live and engage in a multicultural environment. Multiculturalism is the phenomenon in a classroom situation in which students come from different places, bringing their own cultures. An Environment where the students engage in study together must be created to develop multicultural perspective skills to attain inclusive education. The students' competence to increase their perspective on individuals from a different culture is an important factor to be well-designed in the form of self-development and training. The goal is to develop a multicultural perspective to create inclusive education regardless of students' differences and to build tolerance in the environment. This phenomenon inspired the researcher to frame culturally-integrated material, critical thinking, and writing skills for tertiary-level students: reconstructing schema theory. It means designing classroom activities in which the students discuss local cultural content by prompting students with higher-order thinking questions to trigger them to think critically and then incorporate it into their writing. As long as the discussion occurs, there will be the influence of schema on students' learning to adapt to how the information is gathered and managed.

The first thing to do is to frame culturally-integrated material by designing and structuring materials for teaching. KNBBS (Knowledge and Science Bulletin Board System) and Sharer (2023) mention that cultural integration is a complex process of merging different cultural backgrounds and practices into a cohesive whole. In addition, Sharer explains the concept of cultural integration as the process of combining different cultures into a unified whole that occurs through the sharing of customs, beliefs, and practices among different cultures. So, culturally-integrated material is materials designed in teaching-learning activities to merge and combine different cultural backgrounds and cultural issues.



The second thing is framing critical thinking and writing skills in the teaching and learning process. Critical thinking is defined by Scriven and Paul (1987) as an analytical, active, and skillful process to the concept, apply, analyze, synthesize, and evaluate information which is gained from observation, experience, reflection,

reasoning, or communication. In this research, the process of gaining critical thinking involves students with the skilful process of experience and communication to understand, apply, analyze, evaluate, and create something by responding to questions. After the activities of discussing culture and answering critical thinking questions are conducted, the students write about the results of the communication or discussion in their composition. Since writing is a productive skill in English that shows the language ability of a student to communicate ideas and opinions in written form, it becomes the English skill that is developed in this research.

In fact, learning about other cultures requires someone to understand knowledge about culture, including concepts of religion, values and beliefs, and customs or traditions. They become some attributes of cultural understanding. Exploring sorts of cultures as the subject matter to be discussed is the center of designing self-development and training. However, not everyone is familiar with the other culture, even their own culture. Sometimes, they use their schema or background knowledge when they are involved in the discussion. The basic assumption of schema theories describes the influence of an individual's prior experience on how new information is perceived, comprehended, and remembered (Brewer & Treyners, 1981). Some students do not know or have already known about the concepts discussed. They try to search for the explanation of the concepts, so the activity can run properly. It happens especially when the concepts are new to them. But if they know the concepts well, they are easily involved in discussion.

Concerning schema theory, the grounded theory of the research is based on Piaget's theory. Piaget (1952) defined a schema as "a cohesive, repeatable action sequence possessing component actions that is tightly interconnected and governed by a core meaning. Furthermore, Piaget and Inhelder (1973) show the modification of memory by schema development happening through learning and recall. Schemas can be changed and reconstructed throughout a person's life. The two processes for doing so are assimilation and accommodation. Assimilation is the process of integrating new knowledge into existing schemas by editing the new knowledge to ensure an acceptable fit. Accommodation, in contrast, is the process of changing the cognitive organization of schemas in response to new knowledge. It occurs when the existing structure cannot account for the new information (Santrock, 2023). This research aims to reconstruct schema theory whether



assimilation or accommodation has more impact or influence on learning about cultures.

Previously, people obtained knowledge by reading printed materials, watching television, and listening to the radio. But since the Industrial Revolution 4.0, technology and communication are growing fast. The advanced technology is supported by internet networks that spread all around the world. Education is also changing by applying technology in the process of teaching and learning. Students need computers and the Internet to facilitate their learning. Accidentally, printed reading materials are replaced by e-books and e-learning sources. They do not need to go to a library or a bookstore to find the books; Otherwise, they immediately find the sources of information easily by clicking the buttons or touching the screen of their computer, laptop, or mobile phone. Life becomes easy and quick.

Based on the lecturer's observation during class activities, students prefer to find knowledge and information by googling or searching on any devices, like websites and applications by using the internet. The advanced technology today has changed people's habits, as previously they enjoyed reading books to obtain knowledge, but today, by quickly searching and finding it immediately they can get the information they need. It raises the question of whether having prior knowledge is still demanded today. If the researcher goes further on the theory of schema proposed by Jean Piaget in Cognitive Development, that is assimilation and accommodation, there must be some changes in the process of getting new information. Based on Piaget's theory, the process of learning requires the learners to undergo adaptation through assimilation and accommodation.

During class discussions, learners do an adaptation through assimilation by using the existing schema to deal with a new learning/situation to understand a new concept. Otherwise, learners do not use their existing schema in the process of accommodation since the schema does not work and needs to be changed to deal with new learning (Rahmat, Othman, Muhammad, Shirin, & Arepin, 2019). So, in the learning situation where the students are involved in communication need to search for concepts and information using learning devices, whether they undergo both assimilation and accommodation or not. The assumption underlying Piaget's theory about assimilation and accommodation during class discussion has inspired



researcher to integrate the first idea of the research with reconstructing schema / disclosing how schema influences students' writing process including | and managing the ideas and information.

As it is mentioned previously, this research is also intended to find whether Piaget's theory of Schema is still relevant to the conditions and situations right now because of the advanced technology. There is a change in students' habits that might cause a difference in students' learning, especially when they discuss multicultural knowledge and perspectives. The researcher hopes this research is beneficial to people who are aware of cultural differences to build tolerance in society through discussing the subject matter of culture. Similarly, this research gives an idea of being able to assimilate with other communities or to adapt quickly when encountering groups from unfamiliar cultures. In line with adaptation theory, observing class activities is undertaken to ensure that having prior knowledge or not is not a problem to be involved in discussion, depending on the results of the research, since the technology of communication enables them to immediately search the information. It means students minimize their anxiety by not being successfully involved in particular discussions because of a lack of knowledge and information, since they could abuse the internet and technology.

Actually, this research aims to develop a teaching model on how to teach writing by framing and implementing culturally-integrated material, critical thinking, and writing skills of tertiary-level students. The output of the research is the model of teaching writing and a course book. The critical thinking process is gained through asking questions about local culture that range from low-level to high-order level of thinking. By responding to these questions, students think critically and gain ideas to produce writing about cultures. This research also utilizes a scoring rubric for assessing students' writing ability as well as students' critical thinking in the new model of teaching. After developing the design of the teaching writing model by framing culturally-integrated material, critical thinking, and writing skills, the model will be implemented to tertiary-level students to discover the effect of the model on students' writing ability and critical thinking.

Writing is the focus to be developed since the researcher is more concerned about this skill. Students who are studying at the university level are supposed to write their final task or thesis as one of the requirements to accomplish their task as a finishing period of learning at university. Frequently, they face problems in writing their thesis. The problems are generally on how to get ideas to write. Sometimes, they lack writing ability, such as: how to organize w to write with limited errors in grammar, and how to minimize other errors



in elements of writing. Moreover, the students are required to write or communicate their ideas with critical thinking by giving reasons, arguments, and evaluations.

In fact, this research intends to describe the profile of the teaching of English writing at the tertiary level in the English Literature Department in Samarinda to show that the new model of teaching writing deserves to be developed and implemented in accordance with the demand nowadays. After finishing their thesis writing, students should present their thesis and take an examination. At this stage, they must deliver their argument and point of view to ensure that the data and the analysis are dependable. Therefore, both writing ability and critical thinking are necessary and deserve to be developed.

Furthermore, developing critical thinkers for academic purposes is one side to accomplish the studying period during studying at college or university. After the students finish and engage in society and the labor market, they need to develop their personal lives by applying their education and the ability to think critically and communicate to change professional circumstances. It is in line with the idea declared by the American Association of Colleges and Universities that critical thinking is important in education and aims to prepare students for college, the workforce, and responsible citizens. So, critical thinking and communication should be promoted in education.

In brief, this is a research and development (R & D) study that focuses on developing a model of teaching writing by framing culturally-integrated material, critical thinking, and writing skills of tertiary-level students. The product or the output of this research is a model of teaching writing and a course book. To validate and evaluate the model of teaching writing, experimental research is conducted by implementing the model to discover the effect of using it on students' writing ability. During the implementation, critical thinking ability is gained and trained through asking questions about local culture that range from low-level to high-order level of thinking. By responding to these questions, students think critically and gain ideas to produce writing about cultures. During the process of discussion about local culture, this research observes and wants to disclose how schema influences students' writing process, including gathering and managing ideas and information.

Furthermore, both the writing ability and critical thinking of students are being



l by using a scoring rubric, which is also implemented through this

. In addition, reconstructing schema theory is gained from the data observation and questionnaires.

1.2. The Problem Statement

Problem statements are prominent to state since there are some demands and gaps in education to be fulfilled by conducting research. The problem statements are as follows:

1. It is demanded in education to produce qualified graduates who have critical thinking and communicative competence to change professional circumstances for academic purposes and engage in society and the labor market. Critical thinking and communicative competence are challenging in education nowadays. It is important to produce the teaching writing model and a course book incorporating critical thinking activities to achieve communicative competence reflected in writing results.
2. It is demanded in the global world to have multicultural perspectives to attain inclusive education. Learning about different cultures achieves good character, an open-minded attitude, and tolerance regardless of differences and discrimination. It is important to prove that framing and implementing culturally-integrated material in teaching EFL (English as a foreign language) is necessary to attain inclusive education and communication goals in language teaching.
3. Advanced technology influences students' learning and might impact on adaptation (assimilation and accommodation) process in schema theory. Having existing schema to fit a new knowledge is urgently required, or changing existing schema to fit a new knowledge gives more contribution to the learning process in this era of technology. It is important to reconstruct schema theory on comparing the adaptation (assimilation and accommodation) in schema theory that influences students' writing process including gathering and managing the ideas and information.

1.3. The Research Questions

The research questions contain some problems to be solved during the research period. They become the guidance and main concerns of this research.

The following are the research questions of this study:

1. What is the profile of the teaching of English writing at the tertiary level in the literature Department in Samarinda?
2. How is the teaching of English writing implemented using culturally-integrated material in reference to critical thinking skills?



3. What is the effect of teaching writing using culturally-integrated material in reference to critical thinking skills on students' writing ability?
4. How does schema influence students' writing process including gathering and managing the ideas and information?

1.4 The Research Objectives

In line with the research questions mentioned previously, the following are the research objectives to be aims to achieve. This research has directions:

1. To illustrate the profile of the teaching of English writing at the tertiary level in the English Literature Department in Samarinda.
2. To describe the teaching of English writing implemented using culturally-integrated material in reference to critical thinking skills.
3. To discover the effect of teaching writing using culturally-integrated material in reference to critical thinking skills on students' writing ability.
4. To disclose how schema influences students' writing process including gathering and managing the ideas and information.

1.5 The Research Significances

There are some contributions of this research for developing knowledge and giving students some experiences in learning. The contributions of this research which become the research significances are divided into two, theoretical and practical significances.

1. Theoretical significance of the research.

This research is expected to contribute to developing knowledge on designing the model of teaching writing by framing culturally-integrated material, critical thinking, and writing skills of tertiary-level students: reconstructing schema theory. It also contributes to inclusive education by introducing local culture to students regardless of people's differences and discrimination. During the process of discussion, it also reveals whether assimilation and accommodation happen to appoint the necessity of schema in influencing students' writing process including gathering and managing the ideas and information.

2. Practical significance of the research.

This research is expected to contribute to lecturers and students who use the application of the models in teaching and learning. The lecturer can use the model of teaching writing by framing culturally-integrated material, critical



thinking, and writing skills of tertiary-level students: reconstructing schema theory. The scoring rubric is also utilized to assess writing results by applying the critical thinking process to teach the students. Moreover, the students get to experience and benefit from their learning process using the new models with the expectation of their effect on students' writing ability, critical thinking, and inclusive education. In addition, the students' experiences on how using technology influences their learning adaptation (assimilation and adaptation).

1.6 The Research Scope and Limitation

The research scope and limitation describe the subject or object, its location, and also the focus of the research. The determination on those matters is necessary to avoid excessive data and to fulfil time effectiveness. This research designs models for teaching writing by framing culturally-integrated material, critical thinking, and writing skills of tertiary-level students. The critical thinking here means applying high-order thinking questions, which are introduced by Anderson and Krathwohl (2001) and elaborated by using the examples of questions by Crawford, Saul, Mathews, and Makinster (2005). The ranges of the questions are on the level of remembering, understanding, applying, analyzing, evaluating, and creating. These higher-order thinking levels are in line with Bloom's Taxonomy cognitive domain revised, which ranges from remembering, understanding, applying, analyzing, evaluating, and creating.

This research is limited to being applied in the English Literature Department of the Faculty of Cultural Sciences and English Education Department of Faculty of Teacher Training and Education, especially to the students who follow writing classes. Besides designing and applying the model, this model is also measured to discover the effect of it on students' writing ability.

The culturally-integrated materials are limited to local cultures in Kalimantan including: Dayak Culinary, Dayak Traditional Music (Sapeq), Dayak Benuaq Traditional Ceremony of Belian, Dayak Kenyah Traditional Ceremony of Mecaq Undat, Kutai Traditional Ceremony of Erau, Dayak Traditional Dances (Gantar Dance and Hudoq Dance), Dayak Tribe, Lamin House, Kaharingan Beliefs Kutai Belenggang Ritual, Dayak Kenyah Death Ritual, and Dayak Kenyah instrument of Jatung Utang.

The limitation is also applied in determining the theory of schema. Jean Piaget's theory of adaptation, that is assimilation and accommodation, is utilized to



analyze whether students' schema involved regarding the discussion about cultures in which the multicultures are the phenomenon of class situation.

1.7 Operational Definition

To avoid bias by using terms that are not appropriate and meaningless to this research, it is prominent to define particular terms that support and are meaningful to the research. The following are some important terms:

1. Critical thinking is the ability to think rationally, logically, reasonably, emphatically, and intellectually. This ability can be reflected in the action which is self-guided and self-disciplined. This ability enables critical thinkers to communicate effectively, and solve complex problems. In this research, achieving students' critical thinking ability is done through the process of asking questions with high-order thinking questions while the students respond to them by writing.
2. Writing ability is students' competence to write academically by following the procedures and guidelines on how to produce good writing containing criteria of a good main idea, enough supporting sentences, appropriate content, unity and coherent paragraph organization, correct mechanical aspects of writing, and free of grammar errors.
3. Levels of questions are questions with different levels based on the order from low to high-order thinking questions. They range from questions asking for remembering, understanding, applying, analysing, evaluating, and creating.
4. Scoring rubric is an evaluation criteria/aspects containing grading standards based on students' performance or written assignment which consists of a set of scoring values grouped into categories.
5. Culturally-integrated material is a guidance relying on cultures (source, target, and/or international cultures) in teaching-learning activities focusing on materials to be used as the product of humans with different cultural background and issues during their lives. In this research, the topics or issues of discussion to be discussed are around ethnic cultures in Kalimantan, including arts, traditional ceremonies, culinary, values and beliefs, and human traits or characteristics. The aim is to appreciate a different cultural perspective and preserve cultural identities.
6. Schema is a knowledge structure based on experience that can increase its

ty through learning and bridging new knowledge to older ones. The of old knowledge that is stored in the schema is developed through and recall. Schema refers to a single, specific mental framework or



structure that an individual uses to understand and interpret information in a particular situation or context, while schemata (plural) refer to a collection or network of interconnected schemas that an individual has developed over time through their experiences and learning.

7. Assimilation is a process of assimilating new experiences with old ones. It occurs when the new experience is not very different. In this research, assimilation means learners use their existing schema.

8. Accommodation is a process of changing schemas to fit in the new information. It occurs when the new experience is very different. In this research, learners do not use their existing schema in the process of accommodation.

9. The model of teaching is a plan to design instructional material, guide instruction, and educational activities dealing with learning environment that provide teaching technique, content/material development, classroom management plan, and presentation method to make effective and interactive atmosphere to improve the curriculum.

10. Reconstructing schema theory means the action of rebuilding, restoring, or creating schema theory or knowledge from the past into the new knowledge in order to create an accurate understanding about it or to get complete description depending on the research results. Schema theory is the basic theory or grounded theory that might be given further description to complete and ascertain for specific subject and situation.



CHAPTER II

LITERATURE REVIEW

In order to support the objective of the research, some supporting theories are necessary as the framework to design a teaching model for teaching writing by framing culturally-integrated material, critical thinking, and writing skills. In addition, some theories for reconstructing schema theory are necessary. The supporting theories include the concepts of critical thinking, the concepts of levels of questions, the concepts of quality of students' thinking through writing and a scoring rubric, taxonomy, Piaget's Theory of Cognitive Development, Schemata, Assimilation and Accommodation, Culture, and Advanced Technology. Before discussing the concepts, the researcher presents the previous research which supports and shows the research gaps of this research.

2.1 Previous Research

Some researchers conducted their research associated with critical thinking, teaching, and learning. One of the research projects was done by researchers from Thailand named Changwong, Aukkapong, and Sisan. The article was published in the Journal of International in 2018 titled Critical Thinking Skill Development: Analysis of a New Learning Management Model for Thai High School. That research developed a new critical thinking learning management model which is called the PUSCU Model consisting of a five-step learning management model. PUSCU Model was tested for 16 weeks toward 35 experimental studies students, while the other 34 students were treated by using traditional learning. The results indicated that the experimental group had higher average scores in terms of critical thinking ability and academic achievement.

The similarities between previous research and this research are in developing a model for teaching and learning and also utilizing experimental research to find out the significant effect or difference in the treatment using the new model developed. The differences are in the level of the subjects, the model, and the design of experimental research. The previous research gives an impact on building critical thinking.



The other research was conducted by Rubiyanti, Badarudin, and Eka, it was published in the Journal of Educational Studies in 2020 and titled Improving Critical Thinking Skills and Learning Independence Using Problem-Based Learning Based on Science Literation. That research applied the method of classroom action research which has an intention to improve students' critical thinking and learning independence by using the PBL model on scientific literacy. There were 28 students involved in this project. The results showed that in the first cycle, students gained critical thinking skills with enough categories, which increased in cycle II with good categories. While Independence Learning got a good category in both cycles. This proves that PBL based on scientific literacy can improve critical thinking skills and independent learning.

The similarities between the previous research and this research are in using the particular model to see the different results of students' critical thinking skills before and after the treatment. The differences are in the model used, the previous research does not develop the model but it uses the existing model of PBL, while this research develops a new model for teaching instruction. The method used is also different between the previous research and this research. The previous uses classroom action research, but this research uses experimental research. The previous research provides problem-based learning as a tool to be treated for the students which gives inspiration for this research to utilize high-thinking order questions as the problems to be solved to prompt them to write.

The other previous research is Critical Thinking Skill in Education, A Systematic Literature Review done by Nor and Sihes, which was published in the International Journal of Academic Research in Business and Social Sciences in 2021. That research searched for data on critical thinking in education and found that there were 754 publications published between the years 1944 to 2020. The results showed an increase in the number of works on critical thinking in teaching which indicates a growing awareness of its importance and specific requirements in 21st-century learning education. Since many educators aim to prepare students to think critically as a quality sought by employers of university graduates, critical thinking was seen as a significant factor in the educational process.

The similarity is in the focus of both previous research and this research is thinking in the educational field. The difference is in doing the research, the previous research analyzed the data of critical thinking researches, but this research creates a teaching model to be applied to getting



the effect to students' critical thinking. The previous research inspires this research that critical thinking is demanded today to increase students' quality through the educational process. It is proven that many educators and researchers are interested to apply and do research to promote critical thinking.

The other research concerning critical thinking conducted by DeWaelche entitled Critical Thinking and Student Engagement in Korean University English Courses explores the viability of higher-level questioning in student-centered activities to elevate critical thinking and increase student engagement among Korean University English majors. Mixed methods were used to reveal that cultural and institutional factors, as well as limitations in English language proficiency, can impact participants in student-critical thinking activities.

The similarities between the previous study and this study lie in the use of higher-level questions of Bloom's Taxonomy and small-group conversation activities to prompt the participants to pose and respond to the questions and the use of mixed methods as the methodology. The difference lies in the purpose of the research in which the previous one increases student engagement among Koreans and reveals the factors that impact participation in student-critical thinking activities. The previous research inspires the researcher to elevate critical thinking by using higher-level questioning of Bloom's Taxonomy.

Furthermore, the previous research on critical thinking entitled The Effect of the Deep Dialogue Critical Thinking's Method (DDCT) to Improve Scientific Writing on Students was carried out using a quasi-experimental research design that involved 25 psychology students. The results showed that the DDCT method was effective in improving the student's ability to write scientific papers. It has similar outcomes to writing skills with this research and the use of experimental research to see the effect of a particular method. The difference is on the method used in which this research develops and experiences the writing model. The previous research inspires this research to have dialogues to trigger students' critical thinking.

The next research entitled Critical Thinking in ELT: Indonesian Teachers' Understanding and Practice Ten Years Down the Track was done by Maya and Wilson to investigate teacher's understanding of critical thinking as they hold the role in promoting it. The qualitative research survey that involved 64 English teachers found that teachers did not yet have comprehensive knowledge of critical thinking which was reflected in their teaching practice and assessment of



students' critical thinking. This condition gives inspiration for this research that critical thinking is still a challenge today although the critical thinking idea has been buzzed for many years ago. The similarity is just in the idea of promoting critical thinking to make people understand how important critical thinking is. The difference is in the methodology used in which the previous research did a survey to obtain the data, while this research treats critical thinking activities to raise students' understanding.

Another research showing that critical thinking is still a challenge today was conducted by Widyastuti entitled *Fostering Critical Thinking Skills through Argumentative Essay*. This previous research was conducted to investigate how the elements of critical thinking were displayed in students' essays so as to reveal the development of critical thinking skills. The results showed that there were many weak arguments in the essays due to insufficient reasons and evidence. It was found from the discussion that students did not have enough understanding about the critical nature of an essay they needed to produce during the course and about the language expressions that could help construct their critical arguments. It inspires this research that treating the students to have an understanding of critical thinking and pouring critical thinking into their writing is not an easy matter, such kind of practice is still needed nowadays. The Similarity between the previous research and this research is in developing students' critical thinking reflected in their writing skills, but the difference is in treating students' experience to develop the skills.

There are some articles investigating about culture-based and culturally-integrated material which have the same focus on teaching and learning as this research. Research entitled *Culture-Based Teaching and Learning for Indonesian as a Foreign Language in Yogyakarta* was conducted by Zuchdi & Nurhadi in 2019, and investigated T&LIFL (Teaching & Learning Indonesian as a Foreign Language) at six universities in Yogyakarta. The investigation consisted of some cultural aspects regarding program management, learning material, learning media; teaching approaches, methods, and strategies; learning assessment, and program evaluation. This research used a mixed-method design by using instruments of questionnaires, interviews, and observation. The results showed that T&LIFL

; were not conducted properly, they had not been reflected and were culture-based.



The previous research has similarities to this research in terms of using cultural material as the focus of investigation for teaching and learning. The differences are in the foreign language studied: Indonesian for previous research and English for this research. The previous research analyzes the implementation of T&LIFL programs based on culture-based but this research develops a teaching and learning model that integrates cultural materials and critical thinking in writing. The benefit of the previous research is to remind the researcher of the cultural aspects that could be applied properly in arranging the model.

The other research entitled *Mandar Culture-Based English Education* conducted by Rafiq & Munawir in 2017. The purpose of this article is to describe a model of English language learning based on Mandar culture. The descriptive method was used in this study; while collecting the data was done by using observation techniques, questionnaires, and documentation. Applying Mandar cultures in English language learning can improve English language students and the students can preserve Mandar culture and increase student interest and critical thinking skills. The similarities are in creating a model of English language learning based on culture and increasing students' critical thinking. The difference is in regard to cultures, the previous research produces a model based on Mandar cultures, but this research produces a model based on Kalimantan cultures. The benefit of the previous research to the research is how to create a model of teaching that can increase interest and critical thinking by using group discussion, collecting information, making videos, and presenting it.

The further previous research is *English Textbook: A Culture-Based Analysis* written by Fahik in 2020. This article presented the results of the analysis of the cultural content of a textbook curriculum 2013 entitled *When English Rings the Bells* used by students in grade VII of junior high school. The cultural content of the book was grouped according to Byram's theory which classifies the cultural content of the textbook into eleven parts and analyzed the contents of culture in the textbook. The analysis showed that ten cultural categories were found in the textbook. The most reviewed cultural contents are social identity and social group, behavior and belief, and geography. The similarity between the previous research and this research is in selecting cultural content. The difference between the research and this research is the previous analyzes of cultural content in book, but this research utilizes cultural content to build the model for



teaching and learning. The benefit of the previous research to this research is giving insight into parts of cultural content that might be used to build the model.

Furthermore, there is another interesting research entitled Local-Culture-Based Materials in Online Cooperative Learning: Improving Reading Achievement in Indonesian Context researched by Darong in 2022. The aim of this study was to examine the effectiveness of CL in question along with local-culture-based materials toward students' reading achievement. The research design was mixed-method incorporating a cluster-random sampling technique of the third-grade college students as the population. Post-tests and interviews were carried out to get the data. The findings demonstrated that online Cooperative Learning (CL) along with local culture-based materials was of benefit for better students' reading achievement. This occurred as the pupils have a good knowledge background to understand the texts in classroom activities. More importantly, students' ability to predict the idea of the text was better.

The similarities between this previous research and this research are utilizing cooperative learning and local cultural materials. Both researches use experimental research design to find out the effectiveness of the model or the strategy used. The differences between the previous research and this research are on the skills developed whereas the previous research focuses on reading skills, but this research focuses on writing skills. The previous research analyzes the content for the qualitative method, but this research analyzes schemata and produces a teaching model for the qualitative method. The benefit of the previous research to this research is giving insight into the process of descriptive and inferential statistical analysis and questions employed to the analysis.

Moreover, previous research entitled Incorporating Local Culture in English Language Teaching for Papuan Junior High School Students researched by Ramrome and Ena in 2022 also focuses on local culture. This research aimed to analyze whether Papuan Junior High School's teachers have implemented three ways in a local culture, to find out whether the students feel more enthusiastic in learning by using local culture content, and to investigate and measure the influence of local culture on students' skills before and after using local culture contents in learning English. Both quantitative and qualitative methods were

1. The data was gathered using the questionnaire and interviewed two and two students. The findings revealed that Papuan English teachers used local cultural content in providing English materials for the students



(e.g., using folktales, norms and customs). On the other hand, the development of students' English Skills such as speaking, reading, and writing have been improved to be better by using local cultural content. Furthermore, it could enhance their confidence and motivation in learning English, enlarge their vocabulary, and help them to be critical in thinking.

The similarities between the previous research and this research are in using local cultural content to enhance critical thinking and writing skills. The previous research uses both qualitative and quantitative methods and so does this research. The differences are in the level of the subjects, the previous research has junior high school students but this research has university students. They also have different aims or goals although they have the same focus which is local cultural content. The previous research incorporates local culture in English language teaching, but this research incorporates culturally-integrated material in reference to critical thinking to teach writing. The benefit of the previous research to this research is it inspires the researcher to use local culture in teaching media and also learning by using cultural content enhances motivation and critical thinking.

Research entitled Integrating Cultural Materials as the Media for Extensive Reading for Teaching Bahasa Indonesia as a foreign language was conducted by Isnaini, Faizin, and Anisa in 2021. This research presented Indonesia text written by combining cultural elements for students learning materials of Indonesia for foreign speakers (BIPA). It provides many benefits to enrich the vocabulary and promote Indonesia culture since the material contains cultural elements. It is suggested that teachers choose a material that integrates cultural elements since it is beneficial for BIPA students to learn with interesting and authentic principles. Data were drawn from various previous studies compiling of intercultural based text, BIPA learning models, and various types of extensive reading models. Exploring language skills of BIPA students by accommodating Indonesia culture and language aspect through a cultural reading text will be an alternative for improving the communication skills.

The similarities of the previous research and this research are on producing teaching materials by combining cultural elements and language aspects to communication skills; and then the data are processed descriptively. The differences are on the language used for teaching, Indonesia for previous research and English for this research, and the benefit for previous research is to enrich



vocabulary, but this research to enrich students' writing ability. The previous research is beneficial for this research to expose culturally-integrated materials as the media for teaching a language.

Another research was conducted by Jiang in 2009 titled On the Integration of Culture into EFL Teaching. Chinese culture has a great influence upon students' English writing. A culture-related teaching and learning involved historical and cultural background, living style, and the way of thinking. This research intended to answer the question: why should culture be included in English teaching from three aspects? It is true that under the good mastery of the English words and styles, the culture has a great effect on the students' English writing. Therefore, in the teaching process of English writing, it is necessary to students to be conscious of the differences of Chinese and English Culture. The results of the study support that the choice of the teaching materials and all the topics the author had taught must be included in the teaching plan. In teaching, what the teacher should spend more time are the following topics: idioms, proverbs and sayings; knowledge about culture; euphemisms and taboos; the similarity and difference in conversation; comparison between Chinese characters and English vocabulary because these are what the students are interested in most or what they think it is necessary to be explained more, or what they consider as the most difficult contents. All in all, Chinese culture, inclusive of the way of thinking and habitual expression, has a great influence on students' English writing.

The similarities between the previous research and this research are that cultural-integrated materials are incorporated in English teaching and to discover the effect on students' English writing. The difference is in doing a comparison between English and Chinese aspects for previous research, but this research uses culturally-integrated material in reference to critical thinking for teaching writing skills. The benefit of the previous research is giving inspiration that culture has a great influence on students' English writing.

Concerning reconstructing schema theory, there are some previous researches focusing on schema which are discussed here to see the similarities, differences, and benefits to this research. The research entitled Identifying the Core Content and Structure of a Schema for Cultural Understanding had the objective for the present research to identify the core content and structure of a schema for cultural understanding that could be used to inform training for deploying to unfamiliar cultures. Using a combination of qualitative and



quantitative methods, this research extracted schema content through interviews and identified common themes and concepts. This process resulted in schema content consisting of attributes of culture, goals in using cultural knowledge, and tactics for cultural learning. Findings indicated that concepts of religion, values and beliefs, and customs or traditions were central attributes of cultural understanding. These findings can inform training development and guide further research on the skills needed to function effectively in multicultural environments.

This previous research has similarities with this research in terms of identifying the content of cultures, structure of schema, and combination of qualitative and quantitative methods. In contrast, the difference is reflected on the next goal of the research to inform training development for soldiers deploying to unfamiliar cultures. This research is intended to develop students' critical thinking which is reflected in students' writing ability. The previous research gives inspiration to employ cultural content knowledge to search whether the students use their schema when discussing culture in this era of technology or not.

The previous research about schema entitled *Assimilation and Accommodation Exploring the Dynamics of Class Discussion* was a quantitative study exploring how gender-influenced assimilation, accommodation, agreement, as well as disagreement influence the dynamic of class discussion. The findings of this study reveal interesting pedagogical implications in the use of class discussions as part of teaching-learning activities. To answer four research questions as the details of the main question, 164 students were chosen to respond to a 32-item questionnaire.

The similarities between the previous research and this research are in identifying assimilation and accommodation during class activities; and also involving students in class discussion. The differences are in giving attention to gender influence when doing discussion for previous research, but this research is not concerned with the influence of gender. This research is concerned with the outcomes of productive skills containing critical thinking. The previous research gives inspiration to this research by using questionnaires to reveal assimilation and accommodation.

The next research entitled *The Effectiveness of Generating Interaction Schemata and Text (GIST) strategy toward the students' writing skill in* you had a focus on implementing GIST (Generating Interaction between a and Text) in improving student's writing skills at the second grade of



SMK Negeri 1 Sindang. GIST is a strategy for taking notes while the students are reading and writing, or putting concepts into their own words. The quasi-experimental method was used to find out that the GIST strategy was effective in teaching and learning writing. The similarities between the previous research and this research are having the same outcome, that is, writing skills, and also investigating whether the role of schema impacts the outcomes or not. The difference is in generating schema by taking notes from the previous research while this research has a prediction that students generate schema today by using advanced technology. The benefit of the previous research is giving inspiration that schema does not always exist but need to be generated.

There was another research entitled *The Role of Formal Schemata in the Development of Precis Writing in an Iranian EFL Context*. The objective was to explore the role of formal schemata in the development of EFL learners' precis writing. The experimental group received the treatment which was familiarization with formal schematic knowledge of the texts. It meant the experimental group taught by the teacher about genre type, topic sentence, controlling ideas, major and minor supports, cohesion and coherence, and meaningfulness of the text. The implication of this study was that not all of the writing problems of the students were due to the lack of needed formal schemata but the existent schemata must be activated by the help of the teacher to improve the writing process.

The similarities between the previous research and this research are in the product of activities, that is, developing writing and also activating new schema in the process of learning. The differences are on how to activate the schema by teaching formal schemata knowledge in the previous research, and by discussing cultural content for this research. The previous research inspires the researcher that although the students do not have background knowledge or schema about the topic, they can activate new knowledge in the process of learning activities.

Another research about schema was *An Empirical Study of Schema Theory and its Role in Reading Comprehension* written by Yanmei Liu in 2015. It was research that employed qualitative and quantitative methods to explore the effect of schema and how it works in the reading process and found out that readers with appropriate schema would perform significantly better than those without in both immediate and delayed recalls. For the experimental group, their teacher first familiarized them with some pertinent schema on the topic by giving questions related to the topic; and then asked them to read and recall the text. The similarity is in



allowing building students' schema rather than using their existing schema since the topic discussed might be something new for the students. The difference is in the outcome to develop, that is reading comprehension for the previous research and writing skills for this research.

In conclusion, based on the exploration of the possibility of similar research, no research is similar to the research that focuses on culturally-integrated material, critical thinking, and schema working all together to discover the effect on writing skills. In addition, there is no previous research that intends to produce an innovative model of teaching writing by framing culturally-integrated material, critical thinking, and schema. There will be a gap to be completed through the research which integrates all the elements fulfilled by the previous research. In other words, this research has a novelty which combines variables of culture, critical thinking, writing skills, and schema.

2.2 Theoretical Background

Some theories and concepts that provide support and benefits as the theoretical background of this research are as follows:

2.2.1 The Concepts of Critical Thinking

First of all, the definitions of critical thinking are clarified by some experts from different perspectives. Critical thinking as defined by Scriven and Paul (1987) is an intellectual, active, and skillful process to the concept, apply, analyze, synthesize, and evaluate information which is gained from observation, experience, reflection, reasoning, or communication. It will be the guide for having a belief in something and directing it to action. In addition, Elder (2008) mentions that critical thinking is thinking with self-guide and self-discipline which attempts to have the highest level of quality in reasoning. Furthermore, Elder explains that people who think critically have a tendency to be rational, reasonable, and empathic in their lives.

Moreover, Paul, Elder, and Barter (1997) declare that critical thinking involves systematic monitoring of critical thought that surface value ought to be analyzed and assessed further for convincing its clarity, accuracy, relevance, eadth, and logicalness. A critical thinker shows some results of thinking such as: exposing vital questions and problems, interpreting information y by using abstract ideas, producing well-reasoned conclusions and



solutions, and then evaluating it based on relevant criteria and standards. They are also open-minded within alternative systems of thought, recognizing and assessing in order to obtain assumptions, implications, and practical consequences, and communicate effectively with others in figuring out solutions to complex problems (Elder, 2007).

In relation to some basic skills involved in critical thinking, Cottrell (2017) offers some actions, such as:

1. We work out whether we believe what we see or hear.
2. We take steps to find out whether something is likely to be true.
3. We argue our own case if someone does not believe us.

In addition to responding to information, Cottrell adds that critical thinking involves the following activities:

1. We need to identify correctly when we gain more information.
2. We select effectively the right type and level of information for the purpose.
3. We use the appropriate level of critical analysis in specific circumstances.

Regarding the complex process of critical thinking, critical thinkers undertake the process of identifying positions, arguments, and conclusions; evaluating the evidence; weighing up the opposing arguments; being able to read between the lines; recognizing techniques; reflecting on issues; drawing conclusions; synthesizing information; and presenting a point of view.

Furthermore, in educational matters having critical thinking is important. They say that encouraging students to think and engage in critical thinking is the indicator of the most successful classroom (Halpern 1996; Kurland 1995; Unrau 1997). Students who think critically are typically excited about their learning and make teaching enjoyable. The most difficult intellectual tasks are considered challenging and opportunities to use their critical thinking and engage it eagerly (Crawford, Soul, Mathews, and Makinster, 2005). According to Anderson (2000), teachers could create teaching and learning objectives for students to study and build critical thinking and active learning by organizing their goals and creating categories or types of questions. In creating questions and objectives, a very low level is remembering, followed by understanding, applying, analyzing, and evaluating and a very high level is creating. At this highest level, students are able

new ideas and make new inferences. There will be a need to work at all levels. Students tap from lower to higher levels of critical thinking, requiring simple recall, developing factual knowledge, asking high-level questions, and



achieving higher levels of objectives. Recently, educators and educational researchers have provided some guidelines for restructuring classrooms along these lines (Herrenkohl 1998; Herrenkohl 1999).

2.2.2 The Concept of Levels of Questions

According to Crawford et al (2005), speaking about levels of questions refers to the difference between questions containing simple ideas that address details (such as names, dates, places, and capitals of counties or provinces) and questions that address more complex ideas, such as the relationships between concepts or causes of some event or situation. Low-level questions ask about facts and details. Knowing these facts does not ensure that the students will be able to use the facts to solve problems or make important decisions. Such questions might include the following examples:

- What is the year Indonesia obtaining its independence from Dutch?
- What temperature is the melting point of ice?
- What are the names of famous authors known in their literary works?
- On what country is the Amazon River?

These are the questions on the level of remembering. It is categorized into lower-level questions. Strategies that facilitate learning at lower levels include: orally rehearsing a fact repeatedly, writing and rewriting the information, and also reading and rereading material to be remembered. They do not ensure the memory of the information over a longer period. If the goal of education is to use those facts to solve problems and make decisions, then students are best served when they are asked questions that require them to complete more complex, higher-order critical thinking, using higher-order questions. Higher-order questions are those that ask how or why something happens the person providing the answer must engage in critical thinking and use facts and details in the process of answering the question. Higher-order questions demand students to focus on important information and use it to draw conclusions and make comparisons, for instance

- How did Indonesia's movement for independence from the Dutch impact people in Malaysia?
- Why does water near bridges and in the cities freeze later in the winter than lakes located in rural areas?



How does the Mahakam River impacts many regions in East Kalimantan. How is its impact for those regions near the village and those in the city?

There are many strategies that teachers can use to make their questioning strategies even more effective (Gibbs 2001):

- Teachers can ask questions that invite more than one plausible answer.
 - Teachers provide several minutes after asking a question to give less confident students an opportunity to formulate their responses.
 - They ask follow-up questions, such as, “What can you add?” “What is your opinion, Margarita?”
 - Teachers provide feedback that neither confirms nor denies student responses. Then the discussion remains open. Examples are: “Interesting.” “I hadn’t thought about that before.”
 - Request a summary. “Who can make Jamila’s point in different words?”
 - Survey the other students. “Who agrees with Max?” “Who disagrees? Why?”
 - Teachers encourage students to direct questions to other students. “Ask Michel if he can add something to your response.”
 - Teachers become the devil’s advocate. “How would you feel if...?” “How would your answer change if...?”
 - They use think-aloud. “How did you figure out that answer?”
 - Teachers call on all students, not only those who raise their hands. But move on quickly if a student chooses not to answer.
 - Teachers alert the students to possible answers. “There are many possible answers to this question.”
 - Teachers change their perspective. “How would you feel about your answer if you were...?”
 - Imagine. “What would happen if...?”
 - Teachers relate the response to something else. “How is (student’s response) similar to _____?” “How is it different?”
 - Teachers transform the response in some way. “What if you changed (student’s idea) to _____?” “What if we combined Jamila’s idea with Michel’s idea?”
- Those are some examples of applying critical thinking activities which concern on giving questions and prompts to students. By doing these, students are stimulated to give responses. They are trained to think critically.



e Concepts of Quality of Students’ Thinking Through Writing oring Rubric

Teachers design and create teaching principles that enable students to carry out writing tasks that require them to process their minds. For instance, the teachers can ask their students to write an essay that answers a question about a short story they have read. Actually, the teacher was not expecting the students to arrive at a particular answer, but rather show qualities of thinking and communicating. In order to write a good response to such a question, students must do these things: 1. Write a statement that clearly answers the question; 2. Furnish convincing arguments that draw on details from the text in order to support your answer; 3. Write an essay that is sufficiently clear that the reader can easily follow your presentation (Crawford et al, 2005).

Furthermore, Crawford et al (2005) introduce writing across the curriculum. It contains an understanding that writing is used as an aid to learning and thinking. The emphasis of the activities often relies on short exploratory pieces of writing that may include responses to questions, predictions, and questions for the class to examine.

Meanwhile, Bean (1998) offers a rubric to be used for assessing students' writing products which consists of some criteria. The way the teacher or lecturer assesses the students' writing is by choosing the scoring provided from very low to very high or vice versa depending on the arrangement of the statements, from positive to negative or from negative to positive. Here are the examples of statements based on intended measuring criteria in a rubric:

Criterion 1: The essay has a thesis that is expressed by the end of the first paragraph that clearly sets out your answer to the question. There is no thesis, or the thesis is not clearly stated. So, there are some options to choose from very low to very high based on your observation: 2 4 6 8 10.

Criterion 2: The thesis is supported by a convincing argument that draws on details from the text. The argument is not convincing, or it lacks details from the text. So, there are some options to choose from very low to very high based on your observation: 2 4 6 8 10.

Criterion 3: The work is clear and correct: there are enough paragraphs and transitions; Clear sentences; Grammatical Correctness; Spelling and Punctuation correctness. So, there are some options to choose from very low to very high your observation: 2 4 6 8 10.

Furthermore, there are some principles to be considered in developing a the teacher, first, decides on the criteria for having reasoning and



communicating rather than the “right answer” to the question. It may help to show students examples of some works that do a good job and some that do a poor job of meeting the criteria. Then, the teacher uses new teaching methods for reading and writing for critical thinking by setting performance standards for developing rubrics. The standards for students are listed here:

- The student provides not only answers; but also reasons for their answers to higher-order questions.
- The student asks higher-order questions of their peers and the teacher.
- The student produces oral and written products that reflect critical thinking.
- The student demonstrates initiative, motivation, and learning within and beyond the classroom by asking questions and initiating activities that go beyond the lesson.
- The student demonstrates self-confidence in learning, questioning, analyzing, and expressing ideas, positions, and opinions by presenting points of view that differ from or extend ideas presented by peers and the teacher.
- The student accesses, analyzes, and synthesizes information.

(Crawford et al, 2005).

In general, a rubric is an evaluation criterion containing grading standards based on students’ performance or written assignments. Each rubric consists of a set of scoring values grouped into categories (Ebert, 1997). In addition, Walvoord and Anderson (1998) mention guidelines for developing scoring rubrics. The first step is selecting an assignment for assessment. The second step is deciding the performance or competence that students demonstrate. The third step is listing and limiting the number of traits that represent attributes of the overall skill being assessed. The fourth step is deciding the gradation of mastery for each trait. The fifth step is writing statements that describe each level of mastery. The sixth step is designing a format for presenting the rubric to students and for scoring student work. And the seventh step is testing the rubric and getting feedback from colleagues and students. The following shows an example of a scoring rubric for essay questions:

Table 1. Scoring Rubric for Essay Questions



	General Presentation	Reasoning, Argumentation
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<p>Exemplary (10 pts)</p>	<ul style="list-style-type: none"> • Provides a clear and thorough introduction and background • Addresses the questions • Presents arguments in a logical order • Uses acceptable style and grammar (no errors) 	<ul style="list-style-type: none"> • Demonstrates an accurate and complete understanding of the question • Uses several arguments and backs Arguments with examples, and data that support the conclusion
<p>Quality (8 pts)</p>	<ul style="list-style-type: none"> • Combination of above traits, but less consistently represented (1-2 errors) • Same as above but less thorough, still accurate 	<ul style="list-style-type: none"> • Uses only one argument and example that supports the conclusion
<p>Adequate (6 pts)</p>	<ul style="list-style-type: none"> • Does not address the question explicitly, though does so tangentially • States a somewhat relevant argument 	<ul style="list-style-type: none"> • Demonstrates minimal understanding of the question, but still accurate • Uses a small subset of possible ideas to support the argument.



	<ul style="list-style-type: none"> • Presents some arguments in a logical order • Uses adequate style and grammar (more than 2 errors) 	
Needs improvement (4 pts)	<ul style="list-style-type: none"> • Does not address the question • States no relevant arguments • Is not clearly or logically organized • Fails to use acceptable style and grammar 	<ul style="list-style-type: none"> • Does not demonstrate understanding of the question, inaccurate • Does not provide evidence to support the response to the question
No Answer (0 pts)		

Source: Ebert (1997)

The examples of the scoring rubric stated previously can be the consideration for creating a similar one based on the criteria to develop, that is combining academic writing criteria and critical thinking.

2.2.4 Bloom Taxonomy



According to Wilson (2001), the original cognitive domain of taxonomy was defined in 1956 created by Benjamin Bloom as the first author and David Krathwohl as the second author. The Affective domain was not categorized until 1964. David Krathwohl was the lead author on this endeavour. Moreover, in

2001 crucial revisions were published which became known as Bloom's Taxonomy by Anderson and Krathwohl. Actually, Lorin Anderson was once a student of Benjamin Bloom, and David Krathwohl was one of Bloom's partners as he devised his classic cognitive taxonomy.

This research focuses on applying Bloom's taxonomy revision which has six stages, that is: remembering, understanding, applying, analyzing, evaluating, and creating. The following table is adapted from Anderson and Krathwohl (2001) which shows the cognitive process dimension consisting of categories and cognitive processes, alternative names, and definitions.

Table 2. The Cognitive Process Dimension

Categories and Cognitive Process	Alternatives Names	Definition and Examples
1. Remember: Retrieve relevant knowledge from long-term memory		
1.1 Recognizing	Identifying	Locating knowledge in long-term memory that is consistent with the present.
1.2 Recalling	Retrieving	Retrieving relevant knowledge from the long term.
2. Understand: Construct meaning from instructional messages including oral, written, and graphic communication		
2.1 Interpreting	Classifying Paraphrasing Representing Translating	Changing from one form of representation
2.2 Exemplifying	Illustrating Instantiating	Finding a specific example of an illustration of a concept or principle
2.3 Classifying	Categorizing Subsuming	Determining that something belongs to a category
2.4 Summarizing	Abstracting Generalizing	Abstracting a general theme or major point(s)
2.5 Inferring	Concluding Extrapolating Interpolating Predicting	Drawing a logical conclusion from the presented information



2.6 Comparing	Contrasting Mapping Matching	Detecting correspondences between two ideas, objects, and the like
2.7 Explaining	Constructing Models	Constructing a cause-and-effect model of a system
3. Apply: Carry out or use a procedure in a given situation		
3.1 Executing	Carrying out	Applying a procedure to a familiar task
3.2 Implementing	Using	Applying a procedure to an unfamiliar task
4. Analyze: Break material into its constituent parts and determine how the part relate to one another		
4.1 Differentiating	Discriminating Distinguishing Focusing Selecting	Distinguishing relevant from irrelevant or important from unimportant parts of presented materials
4.2 Organizing	Finding Coherence Integrating Outlining Parsing Structuring	Determining how elements fit or function within a structure
4.3 Attributing	Deconstructing	Determining a point of view, bias, values, or intent underlying presented material
5. Evaluate: Make judgment based on criteria and standards		
5.1 Checking	Coordinating Detecting Monitoring Testing	Detecting inconsistencies or fallacies within a process or product; determining whether a process or product has internal consistency; detecting the effectiveness of a procedure as it is being implemented.
5.2 Judging	Judging	Detecting inconsistencies between



		a product and external criteria, determining whether a product has external consistency; detecting the appropriateness of a procedure for a given problem.
6. Create: Put elements together to form a coherent or functional whole; recognize elements into a new pattern or structure		
6.1 Generating	Hypothesizing	Coming up with an alternative hypothesis based on criteria.
6.2 Planning	Designing	Devising a procedure for accomplishing some tasks.
6.3 Producing	Constructing	Inventing a product.

Source: Anderson and Krathwohl (2001)

2.2.5 Piaget's Theory of Cognitive Development

Jean Piaget (1896-1980) who worked in the area of developmental psychology was an influential researcher during the 20th century. He described two processes of adaptation used by the individual, that is: assimilation and accommodation. In addition, at the University of Geneva in the 1960s, Piaget employed experimental techniques and observed insight to analyze the moving pieces of cognitive development in children (Scott & Cogburn, 2021).

There is the notion in Piaget's theory that learning is a process of construction, where the thing being constructed is the child's internal model of the world or 'reality' more generally. This foundational theoretical assumption is called 'constructivism' (Gandhi & Mukherji, 2021). Constructivism frames learning not as a process of absorbing knowledge that's already out there in the world, but rather as a process of making knowledge from scratch by using cognitive tools that learners have at their disposal to interpret incoming information and translate it into knowledge (Smith, 2022).

Piaget identified cognitive development which consists of four stages: Sensorimotor Stage, Pre-Operational Stage, Concrete Operational Stage, and Formal Operational Stage (Huitt & Hummel, 2003). Furthermore, Piaget explained the Sensorimotor Stage, infant intelligence is demonstrated through motor based on physical Interaction (Huitt & Hummel, 2003). In the sensorimotor schema might be chewing, which encodes a set of instructions relating to



how to chew and the motivations for chewing (e.g., chewing feels satisfying and stimulates hunger). Within the schema for chewing are relevant categories of information, such as sets of objects that can and cannot be chewed. Likewise, objects that can be chewed might contain further categories: those that taste good, those that are particularly soft, and so on. All of the pertinent information for chewing is contained in the schema (Smith, 2022).

Piaget mentions in the Pre-Operational Stage, intelligence is demonstrated through the use of symbols and language. They develop memory and imagination (Huitt & Hummel, 2003). A pre-operational stage schema might involve instructions for basic forms of communication. For example, a pre-operational schema might involve all the information pertinent to waving, including what waving represents in a basic sense, when to wave, and the basic physical actions involved (Smith, 2022).

Piaget explains in the Concrete Operational Stage, intelligence is demonstrated through logical and systematic manipulation of concrete objects (Huitt & Hummel, 2003). In the concrete operational period, schemas contain more detailed representations of the properties of objects. For example, a concrete operational schema for flowers might contain the typical features uniting all flowers, such as shapes, colors, and locations, and also features that depend on mental operations, such as when it is appropriate to pick a flower and what to expect when a flower is given to a friend (Smith, 2022).

Finally, Piaget states in the Formal Operational Stage, intelligence is demonstrated through the logical use of symbols related to abstract concepts (Huitt & Hummel, 2003). A formal operational schema might describe any number of abstract concepts. An example might be a schema containing abstract instructions for moral behavior that are described not only in basic physical or egocentric terms, but also involving religious ideals, non-egocentric ideas (e.g., empathy), and more abstract consequences and motivations for behaving morally (Smith, 2022).

The impact of Piaget's theory in facilitating learning is designing and managing the class while paying attention to Cognitive Development. A class is designed based on a student's level of cognitive development or they are grouped into small groups to work together to enable low-level students to interact with high-levels. Interaction among different cognitive intelligence levels enables the learning and sharing of knowledge, changing passive into active students, and increasing understanding among students. The teachers manage their teaching



materials from easy to complex to encourage students' cognitive development. Those are some learning environments created based on Piaget's theory of Cognitive Development.

2.2.6 Schema and Schemata (Schemas)

Pankin (2013) states that schema theory is a branch of cognitive science concerned with how the brain structures knowledge, and Jean Piaget was the first who create a cognitive development theory that included schemas in which new information is added or assimilated into current schemas. Cognitive dissonance is caused by new information which cannot be easily integrated. Schemas are forced to change or accommodate this new information. Three factors cause cognitive development – biological development which progresses in stages, interaction with the world of nature and objects, and interaction with others.

Piaget (1952, p.7) defined a schema as “a cohesive, repeatable action sequence possessing component action that is tightly interconnected and governed by a core meaning. Furthermore, Piaget and Inhelder (1973) show the modification of memory by schema development happening through learning and recall. In addition, Mcleod (2023) states when Piaget talked about the development of someone's mental processes, it meant the increasing number and complexity of the schema that it learned. Nusser (1967) uses the computer program analogy to clarify the concept of schema. He defines the program as a recipe for selecting, storing, recovering, combining, outputting, and generally manipulating information.

The plural form of schema is schemata or schemas. According to Rumelhart (1980), schemata are knowledge structures or sets of expectations at various levels of abstraction based on past experience, and they vary in their structural complexity. Next, Anderson and Pichert (1978) have shown that an activated schema can aid the retrieval of information in a recall task. While Brewer & Treyens (1981) say that schema is the process of perception, language comprehension, and memory that involves the interaction of new (episodic) information with the old schema. The basic assumption of schema theories describes the influence of an individual's prior experience on how new information

is perceived, comprehended, and remembered. In addition, Meriam, Cafarella & Terner (2007) state schema theory reinforces the importance of prior



knowledge to learning and the use of tools such as advanced organizers and memory aids to bridge new knowledge to older knowledge stored in schema.

In terms of prior knowledge, the difference between schema and schemata is that schema refers to a single, specific mental framework or structure that an individual uses to understand and interpret information in a particular situation or context, while schemata (plural) refer to a collection or network of interconnected schemas that an individual has developed over time through their experiences and learning. Essentially, schemata represent a person's overall understanding and knowledge base in a particular domain or area of experience (AI Chat. <https://deepai.org/chat>). Furthermore, Nickerson (2023) differentiates a schema as a knowledge structure that allows organisms to interpret and understand the world around them, but schemas or schemata is a method of organizing information that allows the brain to work more efficiently.

According to Smith (2022) schemas are organized and generalizable sets of knowledge about certain concepts. They typically contain a set of instructions or logical statements about a concept, as well as knowledge that can be applied to any instance of that concept. Scott & Cogburn (2021) highlight the key function of schemas: an up-to-date set of instructions and ideas about as much of the world as possible, which can be used to predict and navigate the world in the future. Considering this, learning could more precisely be described as the process of keeping schemas up to date and developing new schemas where necessary.

Furthermore, Pankin explains the characteristics of schema as the followings:

1. Schemas are dynamic – they develop and change based on new information and experiences and thereby support the notion of plasticity in development.
2. Schemas guide how we interpret new information and may be quite powerful in their influence (see the work of Brewer and Treyns below).
3. Schemas, or schemata, store both declarative (“what”) and procedural (“how”) information. Declarative knowledge is knowing facts, and knowing that something is the case; procedural knowledge is knowing how to do something – perhaps with no conscious ability to describe how it is done (Lampson & Morris, 1996).



Declarative schemas may be thought to contain slots, or characteristics and values. For example, a house may be described in terms of its materials,

such as wood, and its parts, such as rooms. Materials and parts are the house schema's slots and wood and rooms are the slot values. Slots may have default values (house purpose: to live in) though houses may also be places of worship or museums. Schemas may have parent and child relationships with other schemas that inherit or pass on characteristics (Anderson, 2000).

5. A special slot in each schema is its slot and points to the superset. Thus, stored with the schema for building, the superset of house, we would have features such that it has a roof and walls and that it is found on the ground (Anderson, 2000).
6. Schemas allow writers and speakers to make assumptions about what the reader or listener already knows.

In conclusion, the schema is a knowledge structure based on experience that can increase its complexity through learning and bridging new knowledge to older ones. The memory of old knowledge that is stored in the schema is developed through learning and recall. In this research, students are observed whether they utilize their schema to discuss and write about the topic or whether they use any devices to find the information. The observation method will be crosschecked by giving a questionnaire to identify the usage of schema.

2.2.7 Assimilation and Accommodation

Concerning schema theory, schemas can be changed and reconstructed throughout a person's life. The two processes for doing so are assimilation and accommodation. Schemas have been pivotal in influencing theories of learning as well as in teacher instruction methods (Nickerson, 2023). In addition, these processes are known as adaptation, which is another way to describe using the most sophisticated cognitive tools available to keep schemas up to date. Adaptation involves two complementary sub-processes: assimilation and accommodation (Scott & Cogburn, 2021).

To Piaget, assimilation is how humans perceive and adapt to new information. This process fits the new information into the pre-existing schemas or cognitive background knowledge. There is a process of reinterpretation of new ideas to assimilate with old ideas. In contrast, accommodation is a process of changing pre-existing schemas to fit in the new information. In this matter, the



existing schemas or background knowledge does not work and needs to be altered to deal with new information (Ansari, 2020).

Piaget described two processes in an individual's attempt to adapt, that is assimilation and accommodation. As the person increasingly adapts to environments in a more complex manner throughout life, these two processes are utilized. Moreover, Piaget explained that assimilation is the transforming process in the environment; So that pre-existing cognitive knowledge can be placed in it. In contrast, accommodation is the process of changing cognitive structures to accept something from the environment. An example of assimilation happened when an infant uses a sucking schema by sucking a small bottle and then sucking a large bottle. On the other hand, accommodation happens when an infant sucks on a pacifier and then he is successful in sucking on a bottle (Huitt & Hummel, 2003).

According to Mcleod (2023), assimilation occurs when new experiences and previous knowledge are not very different. However, accommodation occurs when the new experience is very different from the previous knowledge we encountered. So that we change our existing schema and create a new radical schema. In conclusion, there are two processes of adaptation in Piaget's theory, assimilation and accommodation. Assimilation occurs by assimilating the schemata and new information/knowledge since they are not very different. However, accommodation occurs when changing schemata to fit in the new information since they are very different or they do not have a schema of it. According to Rahmat, Rahmat, and Yunos (2015), the process of assimilation of ideas helps learners to accept new knowledge through agreement. Otherwise, the process of accommodation allows learners to justify reasons for disagreement.

The impact of Piaget's schemata theory on the learning environment is facilitating students with various kinds and sources of knowledge and information such as printed materials, social media, e-books, journals and e-journals, applications, software, websites, etc. Students who have schemas are more ready to face new information/knowledge than the ones who know nothing. Otherwise, students can abuse technology to obtain very new information and knowledge needed to understand. Based on the observation and questionnaire, this research intends to reveal how schemata influence students' writing process including | and managing the ideas and information, whether the students use on or accommodation, or both of them as the process of adaptation when ring topic discussion about cultures.



2.2.8 Culture

There are some definitions of culture to give insight into what culture is. Culture constitutes human products during their life including what they think (knowledge, ideas, values), feel (beliefs, interests), and act (attitude, behavior, arts, tradition) which are inherited by the next generation in their community (Harris, 1975; Critical Thinking Consortium, 2011). Culture is also defined as a set of traits or human characteristics that are shared and transmitted by non-genetic means (Mulder, Nunn, Towner, 2006). The other idea is that culture has been developed by the human race and is successively learned by each generation containing the whole complex of traditional behavior (Brumann, 1999). Culture is a wide range of phenomena including norms, values, shared meanings, and pattern ways of behaving that can be learned and it is associated with groups of people (Axelrod, 1997). Carley (1991) considers culture as the distribution of information (ideas, beliefs, concepts, symbols, technical knowledge, etc.) across the population and proposes a model for knowledge transfer based on interactions.

In reality, culture has uniqueness from one person to the other person based on his cultural background and community. According to Lin, Tseng, and Wang (2018), culture's characteristics are complex and could be traced from language, tradition, customs, beliefs, morals, art, lifestyle, and clothing. In addition, Mor & Ashta, (2019) mention that culture shapes the way of life of an individual, family, and environment. Furthermore, Imai, Kanero & Masuda (2016) assert that a person's cultural background determines individuals' attention, attitude, categorisation, and causal attribution. Bachrach (2014) emphasized that culture comprises attitudes, values, and norms. In brief, culture is different among individual that shapes their life in their community, including behaviour, morals, and products.

One cultural content is local culture. The local culture plays a crucial role in human life in shaping and creating the personality, characteristics, mindset, thoughts, behavior, and habits. Besides that, the local culture can be the main triggering factor that motivates someone to make a decision that is different from others (Ucar, 2016). Moreover, Fu (2018) asserts that using local cultural content in learning English enables learners and teachers to absorb the materials and to the students in lessons, activities, and tasks. Enhancing English
nce is achieved by learning the language based on context and
ully, since the students are close to the material discussed, which is



around their lifestyles. Introducing local culture to students is important to create a multicultural perspective, build tolerance, and preserve cultural identities. Moreover, the students need to understand target and international cultures for their further improvement as part of the world.

In conclusion, culture is the product of humans during their lives including ideas, values, beliefs, symbols, norms, traditional behaviors, human traits, etc. and it is distributed and transmitted within groups of people based on interaction. In this research, the topic of discussion to be discussed is around ethnic cultures in Kalimantan including arts, traditional ceremonies, culinary, values and beliefs, and human traits or characteristics. The output of the discussion activities is composed of the cultures in Kalimantan.

2.2.9 Culturally-Integrated Material

It is necessary to clarify Culturally-Integrated Material which becomes the focus of this research. Cultural integration is a complex process that requires patience, understanding, and respect for the diversity of merging different cultural backgrounds and practices into a cohesive whole. In addition, successful cultural integration requires all parties involved and it begins with a willingness to learn and appreciate different cultural perspectives (Knowledge and Science Bulletin Board System. <https://www.knbbs.com/understanding-cultural-integration-what-does-it-mean/>). It means there are materials based on culture merging different cultural backgrounds to appreciate cultural diversity. So, students' cultures and their regional local cultures might be the materials presented in culturally-integrated material.

Sharer (2023) explains the concept of cultural integration as the process of combining different cultures, ideologies, and values into a unified whole that occurs through the sharing of customs, beliefs, and practices among different cultures. It involves the mixing of different cultures and the preservation of individual cultural identities. It means the materials include a cultural combination of ideologies, values, customs, beliefs, and practices among different cultures into a unified whole to be shared to preserve cultural identities.



As Xiao (2010) mentions using English as an international language speakers to share their ideas and culture with people coming from a linguistic and cultural backgrounds. It appoints that English as a medium of communication might be used for teachers/lecturers and students to discuss a

variety of cultures as parts of their background. Language has the function of preserving cultures by sharing ideas as well as getting linguistic competence.

Three categories of culture presented in the textbook and materials based on Cortazzi and Jin (1999) are:

1. Source culture materials refer to the textbooks which present language learners' own culture. The main purpose is to enable learners to talk about their own culture to foreign visitors to their country rather than be prepared to encounter other cultures.
2. Target culture materials focus on one or two target cultures, such as the United Kingdom and the United States. It is the most popular instruction material in the EFL context.
3. International target culture materials involve textbooks that include a wide variety of cultures set in English-speaking countries or in countries where English is not a first or second language; but is used as an international language.

So, cultural-integrated materials might include source, target, and/or international target culture. It is in line with McKay (2012), Matsuda (2003), and Xiao (2010) about the cultural contents of English materials that should not be limited to native English-speaking countries, but the textbook used as the guidance includes more non-native speaker characters and source culture issues.

In conclusion, culturally-integrated material is guidance containing materials (source, target, and/or international cultures) in teaching-learning activities merging different cultural backgrounds and cultural issues to appreciate a different cultural perspective and preserve cultural identities.

2.2.10 The Model of Teaching

The model of teaching is a kind of framework that describes the meaning, the characteristics, and the examples of teaching models to enable us to design and use the appropriate model based on our teaching goals. Wilson (2024) states that a model of teaching deals with the learning environment and instructional experience that can be constructed, sequenced, or delivered that provides educational components: curricula, teaching techniques, instructional groupings, management plans, content development, sequencing, delivery, the content of support materials, presentation methods, etc. In addition, Bisht mentions a teaching model as a plan to design instructional material and to



guide the instructions in the classroom that has the aim to make instructions effective in an interactive atmosphere to improve the curriculum. A model of teaching consists of guidelines for designing educational activities and environments that can also be utilized to shape courses of studies, instructional material, and guide instruction (Passi & Singh, 1991 in Bisht, 2022). In conclusion, the model of teaching is a plan to design instructional material, guide instruction, and educational activities dealing with a learning environment that provides teaching technique, content/material development, classroom management plan, and presentation method to make an effective and interactive atmosphere to improve the curriculum.

According to Joyce, Weil, and Calhoun (2014), models of Teaching should qualify in 6 of the following areas:

1. Focus is the central intent of the model revolving the main objective of the model.
2. Syntax describes the model's structure and includes the sequence of steps involved in the organization of the model.
3. Principles of Reaction tell the teacher how to regard the learner and how to respond to what the learner does during the use of the model.
4. The Social System describes the interactions between students and teachers as each model is viewed as if it were a mini-society.
5. Support systems that are needed to implement the model, such as special skills or knowledge needed; special equipment, media, or learning environment requirements, special books, films, laboratory kits, reference materials, permissions, facilities, etc.
6. Application and effects. Each model attempts to implement some change in learners and influence their thinking, feelings, social interactions, or physical movements in some way so that those changes can be transferred to other situations and experiences.

The following examples of the model of teaching are cited from Wilson's who compiles from various sources. She categorizes the model of teaching into three: Personal or Personalist Models, Social Learning Models, and Information Processing Models.



Personal or Personalist Models: This group of approaches acknowledges the uniqueness of each learner. Methods in this category foster the importance of individuals in creating, directing, and structuring personal meaning. Also

models in this area are often targeted to foster things like self-esteem, self-efficacy, emotional and personal understanding and acceptance. Some examples are:

- Nondirective teaching: Focuses on self-awareness, understanding, autonomy, and self-concept.
- Developing Positive Self-Concepts
- Relaxation and stress reduction: Exploring personal goals for relaxation, or using self-initiated relaxation techniques to calm anxieties in social settings.
- Selection, Detection, Connection Model – A self-directed teaching model for highly intrinsically motivated high school students.

2. Social Learning Models: This group of methods aims at building learning communities and purports to develop productive ways of interacting in a democratic setting. These models also emphasize that human learning occurs in social settings and through modeled behaviors and social exchanges. Some examples are:

- Classroom Meeting: Strengthens responsibility towards self and others. This model has rules and structure and specified intentions.
- Cooperative or Collaborative Learning: Collective arrangement and division of tasks, sharing results and ideas.
- The Graffiti Model: The Graffiti Model is a cooperative learning structure in which students are divided into small groups in order to answer questions posed by the teacher. Answers are then exchanged with all of the other groups until all groups have read and considered all of the written responses. Rehearsal comes as students in different groups exchange their answers and discuss their responses as compared to those of the other groups.
- Jigsaw Model: Originally, the jigsaw concept was developed in the 1960's to facilitate racial integration. As an educational model it falls into the Social Family of methods.
- Jurisprudential: Uses the jurisprudential frame of reference to solve social issues.
- Laboratory Method: Group/interpersonal skills, personal awareness, and flexibility skills are stressed in this model
- Role Playing: Role play as a teaching strategy – In role play students assume

become the source of their inquiry.

ama – Students assume roles, acting out issues to facilitate awareness
understanding of concepts or important issues.



- Social Inquiry: Problem solving using social issues
3. Information Processing Models: (this is the fastest growing family of models). This is the largest grouping of approaches aimed at emphasizing ways of learning specific information and of acquiring and organizing data, solving problems, and developing concepts and language. Models confined to this category deal with intellectual development, powers of reasoning and logic, aiding students in organizing and retaining information, and in enhancing their metacognitive functions. Some examples are:
- Advance Organizer Model: Increases the efficiency of information-processing capacities. There are several kinds so there is a lot of possibilities and varieties – expository, narrative, skimming, or graphic.
 - Cognitive Growth Development: Mainly focuses on general intellectual development
 - Cognitive Views of Learning: Focuses on the processes within the learners. Strategies are developed to encode and retrieve information.
 - Critical Thinking: Deals with a series of dialogs and exercises designed to get students to think at higher levels and at levels that engage critical appraisal or critical thinking.
 - Inductive Thinking Model/Inquiry Training Model: Focuses on the development of inductive mental processes and academic reasoning. Here is fun and informative overview of teaching the inductive process.
 - Concept Attainment: Focuses on developing inductive reasoning & conceptual knowledge.
 - Inquiry Training: Engages students in causal reasoning, and aids then in developing hypotheses.
 - Learning Styles Model: These plans are devised and written reflecting concepts developed by one of the learning style theorists or followers (such as Kathleen Butler or Bernice McCarthy, Dunn and Dunn, etc.)
 - Memorization: Improves memory capabilities through a variety of methods and tricks.
 - Multiple Intelligences: MI plans utilize, or are based on, those 8 intelligences described in the work of Howard Gardner. Samples of related plans here. There

; many excellent sites based solely on MI Theory.



- Multi-modal Learning Model: These plans reflect varied modalities used to encode and retrieve learning. There are generally two basic variations – VAK (visual, auditory, kinesthetic) and VARK (visual, aural, reading, kinesthetic).
- Picture Word Inductive or PWIM. This model is geared to help children in developing sight and written vocabulary by drawing on commonly familiar words.
- Scientific Inquiry Model: Instructor teaches students the research system of a subject or discipline. Problem-solving may be utilized in this model
- Synectics: A creative problem-solving model based on creative thinking that involves the free use of metaphor and analogy in informal interchange within a carefully selected group of individuals.
- Taba's Inductive Reasoning Model: Advanced thinking can be taught through a series of steps designed to be an active transition between an individual and data. This is a very powerful model.

The model of teaching developed in this research is a model of teaching writing by framing cultural-integrated material, critical thinking, and writing skills of tertiary-level students. This model is designed based on the framework of definition and characteristics of the teaching model incorporating model examples, such as cooperative learning and critical thinking. The characteristics and terms used for designing the model of teaching writing are fitted by the terms used for the Indonesian educational system. The following terms are available in the model of teaching writing developed in this research:

Tabel 3. The Characteristics and Terms for the Model of Teaching Writing

No.	Elements in the teaching model and additional characteristics	Indonesian educational terms used for the teaching model documents	Documents
1.	Focus	Students' competence CPM (Capaian Pembelajaran Mata kuliah) CPL (Capian Pembelajaran Lulusan) Subject Description Special competence Indicator General objectives Specific objectives	Blueprint RPS (Syllabi) RPS RPS RPS RPS Lesson Plan Lesson Plan



2.	Syntax	<p>1. Cultural topic Students' Competence Critical thinking questions Categories</p> <p>2. Identities CPM Subject Description CPL Reference Special Competence Indicator Teaching Materials Teaching Method, model, or technique Learning experience by using high order level questions Assessment (kind, criteria, weight) Reference Students' Assignment and Assessment Evaluation</p> <p>3. Identities General objective Specific objective Material/content Assignment Method/Activities Assessment/Evaluation Focusing on building critical thinking skills (Critical thinking questions, Tasks, Description of evaluation activities) Source of Material</p>	<p>Blueprint</p> <p>RPS (Syllabi)</p> <p>Lesson Plan</p>
3.	Principles of Reacting	Appraisal verbal and non-verbal Scoring/Grading	Applause, Compliment, and scoring
	The social system	Direct Interaction (offline)	Inquiry



		Cooperative learning (group discussion) Individual and group tasks/activities to write compositions	(Questions and answers) Students writing results
5.	Support System	Internet, mobile phone, laptop, media, sources of materials (books, articles, journals)	Software and Hardware
6.	Application & Effect	Implementation of teaching model of writing by using cultural-integrated material in reference to critical thinking skills on students' writing ability.	
7.	Guide Instruction and educational activities	Tasks/activities	Syllabi and lesson plan
8.	Instructional material and content/material	Teaching materials	Syllabi, lesson plan, and course book
9.	Classroom management	Group discussion arrangement	
10	Presentation method	Presenting a topic, distributing an inquiry, Responding to questions, having group discussions and group presentation	Syllabi and lesson plan

Source: Wilson (2024), Bisht (2022), Joyce, Well, and Calhoun (2014)

2.2.11 Reconstructing Schema Theory

It is prominent to explain the phrase reconstructing schema theory as it is revealed in the research title as the focus to ascertain. Schema theory utilized in this research is based on the grounded theory found by Jean Piaget. As cited in Nickerson (2023), schemas can be changed and reconstructed throughout a person's life. The two processes for doing so are assimilation and accommodation. Schemas have been pivotal in influencing theories of learning as well as in teacher instruction methods. In the process of students learning, in this case the writing including gathering and managing ideas and information about cultures they write the composition, the students reconstruct their existing to assimilate or fit with the new knowledge (assimilation) or they



reconstruct their knowledge by changing their existing knowledge into new knowledge they already obtain (accommodation) when they are involved in discussion.

In Meriam-Webster Dictionary, reconstruction means 1) the action of reconstructing: the act or process of rebuilding, repairing, or restoring something. 2) the re-creation or reimagining of something from the past especially by using information acquired through research. 3) a technical process by which scientific principles and techniques are applied to physical evidence in order to create an accurate reenactment or understanding of a past occurrence or event (such as an accident) (<https://www.merriam-webster.com/dictionary/reconstruction>. Accessed on January 11, 2024). Whereas, in Cambridge Dictionary reconstruction means 1) the process of building or creating something again that has been damaged or destroyed. 2) an attempt to get a complete description of an event using the information available, or an attempt to repeat what happened during the event: (<https://dictionary.cambridge.org/dictionary/english/reconstruction>. Accessed on January 11, 2024).

In conclusion, reconstructing schema theory means the action of rebuilding, restoring, or creating schema theory or knowledge from the past into the new knowledge in order to create an accurate understanding about it or to get complete description depending on the research results. Schema theory is the basic theory or grounded theory that might be given further description to complete and ascertain for specific subject and situation.

2.2.12 Advanced Technology

CALL (Computer Assisted Language Learning) was introduced in the 1960s and many educators are enthusiastic to advocate their use, espousing the many advantages they could bring to both language learners and teachers (Al-Mahrooqi & Troudi, 2014). The fast growth of advanced technology and the impact of Industrial Revolution 4.0 influenced scholars to prepare, design, manage, and apply the technology of computers in teaching and learning (Skephe, Caga, and Buadzo, 2020; Blinder, 2006). Furthermore, information and communication technology (ICT) in the form of e-learning and the Internet enable the integration of unlimited multimedia learning materials from external sources into the classroom where there is a computer, mobile phone, or tablet device with Internet access (Alsunbul, 2002). In addition, Bruce and Levin (2001) suggest that



technology can encourage inquiry, help communication, construct teaching products, and assist students' self-expression in classroom situations. Teachers understand that using technology for learning changes their teaching methods (Brown 2004). Additionally, Sharpe (2004) found that teachers view technology adoption as an important strategy for improving education.

In conclusion, information and communication technology have an impact on to use technology of computers in teaching and learning which integrates unlimited multimedia learning materials into the curriculum that encourages and helps learners to study and self-expression as well as the teachers to construct teaching products and change their teaching method to improve education. This research observes the use of technology in learning and discussing particular topics experienced by the students.

2.2.13 The Conceptual Framework

The conceptual framework illustrates some concepts that this research is based upon and this framework becomes the focus of discussion and investigation. It also shows the relationship among variables that can be seen in the following chart:

Figure 1. The Conceptual Framework

