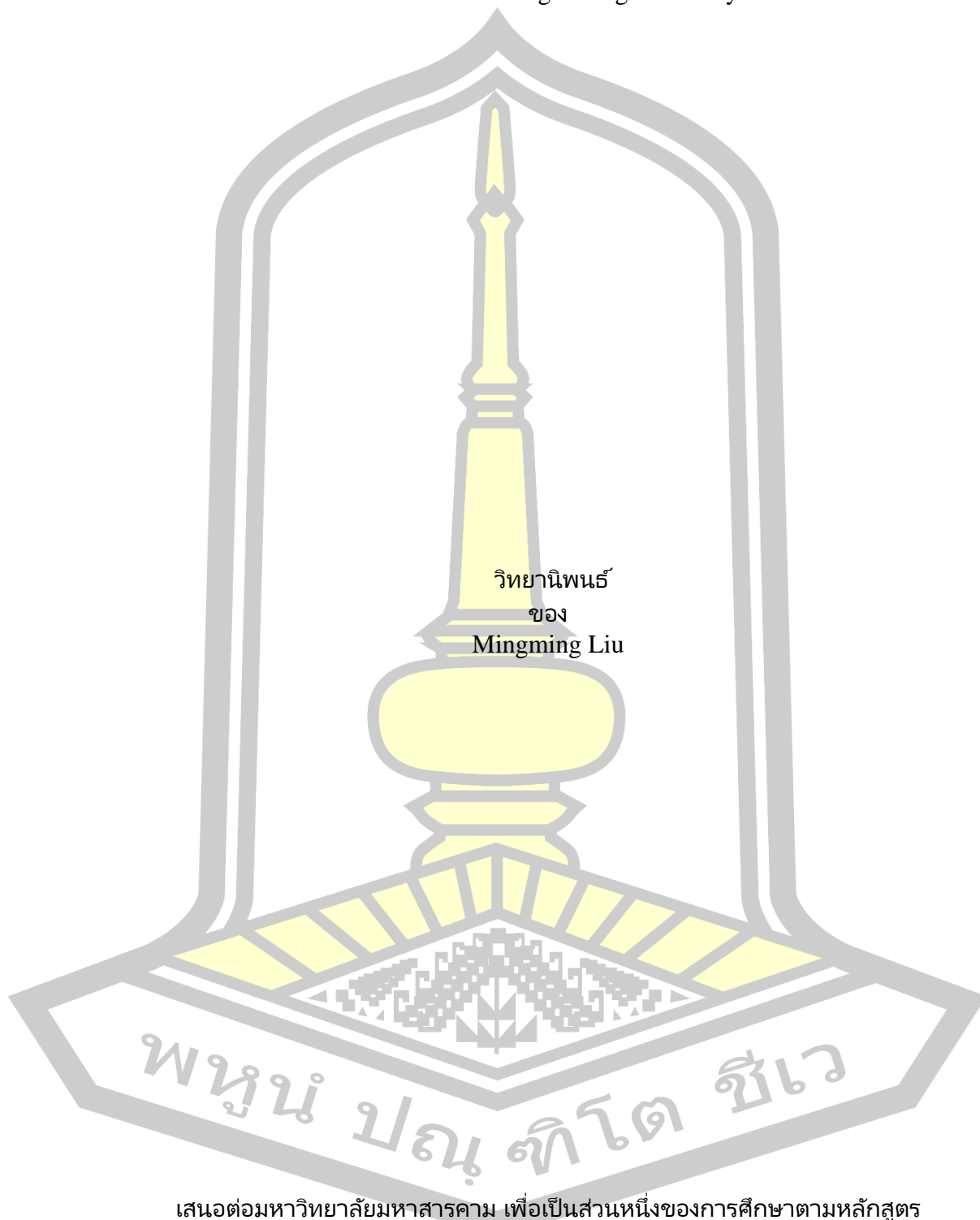Developing instructional model to enhance Japanese reading comprehension skills
and attitude toward reading among university students

Mingming Liu

A Thesis Submitted in Partial Fulfillment of Requirements for

degree of Doctor of Philosophy in Curriculum and Instruction

February 2022

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The examining committee has unanimously approved this Thesis, submitted by Ms. Mingming Liu , as a partial fulfillment of the requirements for the Doctor of Philosophy Curriculum and Instruction at Mahasarakham University

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TITLE   Developing instructional model to enhance Japanese reading comprehension skills and attitude toward reading among university students

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ABSTRACT

This research aimed 1) to investigate the current problems in reading comprehension and attitude toward reading for the Japanese language in the context of university students. 2) to develop an instructional model to enhance Japanese reading comprehension skills and attitude toward reading among university students. 3) to study the results of using the instructional model by means of reading comprehension skills. (3.1) to compare pretest and posttest scores in both control and experimental groups. (3.2) to compare the posttest score of the experimental group and control group. 4) to study the results of using the instructional model by means of attitude toward reading. The research methodology was divided into 3 phases. Phase 1 focused on the current problems of implementation of Japanese reading. The participation consisted of books and articles, 66 students, seven teachers, and five experts. Phase 2 construct the tentative model. Phase 3 study results implement the model. The target population consisted of 72 students. Study to students had a positive attitude toward reading and evaluation of the model.

The results of the research were as follows. (1) The current problems are students cannot read long sentences in Japanese. Students lack knowledge of vocabulary and grammar, as well as the awareness of understanding sentences. Students' attitude towards Japanese reading is negative. (2) The CLAS model includes focus, rationale, syntax, social system, support system, and application and effects. (3) The CLAS model enhanced Japanese reading skills among university students. (3.1) The posttest score in the control groups is more than the pretest score. The posttest score in experimental groups is more than the pretest score. (3.2) The posttest scores of the experimental groups are more than the control groups. (4) The CLAS model enhanced attitude toward reading among university students.

Keyword : Developing instructional model，Enhance Japanese reading comprehension skills，Enhance attitude toward reading，University students

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TABLE OF CONTENTS

CHAPTER I
INTRODUCTION

Background

Reading skill is more important than other skills in Japanese language teaching. Reading skill is vital as it is one of the four main skills -listening, speaking, reading, and writing - of learning. Japanese reading is an important skill for people since it is a channel to acquire new information, knowledge, experiences and so on. Reading as the "new civil right" (NICHHD, 2000). High reading skills for students is important to 1) have high comprehension skills and learn the content knowledge in different fields; 2) improve other foreign language skills like spoken language and listening, and make students have self-efficacy; 3) for solving the problems faced by students in second foreign language learning and improving their overall performance. Learning Japanese language is popular in China. By the early 1980s, Japan became a major economic power and one of the most prosperous countries in the world (Allinson, 2004; Sellek, 2001). This strong presence of Japan in the world attracted greater interests in the Japanese language because knowing Japanese was considered an asset for career development (Endo, 2011). The Japanese language was considered useful and became a popular foreign language to learn. This phenomenon was called "the Nihongo Boom" (Japanese language boom) (Seki, 2008). Many universities in China have the Japanese language majors and the students major in foreign language like to choose Japanese as a second foreign language. The students in foreign language school in university must study a second foreign language in China. In the foreign language school of the research university of the author, the students major in Business English study French and students majored in English Language study Japanese as a second foreign language. Students study Japanese in four terms (two academic years) around 200 hours. From beginning of Japanese to level four (N4) in JLPT. Reading comprehension is more important than other skills in Japanese language learning. Good academic achievement helps students pass the final exam during the study of a bachelor's degree and pass the entrance exam of the master's degree majored in English and have more chances to get a good career.

Reading problems

Reading problems in research papers showed the readers lack linguistic knowledge, comprehension skills, general knowledge and positive attitude toward reading. 1) Basic skills (The National Assessment of Educational Progress), sentence structure, schema knowledge (Carrell, 1987), and identifying language (Linake, 2015); 2) comprehension skills and students cannot retrieving explicitly stated information (Banda, 2009), and have problems in acquiring and using information (Linake, 2015); 3) background knowledge (Carrell, 1987), text types and reading strategies (Floyd & Carrell, 1987). 4) interest in reading (Azikiwe, 2007; Straus, 2015), they have negative attitude toward reading, even avoiding and refusing to read (Satija, 2002), they do not know the purposes for reading (Linake, 2015), and not focus on text (Banda, 2009). The traditional instructional model of reading comprehension is not following active learning and focus on the learning of grammar. The new instructional model is for Japanese reading comprehension for university students.

Current problems

As the author reflects on her teaching in the Japanese language teaching class, she faced the same problems with other researchers. 1) Hard to remember the vocabulary. The students learn Japanese as a second foreign language start from the alphabet, which is the reason they do not have the foundation of linguistic knowledge. Each lesson has dozens of words in the textbook, but the students lack knowledge of vocabulary and are unable to remember large numbers of words in a limit time. And are not good at matching the meanings when Kanji are same with Chinese traditional characters. Moreover, no attention is paid to the origin of Kana that can function as root. In addition, students could not make a clue between Kanji and its pronunciation, especially for the "training reading" (originated from Japanese pronunciation) of kanji. 2) Hard to understand grammar. Students are not familiar with the grammar and structure of sentences that quite different from their L1 and L2. The explanations of some grammar in the textbook are difficult for students to self-study. 3) Unique culture. On the other side, for university students, they have learned a lot about a foreign cultural background in their past studies and lives, but still hard to understand the unique culture. 4) Reading strategy. Second-year and third-year students majoring in English in university have learned a lot of effective English reading strategies. But

not good at using the reading strategies in Japanese text forms. 5) Lack interest. And moreover, the students have no response in class which is not good for language studying. 6) Poor learning methods. The language learners always have problems with the way to study and they have myths on the reasons why they have not got a high language level. Some learners use the same learning methods which they used in L1 (Chinese) and L2 (English) learning. 7) Not clear the cause of the reading problems. Normally the methods developed by the researchers work well for most learners. One teaching method can solve one or more problems. But the author found that they had different effects on students who performed equally poorly when the author applied the same problem-solving method. Because in language learning, the cause of the problems may be different for students with the same academic performance.

In summary, the problems in Japanese reading class of the author are listed as follow: 1) Lack linguistic knowledge- vocabulary, grammar, sentence structure; 2) Lack the way to remember vocabulary; 3) Lack comprehension skills-Word meanings in context, main thought, inferences, literary devices, analysis, and the interpretation; 4) Negative attitude-No interesting, no patient, no motivation, no attention, and panic; 5) No exact instructional model to enhancing the reading comprehension skills.

Severity

The severity of the reading problems lies in obstacles in obtaining new knowledge, poor academic achievement, negative impact on learners' skills, career and social life, and attitude toward reading. Reading problems will lead to results such as 1) the students encountered obstacles to reach the comprehension of new information, and even ignored and missed to learn knowledge through the foreign language written texts; 2) have a profound impact upon students' overall academic progress and even drop out in their overall academic undertaking, lack reading skill is a key barrier to academic achievement (Pretorius, 2002); 3) can impact negatively on learners' to make straightforward inferences, interpret and integrate ideas and information; 4) a potential hurdle to achieving future career and study goals of the students and the influences in the social, religious, cultural and political life (Satija, 2002); 5) students fail to complete their reading, lack reading interest, avoid reading and even refuse to read (Satija, 2002). The reading problems influence the growth of the students' intellectual and emotional beings (Satija, 2002).

Solution

The solutions of the researchers to solve the problems in reading include the studying of linguistic knowledge; learning reading strategies; reading more texts to improve reading skills and remember more vocabularies, using comprehension skills to learn new knowledge instead of focus on language skills; using effective teaching methods; developing other abilities and knowledge; reading culture; focusing on the way of brain working, such as decoding, working memory, recognize control. The methods the researchers developed are expressed as follow 1) Vocabulary and grammar (Carrell, 1987) can reduce the obstacles of L2 readers' motivation. Study skills approach (grammar, punctuation and spelling in reading). Be able to pronounce words properly due to a proper exposure to spelling activities. Proper pedagogy-Wan-a-rom, 2007- vocabulary and grammar structure. If teaching were carried out properly, learners would be strengthened with vocabulary and grammar structure (cited in Wan-a-rom, 2007). The advantages of Chinese students are to infer the meaning of words from the origin of Kana, to identify the glyph and basic meanings of a large number of Kanji. To use "Phonetic reading" (originated from Chinese pronunciation) of Kanji has a positive effect on the memory of the pronunciation when decoding a word. 2) Reading strategies. Simple and easy text, Rasinki (2017) - ability to read and comprehend. Rasinki (2017), making the text simple and easy to understand will go a long way to improve students' ability to read and comprehend. Children need to have a short and precise text which can contain pictures that will give them a vivid or mental expression since words accompanied with pictures aid for better understanding (Azikiwe, 2007). 3) Reading more texts. Academic literacy (Lea & Street, 1998). Lea and Street (1998) favor academic literacy that views literacy as a social practice. Practices reading within disciplines constitute a central process through which students learn new subjects and develop their knowledge about new areas of study. Extensive reading - Wan-a-rom (2007) - reading ability (high proficiency students). Wan-a-rom (2007) stated that among the studies on effective approaches to improve L2 reading comprehension of the low proficiency students with the lack of vocabulary and grammar, extensive reading seemed to be effective on enhancing students' L2 reading ability for high proficiency students as students had more chance to read outside of class. Day and Bamford (1998, p. xiii), extensive reading became the

teaching and learning approach which allowed learners to read a great number of books and other materials well written based on linguistic pattern. Extensive reading - Nuttall (1982) - vocabulary and reading skills. Nuttall (1982, p. 65) said that an extensive reading was the single most effective way of improving vocabulary and reading skills in general. 4) Using comprehension skill to get information. To make a change from "learning to read" to "reading to learn" (Lessing and de Witt, 2005). To use the literacy reduction in attention - thus, an important step in the development of skill in reading may be a reduction in the attentional demands made by preliminary processing. In this way more attention can be allocated to other reading processes, such as understanding what is read. 5) Change reading teaching method. Classroom teaching for reading instruction needs to be considered as a critical factor in preventing reading problems and must be the central focus for change (Moats, 1999). Students can become literate in terms of proficiency and competence only if their teachers are willing to initiate their growth in reading (Linake, 2015). It has been noted that children with positive reading attitudes tend to be willing and may volunteer to read because they enjoy it (Linake, 2015). Using an appropriate teaching method with learners' learning style will help to promote their motivation to learn and enhance their learning potentials, leading to higher learning achievement (Brown, 1994). The boring task should be changed into the more interesting and challenging one. Using variety of teaching activities would be able to help reduce students' anxiety and increase their motivation. In addition, Oxford (1997, p. 444) claimed that collaborative learning, working in groups, could decrease students' workload and help sharing ideas of students with different backgrounds of knowledge. Moerk (1994) strengthens the above models by highlighting other relevant models such as asking question which allows learners to ask each other questions and that encourages communication, critical thinking and inquiry among themselves. In this regard, it is meant to create awareness of the author behind the text setting and to let them work independently. 6) Other abilities and knowledge. Increasing evidence has garnered empirical findings for the unique contribution of non-linguistic skills, such as cognitive control and working memory to reading comprehension. Inference, cognitive control and working memory, influence reading comprehension. Reading requires integration between language knowledge (e.g., letter knowledge, facts about

the world) with reading processes. These three activities would be used not only to motivate the L2 students to enjoy reading but also to improve some reading skills needed for comprehension. In other words, the prediction skill, reading comprehension and the conceptual meaning and recognizing the script of a language were selected to serve the effective outcomes of using the three reading activities. 7) Reading culture. In effect, it can only be achieved through a partnership between parents, teachers and more focused peers to elevate the culture of reading in students. It is also needful to develop a reading culture in the learners form high schools as a way of building a proper foundation in reading before the students come to higher institutions. This would increase learners' positive attitude towards reading and they would be able to master it and become competent and successful not only in language but also in other academic fields of their studies since they would have acquired the necessary skills. This is evidenced by Nwabueze (2011) who argues that an environment plays a very significant role in the development of reading culture of the learners. This means that the lack of proper exposure and support for students at an early stage can affect them negatively and may result in bad attitude towards reading later. Nowadays, teaching reading tends to focus on encouraging students to read various kinds of text they like independently as called extensive reading. That is to let them read in areas that interest them, for example, exposing them to sustained silent reading. 8) Brain working. To develop automaticity - less skilled reading. Similarly, the less skilled reading may in part be due to a failure to develop automaticity, thereby causing a deficit in the amount of attention available for comprehending. To improve Verbal coding processes speed Curtis & Mary (1980) - deficits in comprehension. Verbal coding processes, which are slow, reduce the amount of attention available for other reading processes, thereby producing deficits in comprehension of what is read. Becoming proficient in reading comprehension relies on mastering decoding. A skill that enables a student to map letters to their corresponding speech sounds and meaning. Reading comprehension is highly dependent on a reader's ability to decode words accurately, fluently and effortlessly (D. LaBerge & S. J. Samuels, 1974). Working memory and cognitive control (Cutting & Scarborough, 2006). Moreover, previous behavioral studies indicate that working memory and cognitive control play crucial roles in moderating reading comprehension and decoding relationships.

Planning abilities, attention and working memory, have shown to support reading comprehension directly above and beyond foundational reading and language abilities. Intervention studies report that training working memory enhances reading abilities.

Conclusion, the author will focus on brain work and use scientific methods to explain the process of reading and perform positive attitude toward reading. The researcher planned to use the knowledge of Neurolinguistics to solve the problems in Japanese reading class. To help the students find out the reasons they have bad performance in reading. To find out which parts in the processing of reading have problems and solve them.

Research question

Q1. What are the current problems in reading comprehension and attitude toward reading for Japanese language in context of university students?

Q2. What are the components of the instructional model to enhance Japanese reading comprehension skills and attitude toward reading among university students?

Q3. How does the instructional model enhance Japanese reading comprehension skills among university students works?

Q4. How does the instructional model enhance attitude toward reading among university students works?

Research objective

1. To investigate the current problems in reading comprehension and attitude toward reading for Japanese language in context of university students.

2. To develop an instructional model to enhance Japanese reading comprehension skills and attitude toward reading among university students.

3. To study the results of using the instructional model by mean of reading comprehension skills.

   3.1 To compare pretest and posttest score in both control and experimental groups.

   3.2 To compare the posttest score of experimental group and control group.

4. To study the results of using the instructional model by mean of attitude toward reading.

The significance of the research

1. This research will develop a new instructional model to enhance Japanese reading comprehension skills and attitude toward reading among university students.

2. The university students that learning with a teacher who uses this instructional model will enhance their Japanese reading comprehension skills and attitude toward reading.

3. The university teachers who use this instructional model will enhance their teaching skills.

4. The university teachers will have innovation in the instructional model to enhance the students' Japanese reading comprehension skills.

Hypothesis of the Research

1. The population will have more posttest score than pretest score in both control and experimental groups.

2. The experimental group will have more score than control group.

Scope of the research

Developing instructional model to enhance Japanese reading comprehension skills and attitude toward reading among university students.

Following the research objectives, the research design and development was divided into three phases namely, Phase I contextual study, Phase II Construct tentative model, and Phase III Implementation.

Phase I Contextual study.

Using document research, questionnaires, and interviews to identify the current problems of implementation of Japanese reading.

To investigate the current problems in reading comprehension and attitude toward reading for Japanese language in context of university students. To find out reading problems, the needs of teachers and students, problems of reading attitude.

Phase II Construct tentative model.

To construct an instructional model to enhance Japanese reading comprehension skills and attitude toward reading among university students and confirm the model.

Phase III Implementation.

Implementation and confirmation of the instructional model effectiveness.

This study is a control group and experimental group design. The control group uses the traditional instructional methods, and the experimental group uses the new instructional model -the reading comprehension skills model to teach.

The samples are two natural class with 72 third-year students (enrolled in 2018). These subjects with same Japanese level and different gender and age. One class (n=36) as a control group (CG) uses the traditional instructional model and another class (n=36) as an experimental group (EG) that uses the new instructional model.

Subject: Academic reading in Japanese language.

Time scope: The time scope in this phase is from September to December 2020. Total 36 hours classroom teaching.

Place: This research will study in the School of Foreign Languages in Shaoyang University in China.

The dependent variable is the instructional model.

The independent variables are reading comprehension skills and attitude toward reading.

Definition

Operational definitions of terms: The researcher adopts the following comprehensive, clear and direct operational definitions through reviewing related literature and other previous studies.

1. Instructional model

The instruction model is a description of a learning environment, including our behavior as teachers when that model is used. It based on theory and the six components of instructional model means Focus, enhance reading comprehension

skills; Syntax, warm up, presentation, practice, production, wrap-up; Principles of reaction, supporting discussion; Social system, teacher as an initiator, students as cooperators; Support system, well-organized materials, multimedia; Application and effects, reading comprehension skills, positive attitude toward reading.

2 . Reading comprehension skills

Reading comprehension means automatic process the words to understand the meaning of the text, to get the new information, and combine the prior knowledge to form the reader's ideas. Students learn practice and decipher new vocabulary in text. Independent reading, ask and answer questions. It means a complex cognitive process of extracting and constructing meaning through interaction and involvement with written text, which includes fluency, vocabulary development, and understanding what words and connected text means. In addition, it is the ability to make sense of the author's message. Reading a passage involves decoding, comprehension, and the interaction between the two processes. The components of reading comprehension mean decoding, fluency, vocabulary, sentence construction and cohesion, reasoning and background knowledge, and working memory and attention.

To measure reading comprehension skills the author made reading test paper that consists vocabulary, grammar section, reading comprehension passages, and sentences translation to assess sentence structure, grammar in passage, types of literature, content comprehension, information retrieving. In which grammar via multiple choice questions, and passages comprehension via judgement, write answer and multiple-choice questions, vocabulary via translate the loan words, write down "Chinese characters" and pronunciation, and sentence translation.

3 . Reading problems

The current problems of Japanese language reading are students lack linguistics knowledge and the attitude toward reading are negative. Linguistics knowledge contains grammar, vocabulary, and the structure of sentences. Word order is normally subject-object-verb with particles marking the grammatical function of words. The strict rule of word order is that the verb must be placed at the end of a sentence. The basic sentence structure is topic-comment.

4．Attitude toward reading

The attitude in this study is referred to the attitude towards academic reading Japanese language among university students. Enduring systems of positive or negative evaluations of Japanese reading. Attitude means the readiness of the psyche to act or react in a certain way. An attitude contains cognitive (personal, evaluative beliefs), affective (feelings and emotions), and behavioral (action readiness and behavioral intentions) components. Using the Likert Scale to assess attitude. This scale is a set of opinion statements which when combined, provide information about an attitude.
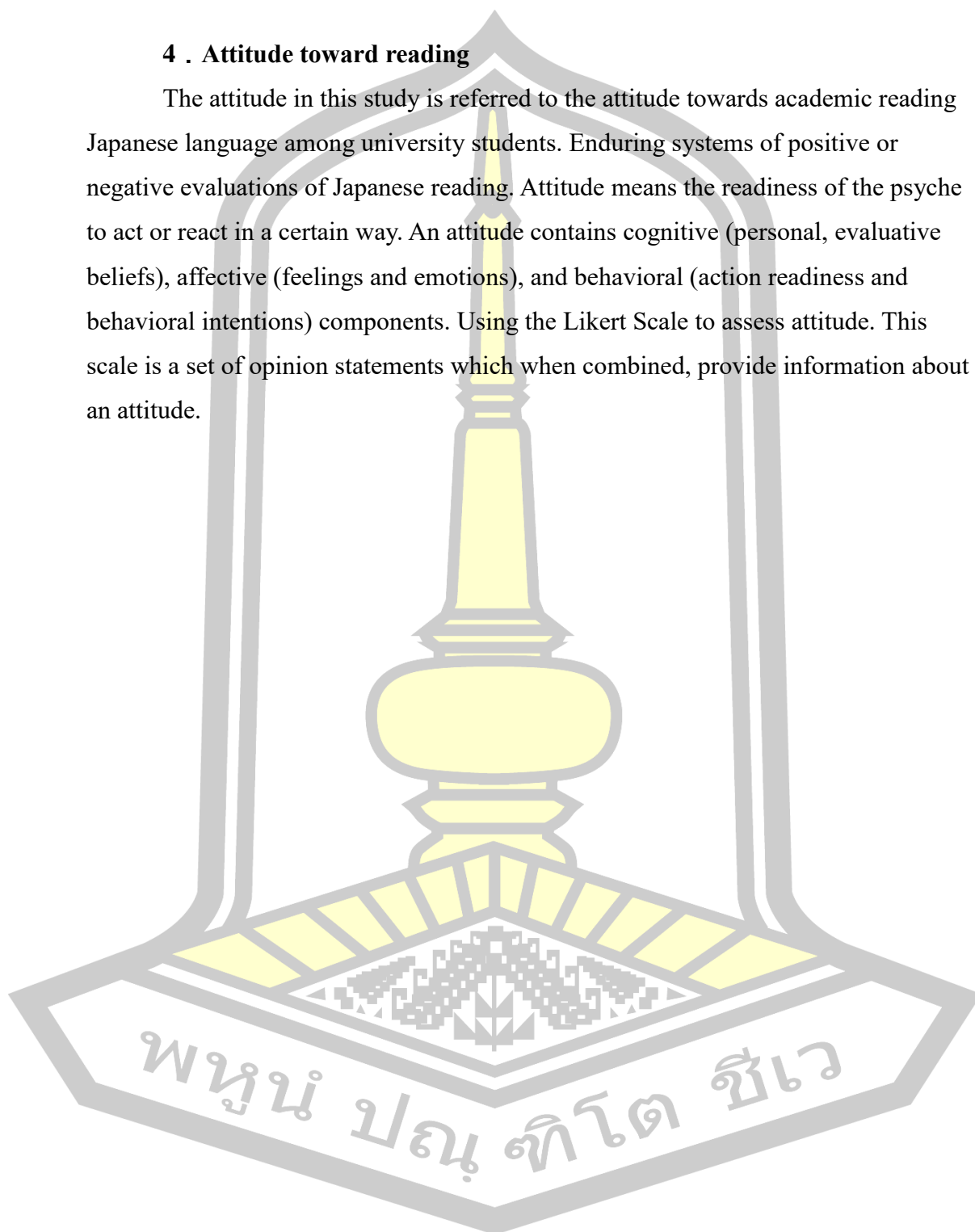
CHAPTER II

LITERATURE REVIEW

This chapter will follow the list below.

2.1   Instructional model

2.2   Theory and principle

2.3   Japanese language

2.4   Reading comprehension skills

2.5   Attitude toward reading

2.6   The concept of 'Developing instructional model to enhance Japanese reading comprehension skills and attitude toward reading among university students'

2.7   Related research

2.1 Instructional model

This part contains various related research and literature including principles to develop and design instructional models and recent related research from texts, academic journals, research reports, and websites. Details are as follows.

1. Definition

Instructional model is the product of teachers who create a repertoire of practices as they interact with their students and shape environments intended to educate them.

Models of teaching are really models of learning. As teachers help students acquire information, ideas, skills, values, ways of thinking, and means of expressing themselves. Teachers are also teaching students how to learn (Joyce et al., 2003).

The instructional model refers to the plan or model that can be used for instruction; The plan or model that will be a guide for designing instruction which assists learners to attain learning objectives; The plan or model which consists of important procedures or steps of instruction together with teaching methods and techniques; the instructional model can put theories, principles, or approaches into learning condition; and to proof, testing, and acceptance that the plan or model to be used as the plan for instruction to assist learners to attain particular learning objectives is indeed effective (Joyce & Weil, 1986).

Models are prescriptive teaching strategies which help to realize specific instructional goals (Eggen, 1979).

A model of teaching is a description of a learning environment, including our behavior as teachers when that model is used (Joyce & Weil, 2014).

Instructional models are the specific instructional plans which are designed according to the concerned learning theories.

It provides a comprehensive blueprint for curriculum to design instructional materials, planning lessons, teacher pupil roles, supporting aids and so forth.

Models of teaching are very effective teaching strategies which are meant for transacting specific topic to students. The nature of the topic, presentation method and classroom environment will direct the teacher that what model of teaching s/he has to select for teaching the concerned topic.

A model of teaching consists of guidelines for designing educational activities and environments. Model of teaching is a plan that can also be utilized to shape courses of studies, to design instructional material and to guide instruction (B.K.Passi L.C.Singh and D.N.Sansanwal, 1991).

A model of teaching is a set of interrelated components arranged in a sequence which provides guidelines to realize specific goal. It helps in designing instructional activities and environmental facilities, carrying out of these activities and realization of the stipulated objectives (Angira and Others, 1983).

Conclusion, instructional model is plan for instruction, a guide for designing instruction, is important procedures of instruction. In this study the author makes a new instructional model to enhance reading comprehension skills and attitude toward reading.

2. Component / Type

The element of a model of teaching represents its structure, process and teaching aids of the instruction. There are different types of instructional model.

2.1 Type

Every instructional model has its specific objective. In order to achieve the objective of an instructional model, the teacher has to choose right type of model for achieving the particular objective. The teaching models have been classified into three main types (Armstrong, 2018):

The first is philosophical teaching models: the insight model by Plato, the Impression model of teaching by John Locke and the Rule model by Kant.

The second is psychological model of teaching: Basic Teaching model by Robert Glaser, An Interaction model of teaching by Flander, and Computer based teaching model by Daniel Davis.

The third is modern teaching models (Joyce and Weil, 1980)

Table 1

Type	Family	Models
1. Philosophical teaching models	A- The Insight model (Plato)	
	B- The Impression model of teaching (John Locke)	
	C- The Rule model (Kant)	
2. Psychological model of teaching	A- Basic Teaching model (Robert Glaser, 1962)	
	B- An Interaction model of teaching (N.A. Flander)	
	C-Computer based teaching model (Daniel Davis)	
3. Modern teaching models (Joyce and Weil, 2014)	I. Modern teaching models	a. The Concept Attainment Model
		b. Inquiry Training Model
		c. The Advance Organizer Model
		d. Cognitive Growth Development Model
		e. Biological Science Inquiry Model
	II. Personal Models	a. Non-Directive Teaching Model,
		b. Synectics Teaching Model,
		c. Awareness Training Model,
		d. Classroom Meeting Model.
		e. Conceptual System Model

	III. Social Interaction Models	a. Group Investigation Model, b. Role Playing Model, c. Jurisprudential Inquiry Model, d. Laboratory Training Model, e. Social Simulation Model, f. Social Inquiry Model.
	IV. Behaviour Modification Model	a. Mastery learning b. Direct instruction c. Simulation d. Social learning e. Programmed schedule f. (task performance g. reinforcement)

1)Philosophical teaching models:

Israel Saffer had mentioned such types of models. These include

A- The Insight model (Plato).

-The insight model discards the assumption that the meaning of an instructional model is merely deliver the knowledge or ideas through teaching to the mental domain of the students. According to this model the knowledge cannot be provided merely through the expression of sense organs, but the knowledge principles of language are most important. Edge of the content is also a necessity. The knowledge cannot be provided merely by speaking the words or listening them. Mental processes and language both work together

B- The Impression model of teaching (John Locke).

-It is based on a general assumption the child's brain is like a clean slate at the time of birth. Whatever experiences are provided through teaching, creates impression

on child's brain. These impressions are termed as learning. In the learning process the sense organs

C- The Rule model (Kant)

-In this model much importance is given to the logic. Kant gives importance to logic, because in it following certain rules is essential. The objective of rule model is to develop the logical reasoning capacities of the student. Some particular rules are followed. Planning, organization and interaction of teaching is performed under specific rules.

2)Psychological model of teaching:

John P. Dececco had mentioned such types of models. It includes

A- Basic Teaching model (Robert Glaser)

- Robert Glaser (1962) has developed a stripped-down teaching model which, with modifications, is the basic teaching model. The basic teaching model divides the teaching process into four components or parts. It will be useful in several ways. The four parts of the model represent the basic divisions. Instructional objectives, Entering behavior, instructional procedure, and finally performance assessment.

B- An Interaction model of teaching (N.A. Flander)

- Flander considered teaching process as an interaction process. He divided class-room behavior in ten categories known as Flander's ten category system. In this model the behavior of student and teacher is analyzed. An interaction between a teacher and the student is more emphasized in this model.

C-Computer based teaching model (Daniel Davis)

- It is the most complicated model having, entering behavior, determination of objectives and teaching aspect as fundamental elements. In this element computer teaching plan is selected according to the entering behavior and instructional objectives. The performances of the student are evaluated. Accordingly, alternative teaching plan is presented. In this model, the diagnosis and teaching go side by side. Remedial teaching is provided on the basis of diagnosis. Individual differences are also given importance.

3)Modern teaching models (Joyce and Weil)

The most comprehensive review of teaching models is that of Joyce and Weil (1980). Bruce R. Joyce has divided all the teaching models under the title "Modern teaching models".

Joyce and Weil, 1980

They identified 23 models which are classified into four basic families based on the nature, distinctive characteristics and effects of the models. These four families are:

1. Information Processing Models

2. Personal Models

3. Social Interaction Models

4. Behavior Modification Models.

Within the families, there are specific models that are designed to serve particular purposes.

Joyce & Weil, 2014

Joyce & Weil (2014) categorized the models of teaching into four families. The classification has been made in accordance with the theoretical basis and fundamental aim of the teaching model. The four families explained below in detail.

The information processing family, the social family, the personal family, the behavioral system family.

Traditionally, models of teaching are represented by a broad array of teaching systems, each system containing a distinctive philosophical foundation, or theory of learning basis, with related pedagogical methodologies.

Basically, there are two types of models of teaching - Ones that can be cleanly categorized and placed into one of the classic philosophical orientation groupings - social; information-processing; personal; or behavioral systems; or ones that are hybrid/mixed models that have combined elements from different families of learning like those that can be labeled as constructivist.

2.2   Families of models of teaching

1)The information processing family

Information-processing models emphasize ways of enhancing the human being's innate drive to make sense of the world by acquiring and organizing data,

sensing problems and generating solutions to them, and developing concepts and language for conveying them (Joyce et al., 2003).

Models in the information processing family focus on the cognitive activity of student. It includes scientific inquiry for collecting original information, organizing and properly storing of the information. Some models provide the learners with information and concept, some emphasis concept formation and hypothesis testing and still other generate creative thinking.

Table 2 The models developed by researchers in history

	Eggen, Kauchar and Harder (1979)	Joyce & Weil (2014)	Joyce & Weil (5th edition, 1996)	Joyce & Weil (1980)
1	General Inductive Model	Inductive Thinking (classification-oriented)	Inductive Thinking (classification-oriented)	Inductive Model
2	Concept Attainment Model	Concept Attainment	Concept Attainment	Concept Attainment Model
3	Taba Model	The picture-word inductive Model		
4	General Deductive Model	Scientific Inquiry	Scientific Inquiry	
5	Ausubel's Model			
6	Such man's Inquiry Model	Inquiry Training Model	Inquiry Training	Inquiry Training Model
7		Mnemonics (Memory assists)	Memory Model (Memory assists)	Biological Science Inquiry Model
8		Synectics Model	Synectics	Advance Organizational Model
		Advance Organizers	Advance Organizers	Cognitive Groth Development Model

The primary purposes are:

1. The mastery of methods of inquiry

2. The mastery of academic concepts and facts

3. The development of general intellectual skills such as the ability to reason and think more logically

Joyce & Weil (2014) listed eight models in Information Processing Model.

Eggen, Kauchar and Harder (1979) have discussed six Information Processing Models.

Models of this family focus on the intellectual capacity of the learner.

Table 3 Brief Review of the Information Processing Source Models

	Model	Developer (Redeveloper)	Aims and application
1	Inductive Thinking Model (classification-oriented)	Hilda Taba (Bruce Joyce)	To develop inductive reasoning, mental inductive process, and understanding of concepts and principles.
2	Concept Attainment Model	Jerome Bruner (Fred Lighthall)	
3	Scientific Inquiry Model	Joseph Schwab	
4	Inquiry Training Model	Richard Suchman	To develop individual competencies to achieve the social objective.
5	Memory Model (Memorization)	Jerry Lucas	
6	Synectics	William Gordon	
	The picture-word inductive Model	Emily Calhoun	
7	Advance Organiser Model (Advance Organizational Model)	David Ausubel	To understand concepts and facts and to make the content purposeful and interesting.
	Cognitive Development Model	Jean Piaget	To develop general intelligence and logic, social and moral development.
	Biological Science Inquiry Model	Joseph Schwab	To develop understanding of research methodology, to think logically on social problems.

Information processing 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.

As the categorical title obviously implies, 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.

Primary examples designate in this area of might be David Ausubel's Advanced Organizers, or Jerome Bruner's Concept Attainment models.

a)   Inductive Thinking Assumptions

Content is important but so is learning how to think

Thinking can be taught

Thinking is an active transaction between the individual and the data

Thought processes evolve in a predictable and ordered way that cannot be altered

Taba suggested the use of three strategies

-Concept formation

-Interpretation of the data

-Application of principals

b)   Concept Attainment Assumptions

Concepts are essential for understanding

Concepts are ways of linking unrelated information

Mental concepts are a way of organizing information and assisting memory

Concepts are the file folders of the mind

Based on distinguishing between exemplars and non-exemplars

All concepts have a name, belong to a larger class and possess criteria attributes that define membership

c)   Scientific Inquiry Assumptions

While facts are important, it is also important for kids to be able to execute the scientific method

Teaching of only facts leads students to believe that science is fixed truths and not an active evolving process

Students need to see the "humanity" in science and understand how we have reached tentative hypotheses about how things work

d)   Memorization Assumptions

Personal power is derived from knowledge

Memorization increases the storehouse of knowledge which can be accessed rapidly

Increasing the amount in memory is like having a larger hard drive full of information

Mnemonics is a way of helping students better connect these bits of information and thus retaining more usable information

e)   Synectics Assumptions

Creativity is important in everyday activities

Creativity is not mysterious, it can be described and taught

Creativity is similar in all fields. The same processes underlie all fields

Individual and group investigation are very similar

Bringing creative process to consciousness and developing aids can enhance the product

Emotional component is more important than intellectual

Irrationality more important than rational

Metaphors and analogies are the key to this process

f)   Advanced Organizers Assumptions

Efficient transmission of information is a desirable goal for teachers

Teacher should play the role of organizer and presenter of subject matter through lectures, readings, and structured tasks

Advanced organizers help prepare the mind for this information - create a cognitive structure for the information

Each subject discipline has a way of organizing the content of the filed. Students can use these organizational patterns to help understand new content

2)The Social Family

The focus of the social model family is to build synergy (collective energy) in the classroom for addressing ongoing problems of personal, social, national as well as international importance. Social models help the students to develop Self-directed problem-solving ability, sense of belongingness towards the society and make them responsible citizens of the country.

The primary goals (Armstrong, 2018) are:

-To help students work together to identify and solve problems

-To develop skills to human relations, and

-To become aware of personal and social values.

It gives emphasis to the relationship of the individual with the society.

Table 4**Brief Review of the Models**

	Model	Developer		Aims and application
1	Group Investigation Model	John Dewey, Herbert Thelen	Focuses on interpersonal group skills as students engage in acquiring information	To develop democratic abilities, use of knowledge and skills in life of individual and society.
2	Jurisprudential Inquiry Model	Donald Oliver, James P. Shaver	Uses the jurisprudential frame of reference to solve social issues	To solve problems based on information and reasoning power.
3	Laboratory Training Model	National Training Laboratory		To develop group skills individual capacities and adjustment.
4	Role Playing Model	Fannie & George Shaftel	Students assume roles and become the source of their inquiry.	To develop competencies of problem solving and adjustment
5	Social Simulation Model	Cybernetic Psychologists		
6	Social Inquiry Model	Thelen, Oliver, Sharer	Problem solving using social issues	

• Model of Group Teaching & Co-operative Learning

• Simulation Model

–Sociodrama

Social interaction:

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.

The Schaftel's Role Playing Model is one of the more popular models in this group.

Donald Oliver's The Jurisprudence Model also exemplifies a form of social learning.

a) Classroom Meeting:

Strengthens responsibility towards self and others. This model has rules and structure and specified intentions.

b) Laboratory Method:

Group/interpersonal skills, personal awareness, and flexibility skills are stressed in this model

c) Cooperative or Collaborative Learning:

Collective arrangement and division of tasks, sharing results and ideas. There are a number of authors claiming this model – significantly Johnson and Johnson, and also Robert Slavin. There are also cooperative models that have more specific purposes like the Jigsaw Model.

d) 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.

e) Graffiti Model:

Graffiti is a cooperative learning structure in which students are asked to give written responses to questions posed by a teacher

f) Sociodrama

Students assume roles, acting out issues in order to facilitate awareness and understanding about concepts or important issues

g) Role-playing

Emphasize the social

Role-playing is a teaching strategy that fits within the social family models-Joyce and Weil, 2000.

- stimulate students both socially and intellectually

- Improves interpersonal skills and enhances communication

Role-play four stages

1. Preparation and explanation of the activity by the teacher

2. Student preparation of the activity

3. The role-playing

4. The discussion after the role-playing activities

h) Jurisprudential Inquiry

Assumptions

Resolving complex issues requires citizens who can talk to one another and negotiate differences

Resolution should rest on the concepts of justice and human dignity

Success depends on understanding values of society ability to clarify and resolve issues knowledge of public issues

3)THE PERSONAL FAMILY

The personal models begin from the perspective of the self-hood of the individual. Individual consciousness and development of unique personality is the chief focus of this family. The models in personal family attempt to make them understand their self and thereby students can shape their future.

Developing an individual into an integrated, confident and competent personality.

The cluster of personal models pays great attention to the individual perspective and seeks to encourage productive interdependence, increasing people's self-awareness and sense of responsibility for their own destinies (Joyce et al., 2003).

The primary goals (Armstrong, 2018) are:

-To increase the student's self-worth,

-To help students understand themselves more fully.

-To help students recognize their emotions and become more aware of the way emotions effect other aspects of their behavior,

-To help them develop goals for learning,

-To help students develop plans for increasing their competence,

-To increase the students' creativity and playfulness,

-To increase the students' openness to new experience.

Purpose-

One - develop greater mental and emotional health by developing self-confidence and a realistic sense of self

Two - increase the proportion of education that emanates from student

Three - develop specific kinds of qualitative thinking such as creativity, personal expression, and reflection

Types -

Nondirective teaching and concepts of self.

Models including this family indents for the personal development of the learner. Non-directive teaching and enhancing self-esteem belong to this family (Joyce et al., 2003).

Table 5 Brief Review of the Personal Source Models

	Model	Developer	Aims and application
1	Non-directive Teaching	Carl Rogers	To develop self-learning by auto instructions, self-research and self-understanding
2	Synetics Model	William Gordon	To develop creative competencies for problem solving.
3	Awareness Training Model	William Schutz and George Brown W.S. Fietz	To develop individual competencies and mutual relations.
4	Classroom Meeting Model	William Glasser	To develop skills of self – understanding and capacities of dutifulness.

5	Conceptual System Model	David. F. Hunt	To adjust with the environment with flexibility in the personality.
6	Developing Positive Self-Concepts		
7	Relaxation and stress reduction		Exploring personal goals for relaxation or using self-initiated relaxation techniques to calm anxieties in social settings.
8	Selection, Detection, Connection Model		A self-directed teaching model for highly intrinsically motivated high school students.
9	Enhancing self-esteem	Abraham Maslow (Bruce Joyce)	

Personal source (aka Persona list):

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.

Carl Roger's Non-directive Teaching Model would be a good example for this group.

Nondirective Teaching

Based on work of Carl Rogers in nondirective counseling

Focus is to nurture not control students

Teacher does not sacrifice the long view by forcing immediate results

Responsibility shifts to students with teacher as facilitator

Assumptions

Students should learn to solve own problems even though they may initially make mistakes teacher facilitates this problem-solving teacher and student work as partners in the process

Nondirective teaching: Focuses on self-awareness, understanding, autonomy, and self-concept

4)The behavioural system family

Modification of behavior is the main focus of this family. The stance taken is that human beings are self-correcting communication systems that modify behavior in response to the information about how successfully tasks are navigated. The role of predetermined objectives, observable behavior, clearly defined task and methods, feedback and reinforcement are the foundations of models in behavior family.

This family has mastery learning, direct instruction, simulation, social learning, and programmed schedule (task performance reinforcement) model (Joyce et al., 2003).

It emphasis on the change in observable behavior of the learner.

Table 6Brief Review of the Behavior Modification Source Model

	Model	Developer	Aims and application
1	Contingency Management Model	B.F.Skinner	
2	Self-Control Through Operant Methods	B.F.Skinner	
3	Stress Reduction Model	Joseph Wolpe	
4	Desensitisation Model	Rimm & Masters	
5	Assertive Training Model	Wolpe, Lazarus	
6	Operant Conditioning Model	B.F.Skinner	To achieve the objectives of lower level of cognitive domain on the basis of individual differences (Armstrong, 2018)
7	Mastery learning	Benjamin Bloom	

		James Block	
8	Direct instruction	Tom Good Jere Brophy Carl Gereiter Ziggy Engleman Wes Becker	
9	Simulation	Carl Smith Mary Smith	
10	Social learning	Albert Bandura Carl Thoresen Wes Becker	
11	Programmed schedule (task performance reinforcement)	B. F. Skinner	

Behavioral:

Behavioral techniques are amenable to highly structured outcomes that concentrate on observable objectives such as learning to read, physical skills, behavioral and emotional adaptations and restructuring.

These models are highly structured with finite goals toward specific pre-determined ends.

B. F. Skinner is one of the more well know developers of behavioral techniques like his Operant Conditioning.

Behavioral is lawful and subject to variables in the environment

Stimulus-response-reinforcement cycle increases likelihood of response

Operant conditioning and counter conditioning are two forms

Assumptions behavioral is observable and can be altered

Good and poor behaviors and attitude are learned through conditioning

Behavioral goals are specific, discrete and individual

Theory focuses on present

Major Concepts of Behavioral Systems Family

Stimulus –

any condition, event, or change in the environment which produces a behavioral change

Responses may be overt or covert (tension or anxiety)

Complex behaviors are made up of response repertoires

Immediate reinforcement is best

Rein forcers may be positive or negative

Knowledge of results is very powerful in schools

Baby steps are best

Controlling the environment is powerful for students

Social climate of classroom can be important

Reinforcement schedule is important

Models of teaching are very effective teaching strategies which are meant for transacting specific topic to students. The nature of the topic, presentation method and classroom environment will direct the teacher that what model of teaching s/he has to select for teaching the concerned topic.

Common features:

Models usually contain common features and these may include:

An identified purpose or area of concentration;

Underlying explicit and implicit assumptions about the characteristics of learners and about the teaching-learning process (These are directly tied to guiding tenets of the different divisions of educational psychology and theories of learning).

Guidelines for developing specific educational experiences;

Definite patterns and requirements for each instructional event;

A body of research surrounding their development and implementation, and/or an evaluation of their effectiveness.

2.3 Component

1)   Elements of an instructional model

According to De Cecco (1968), Joyce and Weil (1992) and Khammanee(2007), the important elements of an instructional model are principles,

purposes, contents and procedures, analysis of pre-learning behavior, teaching and learning activities and procedures, and learning assessment and evaluation.

Details are as follows.

(1) Principles are beliefs, ideas, and theories which are employed as bases to construct the instructional model. Consequently, principles of the instructional model guide determining learning objectives, contents, activities and the sequences of learning activities of the instructional model.

(2) Purposes determine expected learning outcomes of the instructional model.

(3) Contents and procedures define contents and activities employed in teaching and learning in order to attain the purposes of the instructional model.

(4) Analysis of pre-learning behaviors is used to detect learning readiness and prior knowledge of learners.

(5) Procedures and activities which influence teaching and learning refer to any practices of teaching and learning when the instructional model is implemented.

(6) Assessment and evaluation of learning are performed to evaluate the effectiveness of the instructional model.

2) Components in Models of Teaching (2014)

In Joyce, Weil, and Calhoun's Models of Teaching, 9th ed. (2014) they note that in order to be designated a bona fide model, it should qualify in six of the following areas. Focus, syntax, principles of reaction, the social system, support system, application and effects.

Focus is the central intent of the model. Focal components revolve around the main objective of the model. Is it the focus of the learning event to encourage learning by manipulating thought or types of thinking; growth in learning through external stimuli or rewards; social learning, or social and emotional growth through interaction; or increased levels of self-achievement and personal growth through personally directed choices? Models are usually developed with a focus, an end-game, or specific intention in mind.

Therefore models differ one from the other in terms of their primary objective or focal point of their intended outcomes.

Syntax describes the model's structure and includes the sequence of steps involved in the organization of the model. It includes the major components and the phases of unfolding, or the sequencing of steps, and describes how the model progresses. Obviously the syntax can be quite different for each model.

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. Often responses in using a designated model should be appropriate and selectively specific. This element is concerned with the teacher's reactions to the students' responses. This portion of the model alerts the teacher on how to react to the responses of the students. It is here that the teacher learns whether the learners have been actively involved in the model's processes and steps.

The Social System describes the interactions between students and teacher as each model is viewed as if it were a mini society. Since every instructional model is different, each model will have its own social system and rules of engagement. This portion concerns the interactive roles and relationships between the teacher and the student, expected norms, and which student behaviors should be rewarded. These may be overtly described or simply inferred. Depending on the philosophical orientation of the model, in some models the role of the teachers is dominant, while in others his or her role is passive. In some models the roles center on the teacher, and in others the concentration is on the students. There are still other models that require shared roles whereby teachers and students share roles equally. In this segment both motivational strategies and tactics for engaging students could be discussed too.

Support system defines the supporting conditions required to implement the model successfully. 'Support' refers to any additional requirements, beyond the usual general human skills and capabilities, that are needed to implement the model. This component relates to any additional requirements beyond those generally possessed by teachers or found in schools. What requirements are needed to make this model work? Are special skills or knowledge needed; or is there special equipment, media, or learning environment requirements that need to be accessed in using this model?

This support would also include special books, films, laboratory kits, reference materials, permissions, facilities, etc.

Application and effects are rather apparent - how can the students use what the model teaches? Application is the utility of the model as it can be transferred to other situations. 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.

3)   Other fundamental elements

Normally the majority of instructional models are based on the following six elements:

(1) Syntax

It is the steps or phases (Strategy) of the model being presented before the class. It illustrates the logical and sequential order of the teacher-student activities of the instruction procedure. It describes the complete program of action of the model.

(2) Social system

The social system of a model explains its nature of the learning environment. It describes the role and relationship of the teacher and students through the phases as well as designing the lesson. As each model is unique, the role of teachers and students in every model may vary according to the respective learning theory of the model is built. It also varies in phases to phases.

(3) Principle of Reaction

This is the extension of the social system. It deals with the rules of reaction to the students' responses in the classroom interaction. The reaction of the teacher must be in accordance with the theory of which model has been built. The teacher's reaction is desired when the students' responses/ behaviors are untouched with expected level responses and for giving reinforcement. It depends on the family of the model is presented.

(4) Support system

It includes all instructional aides used in a model of teaching. E.g. Books, Encyclopedia, Video clips, slides, Newspaper, Tab, Expert, Films, Specimen, etc.

(5) Application

It means the utility or usage of the learned material in other situations. Each model attempts to desirable the feasibility of its use in varying contexts related to goal achievements in terms of cognitive, and affective behavior modification.

(6) Effect of models of Teaching

Models of teaching have a very positive effect on students' behavior. Bruce Joyce classified the effect as the instructional effect and nurturant effect. Instructional effects are the direct effect of an instruction on students' cognitive, affective and psychomotor domains. Nurturant effects are the indirect effect other than the teacher intends to achieve through the model. It is the additional achievement gained by the students through the unique nature classroom interaction. Examples are the development of problem-solving ability, analytical thinking, critical thinking, social skill, tolerance, etc.

Conclusion, comparing many kinds of design, Joyce, Weil, and Calhoun's model (2014) has more details that can express the instructional model well.

The instructional model in this study will follow focus, syntax, principles of reaction, social system, support system, application and effects.

Table 7

Component	Definition	Element
Focus	the central intent (main objective) of the model, specific intention in mind	
Syntax	the model's structure and includes the sequence of steps the logical and sequential order of the teacher-student activities of the instruction procedure.	the major components and the phases of unfolding, the sequencing of steps, and describes how the model progresses.
Principles of Reaction	tell the teacher how to regard the learner and how to respond to what the learner	the teacher's reactions to the students' responses. the teacher learns whether the

	does during the use of the model.	learners have been actively involved in the model's processes and steps.
Social System	the interactions between students and teacher as each model is viewed as if it were a mini society. the nature of the learning environment the role and relationship of the teacher and students through the phases as well as designing the lesson.	the interactive roles and relationships between the teacher and the student (Depending on the philosophical orientation of the model, the role of the teachers is dominant, or passive. the roles center on the teacher/ the students. teachers and students share roles equally) expected norms, which student behaviors should be rewarded. could discuss both motivational strategies and tactics for engaging students.
Support system	the supporting conditions required to implement the model successfully. Support' refers to any additional requirements all instructional aides used in a IM	special skills or knowledge; special equipment, media, or learning environment requirements, special books, films, laboratory kits, reference materials, permissions, facilities, etc. Eg. Encyclopedia, Video clips, slides, Newspaper, Tab, Expert, Specimen, etc.
Application and effects	how the students use what the model teaches.	the utility or usage of the learned material in other situations.

	Application is the utility of the model.	a direct effect on cognitive, affective and psychomotor domains. additional achievement is the development of problem-solving ability, analytical thinking, critical thinking, social skill, tolerance, etc.

3. How to develop / use instructional model

Models of teaching and learning are critical pieces to instructional planning and delivery because they help educators: Develop highly tuned and more varied professional repertoires; Allow them to reach larger numbers for students more effectively; Create either more uniform, or varied, or effective instructional events, guided by targeted subjects, content, or processes; Understand curricular foci better, especially as different models can be matched specifically to both learning outcomes and/or targeted learning populations; Gain needed insights into why some methods work with some learners, while others do not; Radically modify or redesign existing methods of teaching and instructional delivery so that emerging or altered instructional techniques may better meet the needs of today's students.

To construct an instructional model may follow ADDIE.

3. 1**ADDIE**

Clark (2000) presents a basic model used in the development of an instructional model whose systematic design consists of analysis, design, development, implementation, and evaluation.

This systematic and recursive design is continuously refined, and focuses on evaluation and making use of feedback to adjust the process.

Details are as follows.

1. Analysis is the step that involves understanding procedures and context which later influence the efficiency in designing an instructional model.

Activities are the analyses of learners, context, learning objectives, learning materials, tasks, resources, and other related learning factors.

2. Design is the step that involves utilizing proved methods and the most appropriate strategies in order to serialize elements of teaching and learning.

As designing focuses on the relationship between learning elements, and decision making on methods or models that enable the attainment of learning objectives, the designer should be well-informed on principles, learning theories, teaching and learning management and content design, material design, appropriate assessment and evaluation of learning.

3. Development is the step that involves constructing and developing a planned instructional model, contents, learning process, materials, and concrete evaluation, to adjust strategies of teaching and learning, and to determine the effectiveness of the final form instructional model.

4. Implementation is the step that involves implementing activities of teaching and learning, and confirming the effectiveness of the final form instructional model.

5. Evaluation is the step to identifying any weaknesses which can be detected and evaluated at any step during the development of the instructional model in order to adjust the model. This can be done repeatedly if necessary.

3. 2 To apply the basic model

To apply the basic model to develop the instructional model mentioned above, there are six steps: Contextual study; Determining the principles, purposes and other elements; Implementation guides; Evaluation of the instructional model; Adjustment of the instructional model; and Re-implementing the instructional model.

Details are as follows.

1. According to contextual study, problems of teaching, learning, and learners are analyzed meanwhile related theories and research findings of learning are synthesized.

2. According to determine principles, purposes and other elements, the determination of principles, purposes and other elements related to the results of contextual study and employed learning theories.

3. According to the implementation guides of the instructional model, details on learners' conditions, methods, preparation, and teaching and learning are provided to teachers who are willing to implement the developed model effectively.

4. According to the evaluation of instructional model, experts and participants of action research evaluate theoretical and practical feasibility of the final form instructional model.

5. According to the adjustment of instructional model, there are two phases: using the results of theoretical evaluation by experts to adjust the instructional model, and implementing the instructional model using both quantitative and qualitative data obtained from participants in action research through each cycle, conducting and adjusting repeatedly until it meets the criteria set.

6. According to re-implementing of instructional model, there is a second implementation to confirm its effectiveness through pre-experimental research design

3. 3 Presentation of an instructional model

Joyce &Weil (1992) present four steps to present an instructional model, orientation to the model, the model of teaching, application, and instructional and nurturing effects.

Details are as follows.

1) Orientation to the model explains the background of instructional model including important components of instructional model such as purposes, theories, assumptions and principles.

2) The model of teaching explains management of teaching and learning in detail, including syntax, social system, principles of reaction, and support system.

First, syntax details the steps or sequences of teaching or activities of teaching and learning.

Second, the social system details roles of teachers, students, and the interaction between teacher & student, and student & student, which are particular to each role model.

For instance, the teacher takes the role of activity leader, facilitator, guide, and provider of information.

Third, principles of reaction detail the manner in which a teacher deals with students, responds to student behaviors such as giving students rewards, allows freedom to act out ones' ideas, expresses opinions, and does not judge whether an opinion is right or wrong.

Finally, support system details conditions or necessary factors which help implement a model successfully. Examples are laboratory room instructional models, which are necessary to get help from well-trained experiment leaders and the skills practice instructional model, where it is necessary to practice in one's field of work or on work sites where work conditions are authentic.

3) Application gives suggestions and guides to successfully apply the developed instructional model such as what content should be used with it and at what level.

4) Instructional and nurturing effects deal with direct and indirect expected results on the implementation of the instructional model. These results can be used later as a guide for teachers who are willing to use that model.

4. How to evaluate instructional model

Evaluation is a systematic process of collecting and interpreting, evidence of students' progress. It is a continuous process.

Comprehensive Evaluation:

It includes evaluation of all aspects of a student, i.e., curricular, co-curricular & personality/social qualities.

Continuous Evaluation:

Valuation of pupil's performance throughout the academic year, i.e. projects, assignment, class test, seminars, field study, debates, etc.

Terminal evaluation: Evaluation of the performance of the students at the end of a term.

Characteristics of instructional model

The following are the chief characteristics of a good instructional model:

Each model has built up based on particular learning theory; Creation of congenial learning environment in the classroom; Effective interaction between the

teacher and students; Planned use of appropriate strategies; Teaching process are systematically, sequentially and logically arranged; Clear and specified roles for teachers and students; Large scope for supporting material; Ensure active participation of entire students in the class; It raises the students' level of aspiration, motivation and interest in learning; Every model foster and strengthen the cognitive structure of the student.

In conclusion, the instructional model refers to learning and teaching conditions which are systematically planned by applying educational philosophies, learning theories, principles, approaches, and beliefs, and consists of procedures or steps of teaching and learning as well as teaching methods and techniques.

The instructional model is used as a teaching and learning plan in order to assist learners to attain particular learning objectives.

2.2 Theory and principle

The theories and principles to make the instructional model are Neurolinguistics, Information processing theory, Metacognition and Scaffolding.

1. Neurolinguistics

How to apply into practice.

Neurolinguistics is a branch of linguistics dealing mainly with the biological basis of the relationship of the human language and brain. Neurolinguistics is historically rooted in the development in the 19th century of aphasiology, the study of linguistic deficits (aphasias) occurring as the result of brain damage (Phillips, 2005).It has been determined that the left hemisphere of the brain plays a major role in language comprehension and production (Yule, 2010) as early as the 19th century.

One of the first people to draw a connection between a particular brain area and language processing was Paul Broca (Phillips, 2005) who found brain damage on the left frontal lobe, in an area now known as Broca's area.

Phrenologists had made the claim in the early 19th century that different brain regions carried out different functions and that language was mostly controlled by the frontal regions of the brain, but Broca's research was possibly the first to offer empirical evidence for such a relationship, (Dronkers, 2007; Teter, 2000) and has been described as "epoch-making" (2009) and "pivotal" (Dronkers, 2007) to the fields of neurolinguistics and cognitive science.

Later, Carl Wernicke, after whom Wernicke's area is named, proposed that different areas of the brain were specialized for different linguistic tasks, with Broca's area handling the motor production of speech, and Wernicke's area handling auditory speech comprehension (Phillips, Sakai, 2005; Wiśniewski, 2007). Thus, it is claimed that speech is perceived by the Wernicke's area, then the signal is transferred through arcuate fasciculus to Broca's area, afterward, the signal goes to the motor cortex to articulate the word (Yule, 2010).

The work of Broca and Wernicke established the field of aphasiology and the idea that language can be studied by examining the physical characteristics of the brain (Teter, 2000).

The coining of the term "neurolinguistics" is attributed to Edith Crowell Trager, Henri Hecaen and Alexandr Luria, in the late 1940s and 1950s; Luria's book "Problems in Neurolinguistics" is likely the first book with Neurolinguistics in the title.

Neurolinguistics is the study of the neural mechanisms in the human brain that control the comprehension, production, and acquisition of language. As an interdisciplinary field, neurolinguistics draws methods and theories from fields such as neuroscience, linguistics, cognitive science, communication disorders and neuropsychology.

Much work in neurolinguistics is focused on investigating how the brain can implement the processes that theoretical and psycholinguistics propose are necessary in producing and comprehending language.

1.1 Definition

The journal Brain and Language offers this description of neurolinguistics: "human language or communication (speech, hearing, reading, writing, or nonverbal modalities) related to any aspect of the brain or brain function" -Elisabeth Ahlsén in Introduction to Neurolinguistics.

In a pioneering article published in *Studies in Linguistics* in 1961, Edith Trager characterized neurolinguistics as "a field of interdisciplinary study which does not have a formal existence. Its subject matter is the relationship between the human nervous system and language" ("The Field of Neurolinguistics").

The primary goal of the field of neurolinguistics is to understand and explicate the neurological bases of language and speech, and to characterize the mechanisms and processes involve in language use (Shari, 2003).

The goal of neurolinguistics is to understand how the cognitive capacity for language is sub served by the biological tissue of the brain (David, 2014).

Selective attention has traditionally been viewed as a sensory processing modulator that promotes cognitive processing efficiency by favoring relevant stimuli while inhibiting irrelevant stimuli.

1.2 Component / Type / Kind

1)Spoken word forms

Speech perception

Speech perception is a cognitive capacity。

Someone speaks, the sounds enter our ears, and we understand immediately.

Furthermore, speech input must be routed not only to the grammatical and semantic systems that analyze the forms and meanings of utterances, but also to the motor system that subseries articulation.

This is mainly because we rely on auditory-motor transformations when we learn how to say new words that we hear, especially during the early phase of language acquisition.

Such transformations also contribute, however, to the overt repetition of familiar words, and they are involved in covert auditory-verbal short-term memory as

well, like when you silently rehearse a piece of important information, such as a phone number.

In addition, abundant data indicate that the motor system contributes to ordinary, passive speech perception by constantly "resonating" to the speaker's articulatory movements.

Speech production

The first step in word production is to map the idea one wishes to express onto the meaning of a lexical item.

When the goal is to utter a particular word, the sound-based representation of that word in the phonological network of the temporal lobe serves as an "auditory target" that specifies what is expected to be heard.

As articulation proceeds, the incoming acoustic signals of the resultant self-produced speech are immediately compared with that target representation, and if any discrepancies are detected, instructions for making the necessary corrections are sent to the frontal articulatory network.

2)Printed word forms--Reading

For skilled readers, recognizing printed words seems easy.

In reality, the reader's eyes make four or five saccades (i.e., jerky movements) every second, and with each fixation the amount of detail that is perceived drops off precipitously from the fovea (i.e., the small circular space of maximal visual acuity), so that it is only possible to register a few letters at a time.

In order to recognize a written word, it is necessary to extract precisely those features that invariantly characterize that word across all of its possible manifestations, including changes in position, size, CASE, and font.

Large differences in visual form must be ignored (e.g., between "a" and "A"), small ones must be noticed (e.g., between "e" and "c"), and alternative linear orders must be detected (e.g., between "dog" and "god").

The sight of a printed word triggers a cascade of transformations that extends from the retina to the thalamus, from there to the primary visual cortex at the back of the brain, and from there through a series of anteriorly directed ventral occipitotemporal way-stations that extract increasingly rich and informative combinations of orthographic features.

From a representational perspective, this visual processing hierarchy starts with mere points and lines, but it leads progressively to the case- and font-specific letter shapes, case- and font-invariant graphemes (i.e., abstract letter identities), short sequences of graphemes, and entire words.

The hierarchy culminates in the Visual Word Form Area (VWFA), which is a cortical patch in the fusiform gyrus that has the following properties:

It detects the identities of printed words regardless of their position, size, case, or font, and regardless of whether they are perceived consciously or unconsciously;

It is more sensitive to real than unreal words; it is engaged equally by different types of familiar scripts (e.g., English, Arabic, Chinese, etc.), but it responds more strongly to familiar than unfamiliar scripts; and perhaps most important of all, it prefers printed words to other kinds of visual objects.

Once the form of a printed word has been recognized in the VWFA, how does it get mapped onto the associated phonological and semantic structures?

These processes are enabled by multiple pathways—some sub lexical, others lexical—but their precise neural underpinnings remain unclear. Still, some generalizations can be made.

Access to the proper pronunciations of printed words seems to depend mainly on the perisylvian circuit for speech processing, whereas access to the concepts encoded by printed words seems to depend mainly on a more inferior set of structures that includes the ATL as well as several other temporal, parietal, and frontal areas.

It is clear that printed words with regular spelling patterns, like the real word desk or the unreal word blicket, can be read aloud by mapping the graphemes directly onto the corresponding phonemes in rule-governed ways that bypass semantics.

Some researchers have argued, however, that printed words with irregular spelling patterns, like yacht, can only be read aloud by first accessing their meaning, especially if they have a low frequency.

A final observation that leads naturally to the next topic is that, just as the auditory perception of spoken words automatically activates the oral motor programs for uttering them, so the visual perception of printed words automatically activates the manual motor programs for writing them.

3)Word meanings

There is mounting evidence that conceptual knowledge is, to some extent, grounded in modality-specific systems for perception and action, such that many forms of semantic processing involve unconscious simulations of fairly high-level sensory and motor states.

Consider, for example, the meaning of the object noun hammer. Numerous studies suggest that this concept does not reside in any single place in the brain; instead, different fragments of it are scattered across different cortical regions according to the sensory or motor content of the type of information that is represented.

Thus, visual-semantic specifications of how hammers look (i.e., the relevant shape patterns) appear to be stored in some of the same ventral temporal areas that are engaged when hammers are visually recognized; auditory-semantic specifications of how hammers sound (i.e., the relevant banging patterns) appear to be stored in some of the same superior/middle temporal areas that are engaged when hammers are auditorily recognized; motor-semantic specifications of how hammers are used (i.e., the relevant swinging patterns) appear to be stored in some of the same front parietal areas that are engaged when hammers are grasped and manipulated in customary ways; and so on.

4)Sentences-Comprehension

The ability to understand complete sentences is underpinned by a large-scale, mostly left- lateralized neural circuit.

This circuit consists of several widely distributed but tightly interconnected cortical areas that operate synergistically to transform incoming strings of words into compositionally unified messages.

The researchers also observed in the section on speech perception that the posterior MTG projects forward to the ATL, and there is increasing evidence that the superior and middle sectors of this territory contribute to sentence comprehension in the following ways.

Some of the neuronal populations here seem to be involved mainly in parsing, taking as input the morphosyntactic features and sequential orders of the incoming words, and yielding as output hierarchically organized phrases and clauses.

Other neuronal populations in the superior/middle ATL appear to be devoted more to interpretation, specifically the compositional semantic process of incrementally building up the unified meanings of phrases and clauses.

And still others have been implicated in both types of operations—that is, parsing as well as interpretation.

In short, according to some lines of current thinking, the superior/middle ATL houses a combinatorial network that assembles and integrates progressively larger arrangements of grammatical and conceptual structures during online receptive sentence processing.

When sentences are heard rather than read, it is sometimes useful to keep the phonological forms of the words in an activated state until the comprehension process has been completed.

This is accomplished by the auditory-verbal short-term memory (STM) system, which, as mentioned in the section on speech perception, has two components.

First, the storage component represents activated word forms and is implemented by the phonological network in the posterior STG/STS; And second, the rehearsal component continually refreshes the contents of the storage component and is implemented by the articulatory network in the frontal lobe.

This STM system is often called the phonological loop, and it is frequently employed to facilitate sentence comprehension.

5)Phases in the development of linguistic capacity

In language development there appear to be four reasonably distinct phases - vocal learning, utterance acquisition, analysis and computation, and integration and elaboration - each having its own function within the larger period of language development (John, 1997).

1) Vocal Learning

2) Utterance Acquisition

3) Structure Analysis and Computation

4) Integration and Elaboration

Once analytical and computational capabilities are integrated with acquisitive systems, it becomes possible to achieve a far larger lexicon.

For when applied to stored forms, the structural analysis produces systemic rules.

These rules, in turn, impose organization on incoming utterances, thus expediting the learning of new words (Anglin, 1993; Chafetz, 1994; Maratsos, 1982; Maratsos & Chalkley, 1980).

By articulating speech into commutable elements, the structural analysis takes the pressure off a holistic type of memory, thereby enabling the creation of larger and larger vocabularies, in which each of the individual entries is merely a unique recombination of a small set of phonemes.

While lexical capacity is expanding, syntactic processing is also becoming more automatic (Friederici, 1993).

1.3 How Neurolinguistics works

Neurolinguistics research is carried out in all the major areas of linguistics; the main linguistic subfields, and how neurolinguistics addresses them, are given in the table below.

Table 8

Subfield	Description	Research questions in neurolinguistics
Phonetics	The study of speech sounds	How the brain extracts speech sounds from an acoustic signal, how the brain separates speech sounds from background noise
Phonology	The study of how sounds are organized in a language	How the phonological system of a particular language is represented in the brain
Morphology and lexicology	The study of how words are structured and stored in the	How the brain stores and accesses words that a person knows

	mental lexicon	
Syntax	The study of how multiple-word utterances are constructed	How the brain combines words into constituents and sentences; how structural and semantic information is used in understanding sentences
Semantics	The study of how meaning is encoded in language	

According to Perfetti and Stafura (2014) as a reader encounters a word, input from the visual orthographic system drives operations in the temporal lobes to retrieve associated linguistic and general knowledge from long-term memory. Unification computations in the left inferior frontal gyrus integrate the word-level syntactic and semantic knowledge into the ongoing context (e.g., into a sentence). Finally, limitations in cognitive resources are managed through the application of control operations in the dorsolateral prefrontal cortex and anterior cingulate.

2. Information Processing Theory

Information processing theory is based on the idea that humans process the information they receive, rather than merely responding to stimuli. Information is taken in through the senses, the information is then put through the short-term memory. The information is then encoded to the long-term memory, where the information is then stored. The information can be retrieved when necessary (Psychology, 2010).

Developed by American psychologists including George Miller in the 1950s, Information Processing Theory (IPT) has in recent years compared the human brain to a computer. The 'input' is the information we give to the computer - or to brains - while the CPU is likened to our short-term memory, and the hard-drive is long-term memory.

Information processing theory explains the process of brain movement when humans obtain information. The combination of neurolinguistics and information processing theory can perfectly explain the mechanism of the human brain when

reading. At the same time can guide humans to the learning of reading in foreign language. The mind's machinery includes attention mechanisms for bringing information in, working memory for actively manipulating information, and long-term memory for passively holding information so that it can be used in the future (Peter, 2010).

Learning is a change in one's state of knowledge, which is stored in memory, including processes of selecting information in short-term memory (Recognition, Perception, and Attention), translating information (Encoding), elaborating information in long term memory (Elaborative Operation Processes), and recalling or decoding that information (Retrieval). All of these processes are controlled by centralized information processing (Metacognition) (Klausmeier, 1985; Osman & Hanafin, 1992; Woolfolk, 2004).

2.1 Definition

The Information Processing Theory places emphasis on how information entering through the senses is encoded, stored, retrieved and utilized by the brain.

Thus, learning becomes the process of committing our symbolic representations to memory where they may be processed and the study of learning is primarily approached through the study of memory.

In Information Processing memory is viewed from a computer model perspective by which the mind takes in information, performs operations on it to change its form and content, stores the information, retrieves it when needed, and generates responses to it.

Three stages

It is hypothesized that processing involves three stages: Encoding (collecting and representing information); Storage (holding information); Retrieval (obtaining the information when needed); and a Control Process that determines how and when information will flow through the system.

The information is processed and stored in 3 stages: encoding, storage, retrieval. The sensory register picks up all the sensations or stimuli (smells, sounds, etc.) reaching our receptors (body mechanisms to perform activities such as smelling,

tasting, etc.) from our environment. The capacity of sensory memory is quite large, however sensory information only lasts for milliseconds in the sensory register.

The **short-term memory** is seen as a temporary store (one to three seconds) for a limited amount of information. If information is not attended to and encoded so as to pass into long-term memory it decays. It is suggested that short-term memory can handle about seven objects at once, but that this can be improved by a process called chunking, which consists of grouping items into chunks numbering about seven. Information can be retained in two distinct ways: constant repetition of information in the mind, so as to keep it in short-term memory indefinitely, or association of the information you are trying to remember with pre-existing knowledge.

Long-term memory holds information which, unlike in previous stores, does not decay but seems to be permanent. There are three categories of long-term memory:

Semantic Memory for verbal information or meaning. These memories are stored as propositions, images, and schemata.

Episodic Memory for events and for information related to a particular place and time

Procedural Memory for how to do things. It takes longer to learn a procedure, but once learned, this knowledge tends to be remembered for a long time.

The prospect of information reaching the long-term memory depends on the length of the information, the content, the opportunity for initial learning and the activity taking place between successive units of information. Long messages are less likely to be remembered than short ones. The level of familiarity and the language used are significant for long-term storage.

Robert Gagne

The work of Robert Gagne has been particularly influential in the design of instructional material.

Gagne identifies five major categories of learning:

Verbal information: reciting something from memory

Intellectual Skills

Cognitive strategies: inventing or selecting a particular mental process to solve a problem or accomplish a task

Attitudes: choosing to behave in a way that reflects a newly-acquired values or beliefs

Motor skills: performing a physical task to some specified standard

Students apply a wide range of strategies to comprehend, interpret, evaluate, and appreciate texts. They draw on their prior experience, their interactions with other readers and writers, their knowledge of word meaning and of other texts, their word identification strategies, and their understanding of textual features (e.g., sound–letter correspondence, sentence structure, context, graphics) (International Reading Association & National Council of Teachers of English, 1996).

Chunking

The information processing theory using "chunking" to put the information into short term memory. Miller said it was known that the human brain can only chunk into the brain with seven parts, plus or minus two. Seven in the big number to remember.

Atkinson and Shiffrin (1968)

Cognitive Information Processing Theory are Atkinson and Shiffrin. In 1968 these two proposed a multi-stage theory of memory. They explained that from the time information is received by the processing system, it goes through different stages to be fully stored. They broke this down to sensory memory, short term memory, and long-term memory (Atkinson).

2.2 Component / Type / Kind

1)Working memory

The term "working memory" was coined by Miller, Galanter, and Pribram (Miller, Galanter & Pribram, 1960; Baddeley, 2003).

Working memory is a cognitive system with a limited capacity that is responsible for temporarily holding information available for processing (Miyake & Shah,1999).

Working memory is important for reasoning and the guidance of decision-making and behavior (Diamond, 2013; Malenka, Nestler, Hyman, Sydor, & Brown, 2009).

Working memory is often used synonymously with short-term memory, but some theorists consider the two forms of memory distinct, assuming that working memory allows for the manipulation of stored information, whereas short-term memory only refers to the short-term storage of information (Diamond, 2013; Cowan, 2008).

Working memory is a theoretical concept central to cognitive psychology, neuropsychology, and neuroscience.

Short-term memory is the ability to remember information over a brief period (in the order of seconds).

Most theorists today use the concept of working memory to replace or include the older concept of short-term memory, marking a stronger emphasis on the notion of manipulating information rather than mere maintenance.

Capacity of the working memory - Chunking

In the early 1970s the term "chunk" was first to use to describe how people might organize information in short-term memory by Simon and Chase (1973). This chunking of memory components has also been described as schema construction. The information-processing capacity of young adults is around seven elements, which Miller called "chunks", regardless of whether the elements are digits, letters, words, or other units (Miller, 1956). Cowan proposed that working memory has a capacity of about four chunks in young adults. The capacity of working memory is better characterized as the ability to mentally form relations between elements, or to grasp relations in given information. This idea has been advanced, among others, by Graeme Halford, who illustrated it by our limited ability to understand statistical interactions between variables (Halford, Baker, McCredden, & Bain, 2005). These authors asked people to compare written statements about the relations between several variables to graphs illustrating the same or a different relation This statement describes a relation between three variables (country, ingredient, and amount of sugar), which is the maximum most individuals can understand. The capacity limit

apparent here is obviously not a memory limit (all relevant information can be seen continuously) but a limit to how many relationships are discerned simultaneously.

Decay theories

This theory assumes that representations in working memory decay unless they are refreshed. Refreshing them requires an attentional mechanism that is also needed for any concurrent processing task. When there are small time intervals in which the processing task does not require attention, this time can be used to refresh memory traces. The theory therefore predicts that the amount of forgetting depends on the temporal density of attentional demands of the processing task—this density is called "cognitive load". The cognitive load depends on two variables, the rate at which the processing task requires individual steps to be carried out, and the duration of each step.

The history of cognitive load theory can be traced to the beginning of Cognitive Science in the 1950s and the work of G.A. Miller. In his classic paper, Miller (1956) was perhaps the first to suggest our working memory capacity has inherent limits. His experimental results suggested that humans are generally able to hold only seven plus or minus two units of information in short-term memory. But early in the learning process, learners may find it difficult to process a large amount of information in a short time.

Sweller, the developer of Cognitive Load Theory (Sweller, 1988) suggests that instructional designers should prevent this unnecessary cognitive load by designing instructional materials which do not involve problem solving.

Cognitive load refers to the used amount of working memory resources. Cognitive load theory differentiates cognitive load into three types: intrinsic, extraneous, and germane. Intrinsic cognitive load is the effort associated with a specific topic, extraneous cognitive load refers to the way information or tasks are presented to a learner, and germane cognitive load refers to the work put into creating a permanent store of knowledge, or a schema. "Extraneous cognitive load" is a term for this unnecessary (artificially induced) cognitive load.

Extraneous cognitive load is generated by the manner in which information is presented to learners and is under the control of instructional designers. This load can

be attributed to the design of the instructional materials. Because there is a single limited cognitive resource using resources to process the extraneous load, the number of resources available to process the intrinsic load and germane load (i.e., learning) is reduced. Thus, especially when intrinsic and/or germane load is high (i.e., when a problem is difficult), materials should be designed so as to reduce the extraneous load. Information may only be stored in long term memory after first being attended to, and processed by, working memory. Working memory, however, is extremely limited in both capacity and duration. These limitations will, under some conditions, impede learning. Heavy cognitive load can have negative effects on task completion, and it is important to note that the experience of cognitive load is not the same in everyone.

With increased distractions, particularly from cell phone use, students are more prone to experiencing high cognitive load which can reduce academic success. Evidence has been found that individuals systematically differ in their processing capacity. For example, there are individual differences in processing capacities between novices and experts. Experts have more knowledge or experience with regard to a specific task which reduces the cognitive load associated with the task. Novices do not have this experience or knowledge and thus have heavier cognitive load.

2)Intermediate-term memory (ITM)

Intermediate-term memory (ITM) is a stage of memory distinct (Grimes, Smith, Li, Darby-King, Harley & McLean, 2011; Sutton & Carew, 2002). Intermediate-term memory is thought to be supported by the par hippocampal cortex (Eichenbaum, Otto & Cohen, 1994). While sensory memory persists for several milliseconds, working memory persists for up to thirty seconds, and long-term memory persists from thirty minutes to the end of an individual's life, intermediate-term memory persists for about two to three hours (Lukowiak, Adatia, Krygier, & Syed, 2000). Intermediate-term facilitation can be produced in the absence of long-term facilitation (Mauelshagen, Sherff, & Carew, 1998).

According to the definition of ITM proposed by Sutton et al. in 2001, it disappears completely before long-term memory is induced (Sutton, Masters, Bagnall, & Carew, 2001).

Unlike short-term memory and working memory, intermediate-term memory requires changes in translation to occur in order to function. While ITM requires only changes in translation, induction of long-term memory requires changes in transcription as well (Braun & Lukowiak, 2011).

2.3 How to use information processing theory

The information processing theory focuses on the idea that humans process the information they receive from the environment, in the manner of a computer, rather than merely responding to stimuli.

The student's brain brings information in, manipulates it, and stores it ready for future use - this is the learning aspect. In information processing theory, as the student takes in information, that information is first briefly stored as sensory storage; then moved to the short term or working memory; and then either forgotten or transferred to the long term memory, as semantic memories (concepts and general information), procedural memories (processes).

The transference of information to the long term memory is important, as information cannot rest in the short term memory (the short term memory can only hold seven pieces of information at a time). An overload in the short term memory can result in cognitive overload. Teachers can help students who are suffering from information overload by letting students know what are the critical elements of the information; in other words, prioritizing the information. Make sure you have the students' attention and help students to make connections between new material and what they already know. Provide for repetition and review of information, present material in a very clear manner, and focus on the meaning of information.

There are basic reading goals that all readers pursue in deriving meaning from texts: (1) finding a text's coherence, (2) recognizing how it is situated, (3) constructing its framework of meanings, and (4) integrating its concepts.

Readers render texts coherent text-worlds with a meaningful framework by integrating their words into larger structures. In other words, readers look for ways to reduce their uncertainty about the meaning of texts by seeking coherence - linking words to each other, finding reading is a process of conceptual blending (framing and

reframing) from cues that lead to a coherent framework with which readers can grasp the meaning of a text.

Within the boundaries of readers' horizons, which are limited by the pertinence of their pre-texts, readers approximate the writers' intentions to the extent that they respond appropriately to the cues and instructures of a text that are made available to them as they read.

Use IPT in classroom

Creating memories by using different stimuli

Sensory memory is the first stage of Information Processing Theory.

It refers to what we are experiencing through our senses at any given moment. This includes what we can see, hear, touch, taste, and smell. Sight and hearing are generally thought to be the two most important ones.

In a learning environment, teachers can engage students by training in a variety of styles that appeal to different senses. For example, explaining the benefits of a new product orally. This engages people's ears and is known as echoic memory; show them an infographic that conveys the information visually, which creates iconic memories; and hand around samples of the product so that students can touch it.

When teachers present information in a variety of different ways, teachers ensure that they're appealing to the strengths of everyone in the class, and increasing the likelihood that they will retain it.

The role of short-term or working memory

Information is filtered from the sensory memory into the short-term or working memory. From there, people process the information further. Some of the information people hold in the short-term memory is discarded or filtered away once again, and a portion of it is encoded or stored in our long-term memory.

A number of factors impact how we process things in our working memory. These include our individual cognitive abilities, the amount of information we're being asked to remember, how focused we're able to be on a given day and how much of our attention we give to the information.

We also have the ability to focus on the information we deem to be most important or relevant. Then we use selective processing to bring our attention to those details in an effort to remember them for the future.

Repetition is a crucial factor here; if teachers want our students to transfer crucial information from their short-term memory into long-term storage, we must repeat it more than once.

Encoding information into long-term memory

Since we filter out information at each stage of processing, trainers should employ certain strategies to ensure your audience understands a topic in-depth. These include:

Breaking up information into smaller parts: There's only so much information we can take on board at once, so when you're training you should move at an appropriate pace, giving your learners plenty of breaks and opportunities to process the information. Make it meaningful: Trainees are more likely to retain information that's meaningful to them by connecting it to real-life scenarios, and to their own personal experiences. Connect the dots: To optimize the chances of material being retained in long-term memory, you should 'layer' the material, by providing sufficient background information and connecting the current lesson to what was previously learned, and to what will be learned next. Repeat, repeat, repeat: One of the simplest ways to encode new facts into long-term memory is to present it more than once. Repeating information in different formats - verbal, written, visual, tactile - is a great way of doing this (you might notice we already made this point in different words above - and we're repeating it here so that you retain it for the future!) The Information Processing Theory outlines a way of learning that can be used by teachers inside of the classroom. Some examples of classroom implications of the Information Processing Theory include:

Use mnemonics to aid students in retaining information for later use, as well as strengthening the students' remembering skills. Example: While teaching the order of operations in mathematics, use the mnemonic "Please excuse my dear Aunt Sally" to symbolize the six steps.

Pair students together to review the material covered. Example: When teaching a more abstract lesson, place students into pairs and have each student teach their partner the material covered to further embed the information into the long-term memory.

Break down lessons into smaller more manageable parts. Example: When teaching an intricate math equation, walk the students through an example step-by-step. After each step, pause for questions to ensure everyone understands.

Assess the extent of the prior knowledge students have about the upcoming material. Example: After each test, have a Pre-Test about the next chapter to get an understanding of how much prior knowledge the students have.

3. Metacognition

Metacognition is a general term encompassing the study of memory-monitoring and self-regulation, meta-reasoning, consciousness (awareness) and autonoetic consciousness (self-awareness). In practice, these capacities are used to regulate one's own cognition, to maximize one's potential to think, learn. It can also lead to a reduction in response time for a given situation as a result of heightened awareness, and potentially reduce the time to complete problems or tasks.

Metacognition also involves thinking about one's own thinking process such as study skills, memory capabilities, and the ability to monitor learning. Metacognitive knowledge is about one's own cognitive processes and the understanding of how to regulate those processes to maximize learning. Metacognition includes knowledge about when and how to use particular strategies for learning or problem-solving (Metcalfe, Shimamura, 1994). Several cross-sectional and longitudinal studies have shown that metacognition, and more specifically the knowledge and use of reading strategies, is related to reading comprehension in both primary school children (Muijselaar et al., 2015; Van Kraayenoord et al., 2012) and children in secondary school (Cromley & Azevedo, 2007; Kozminsky & Kozminsky, 2001; Peverly et al., 2002; Samuelstuen & Bråten, 2005).

Metacognition makes learners understand how reading skills and strategies can be used in reading comprehension. How the obstacles in reading comprehension are broken down into minor problems. And take a targeted approach to solve the minor problems one by one. It develops as children get older, that is, older children have higher levels of metacognitive knowledge about reading and are more skilled in regulating and monitoring their reading comprehension process (Baker, 2002; Mason,

2004; Roeschl-Heils et al., 2003), children with more self-regulated capacities and awareness of their reading strategies are more successful at school and in later life (Pintrich & Zusho, 2002; Schoonen et al., 1998).

Theorists define metacognition in numerous ways, but generally agree it is knowledge about individual's cognition or "knowledge of self, the task at hand, and strategies to be employed" (Wolf et al., 2003). Beginnings of a concept Flavell's research on children's memory development in the late 1960s underscored the importance of metacognition in influencing behavior. Metacognition concerns knowledge about and regulation of cognitive processes in learning activities (Brown, 1978; Flavell, 1979). Metacognitive knowledge can be either correct or incorrect as one may underestimate or overestimate the actual level of competency, relative to the complexity of the task (Veenman et al., 2006).

Janette Hill concluded that high levels of metacognitive knowledge "increased the chances for success," which she attributed to students' abilities "to reflect on cognitive processes and to, in turn use this knowledge to inform actions".

3. 1 **Definition**

Metacognition is "cognition about cognition", "thinking about thinking", "knowing about knowing", becoming "aware of one's awareness" and higher-order thinking skills. The higher-level cognition was given the label metacognition by American developmental psychologist John H. Flavell (1976).

Metamemory was discerned first as metacognitive knowledge (Flavell and Wellman, 1977). Initially, metamemory only referred to the descriptive knowledge of one's memory system and of strategies that affect memory processes. Acquisition of factual knowledge about memory processes was assumed to improve memory performance. Later, the focus of metamemory research shifted from the knowledge product to the process of metamemory (Nelson and Narens, 1990). Wellman (1983) noted that metamemory was a component of metacognition and he believed it was an "ill-defined concept" with "fuzzy" definitions.

Flavell (1981) defined metacognition as knowledge or cognition that "regulates any aspect of any cognitive endeavor". Metacognition can take many

forms; it includes knowledge about when and how to use particular strategies for learning or problem-solving (Shimamura & Metcalfe, 1994). The term metacognition literally means 'above cognition', and is used to indicate cognition about cognition, or more informally, thinking about thinking. Flavell defined metacognition as knowledge about cognition and control of cognition.

Andreas Demetriou's theory used the term hyper cognition to refer to self-monitoring, self-representation, and self-regulation processes, which are regarded as integral components of the human mind (Demetriou, Efklides, Platsidou, & Campbell, 1993). Moreover, with his colleagues, he showed that these processes participate in general intelligence, together with processing efficiency and reasoning, which have traditionally been considered to compose fluid intelligence.

Metacognition also involves thinking about one's own thinking process such as study skills, memory capabilities, and the ability to monitor learning. This concept needs to be explicitly taught along with content instruction. Metacognitive knowledge is about one's own cognitive processes and the understanding of how to regulate those processes to maximize learning.

3. 2 Component / Type / Kind

Metacognitive knowledge concerns one's descriptive knowledge about the interplay between person, task, and strategy characteristics (Flavell, 1979). Person knowledge is knowledge about differences of intra-individual and inter-individual differences, and universal principles of cognition. Task knowledge comprises task scope, task conditions or task factors, and task characteristics. Strategy knowledge includes cognition strategy, a specific strategy, integrated strategy, and usefulness of strategy to a particular task.

There are generally two components of metacognition: knowledge about cognition and regulation of cognition (Brown & Palincsar, 1982; Schraw, 1998). Brown and Palincsar (1982) described the regulation of cognition as executive control processes that centered on planning, monitoring, and checking. Brown (1987) lamented the lack of consensus on what constituted metacognition. She pointed to the term's "central concerns" that included "conscious control over learning; learning

without awareness; transfer of rule learning; relation of age and expertise to various aspects of planning; monitoring and error correcting; general rules for problem solving versus domain specific knowledge; and mechanisms of change".

Wellman identified four common types of metacognition: "factual, long term knowledge about cognitive tasks", "knowledge of one's own current memory states", "regulation of cognitive processes", and "conscious cognitive feelings" regarding the cognitive activity (Wellman, 1983).

Metamemory

Metamemory, defined as knowing about memory and mnemonic strategies, is an especially important form of metacognition (Dunlosky & Bjork, 2008, 2013). Flavell (1971) termed memory development "metamemory" and characterized it as the "intelligent structuring and storage of input, of intelligent search and retrieval operations, and of intelligent monitoring and knowledge of these storage a retrieval operations". Flavell's research with Wellman resulted in further refinement of the metacognition concept including the development of a metamemory taxonomy. This taxonomy recognized the need for "planful memory-related exertions" for some situations (Flavell, 1977).

Metacognitive knowledge and metacognitive experiences

Flavell termed the two types of memory metacognition as metacognitive experiences and metacognitive knowledge respectively. He defined a metacognitive experience as a "conscious experience" that concerned "self, task, goals, and strategies". According to the author, metacognitive experiences were "items of metacognitive knowledge that has entered consciousness". He described metacognitive knowledge as "beliefs about what factors or variables act and interact in what way to affect the course and outcome of cognitive enterprises". Moreover, he attributed metacognitive knowledge to prompting individuals to "select, evaluate, revise, and abandon cognitive tasks".

Self-regulation

According to Brown and Palincsar (1982), metacognition contained two facets: knowing about cognition and regulating cognition. They likened the latter to

executive control processes in information-processing systems that included planning and monitoring activities as well as checking outcomes.

Brown and DeLoache (1977) stated "novices often fail to perform efficiently not only because they may lack certain skills but because they are deficient in terms of self-conscious participation and intelligent self-regulation of their actions".

Comprehension monitoring

Markman (1981) pointed to inferential processing as a component of comprehension modeling. In this instance, individuals paraphrased information, drew implications, and identified examples to gauge their understanding of the material. In addition, she highlighted the metacognitive knowledge involved in the process, noting that the individuals evaluated "material and task demands" and made "judgments about potential explanations" (p. 75). Ultimately, she maintained that comprehension monitoring remained a conscious process that centered on an individual's recognition of his failure to understand.

This remained similar to Brown's (1977) definition of meta-comprehension, which Brown described as "ascertaining the state of one's own ignorance or enlightenment".

Wagoner (1983) noted a hierarchical relationship among metacognition, cognitive monitoring, and comprehension monitoring. She linked the latter term to reading comprehension or "comprehension of connected discourse," but suggested metacognition and cognitive monitoring applied to "knowledge about cognition in general".

3. 3 How to use Metacognition

Armbruster et al. (1983) surmised that "older individuals including high school and even university students often show inadequacies in certain areas of metacognitive knowledge or the use of this knowledge". Although research suggests metacognition develops with age, theorists also recognized that older children and adults had metacognitive deficiencies and promoted instruction to develop these skills.

Tessmer et al. (1990) promoted instructional design that highlighted concepts as conceptual tools to foster students' abilities to make "schema-like connections with

prior knowledge". To this end, they advocated instructional strategies that incorporated analogies, concept mapping and structuring, as well as trans mediation or the "process of translating from one code to another".

1)   Impact of memory research on teaching

The link between metacognition and behavior led to efforts that sought to improve students' learning through metacognitive-based instruction (Blummer & Kenton, 2014).

"Increasing the quantity and quality of children's metacognitive knowledge and monitoring through systematic training may be feasible as well as desirable" (Flavell, 1979)

2)   "Fix-up" and studying strategies

Armbruster et al. (1983) described two types of metacognitive interventions: those that addressed comprehension failures and others that provided studying strategies to enhance learning. They described the former as offering "fix-up" strategies such as questions to enable students to monitor their learning. They listed successful studying strategies identified in the research as outlining, summarizing, self-questioning, and instruction in semantic mapping.

3)   Interactive metacognitive interventions

Reeve and Brown (1984) advocated interactive metacognitive interventions to enhance children's self-regulation abilities. They described successful reciprocal teaching efforts that focused on improving students' metacognitive processes to enhance their text comprehension and reading skills. According to the authors, students assume the role of the teacher "leading a dialogue on a segment of text" (p. 15). The strategies employed in this technique included summarizing, question generating, clarifying, and predicting (Palincsar, 1986). According to Palincsar, work with junior high school students in remedial reading classes using the reciprocal teaching strategies proved successful. In 1985, Sylwester summarized major findings in research on memory. The author observed these findings had implications for education due to the link between memory and learning. He pointed to a "declarative system that contained who/what/where/when/why" information and a procedural system that "processes automatic motor and problem-solving skills" (p. 70). He stated a major implication of research was "to help students develop" connections between

concepts as well as strategies to search memory to "draw inferences from limited information within their memory" (p. 73). According to the author, students need to know "how to tie that information to their past experiences, and how to retrieve and use integrated knowledge" (p. 74).

3. 4 How to evaluate Metacognition

The study of metacognition is heavily dependent on the development of valid measuring instruments and specifically appropriate tasks to measure metacognitive ability.

Interviewing is one of the most popular methods in measuring metacognition, but research has convincingly shown that verbal reports of all types are subject to many constraints and limitations (Miles, Blum, Staats, & Dean, 2003).

Another widely used methodology in metacognition is the **think-aloud protocol analysis**. In this technique a subject is asked to vocalize his or her thinking processes while working on a problem. Pugalee (2004) used verbal and written protocols as a tool to compare high-school students' mathematical problem-solving processes.

Self-report inventories as measures of metacognitive ability are perhaps, in some ways, the least problematic technique (Sperling, Howard, Miller & Murphy, 2002). Schraw and Sperling - Denisson (1994) developed a 52-item Likert scale self-report inventory for adults (MAI), which measured both knowledge of cognition and regulation of cognition. Factor analysis resulted in a two-factor structure, the two factors being the knowledge of cognition and the regulation of cognition. Sperling et al. (2002) took the idea of the MAI inventory one step further; they developed two analogous inventories, the Jr MAI version A and version B scales, appropriate for measuring younger learners' metacognitive ability along those two main factors.

4. Scaffolding

Scaffolding theory was first introduced in the late 1950s by Jerome Bruner, it refers to the help or guidance received from an adult or more competent peer.

Instructional scaffolding is the support given to a student by an instructor throughout the learning process. This support is specifically tailored to each student; this instructional approach allows students to experience student-centered learning, which tends to facilitate more efficient learning than teacher-centered learning (Sawyer, 2005). This learning process promotes a deeper level of learning than many other common teaching strategies.

The metaphor of instructional scaffolding was originally proposed to describe how parents and teachers provided dynamic support to toddlers as they learned to construct pyramids with wooden blocks (Wood, Bruner, & Ross, 1976). Scaffolding thus helped fill in key gaps in students' abilities and knowledge such that they could then complete the task.

The scaffolding provided by peers contributed positively to L2 development (Huong, 2007).

4. 1 **Definition**

Scaffolding is a concept used to describe how learning is mediated by interactions with more expert others (Bruner & Sherwood, 1975; Wood, Bruner, & Ross, 1976). The first key feature that distinguishes scaffolding from other forms of instructional support is that it is temporary support that is provided as students are engaging with problems (Belland, 2014; Collins et al., 1989; Wood et al., 1976). Scaffolding needs to lead to skill gain such that students can function independently in the future (Belland, 2014; Pea, 2004; Wood et al., 1976).

Stone (1998a) identified four key features of scaffolding:

1. The adult takes responsibility for encouraging a child to become involved in a "meaningful and culturally desirable activity beyond the child's current understanding or control" (p. 349).

2. The adult engages in diagnosing the learner's current level of understanding or proficiency and calibrates the appropriate support to be provided.

3. The adult provides a range of types of support.

4. The support is temporary and fades over time.

4. 2 Component / Type / Kind

The students' skill levels and needs vary dramatically, as does the difficulty of individual tasks or strategies. As such, students may require different types (or levels) of scaffolding. Scaffolding can be provided by teachers, computers, or peers (Belland, 2014; Hawkins & Pea, 1987; Pifarre & Cobos, 2010; van de Pol, Volman, & Beishuizen, 2010). Possible distinctions among different types of scaffolding include differences between designed and interactional scaffolding (Smit & van Eerde, 2011); cognitive, metacognitive, and affective scaffolding (Leiss & Weigand, 2005); settings such as whole class (Smit, van Eerde, & Bakker, 2013), a group of students, or a single student; and whether the intervention takes place at the beginning, in the middle, or at the end of a task (Leiss & Weigand, 2005).

1)   Soft and Hard

There are two levels of scaffolding: soft and hard (Brush & Saye, 2002). An example of soft scaffolding in the classroom would be when a teacher circulates the room and converses with the students (Simon & Klein, 2007). The teacher may question students' approach to a difficult reading problem and provide constructive feedback to the students.

In contrast with soft scaffolding (or contingent scaffolding named by Van Lier), hard scaffolding (embedded scaffolding) is planned in advance to help students with a learning task that is known in advance to be difficult (Brush & Saye,2002). The teacher may identify hints or cues to help the student reach an even higher level of thinking.

2)   Reciprocal scaffolding

Reciprocal scaffolding, a method first coined by Holton and Thomas, is a method that involves a group of two or more collaboratively working together.

In this situation, the group can learn from each other's experiences and knowledge. It also can describe their understanding of the reading process and compare ways to break down obstacles in reading and share targeted solutions for minor problems.

3)   Technical scaffolding

Technical scaffolding is a newer approach in which computers replace the teachers as the experts or guides, and students can be guided with web links, online tutorials, or help pages (Yelland & Masters, 2007). The recent spread of technology used in education has opened up the learning environment to include hypermedia, hypertext, collaborative learning environments, and web-based learning environments. These challenges traditional learning design conceptions of scaffolding for educators (Pea, 2004; Reiser, 2004).

4)   Online studying

There are four types of scaffolding are structures that appropriately support students' learning in online environments (Hannafin, Land, & Oliver, 1999).

Conceptual scaffolding: helps students decide what to consider in learning and guide them to key concepts;

Procedural scaffolding: helps students use appropriate tools and resources effectively;

Strategic scaffolding: helps students find alternative strategies and methods to solve complex problems;

Metacognitive scaffolding: prompts students to think about what they are learning throughout the process and assists students in reflecting on what they have learned (self-assessment). This is thought to not only promote higher-order thinking but also students' ability to plan ahead.

5)   Micro, meso, or macro

We can also be specific regarding the different levels (micro, meso, or macro) or settings (individual, small group, whole class) for scaffolding.

Another important distinction for types of scaffolding (or pedagogical scaffolding as van Lier calls it) is that support can be provided at different levels or times scales (van Lier, 2004):

(a) Macro: the design of long-term sequences of work or projects, with recurring tasks-with-variations over a protracted-time period;

(b) Meso: the design of individual tasks as consisting of a series of steps or activities that occur sequentially or in collaborative construction;

(c) Micro: contingent interactional processes of appropriation, stimulation, give-and-take in conversation, collaborative dialogue (Swain, 2000), and so on.

Applying the concept loosely to activity at different levels (micro, meso, and macro), in different settings (individual or collective), or for different pedagogical purposes (to support procedural fluency, conceptual understanding, or participation in classroom discussions), makes it difficult to review research or make recommendations for practice.

For example, scaffolding at the meso or macro levels may not include all the central characteristics of micro scaffolding and scaffolding in a whole class setting is likely to function differently than with a single student.

6)   The Innovative Resources for Instructional Success Center

The Innovative Resources for Instructional Success (IRIS) Center which supported by the U.S. Department of Education's Office of Special Education Programs (OSEP) discussed three approaches for instructional scaffolding, content scaffolding, task scaffolding and material scaffolding (Content, 2018).

A) Content scaffolding

One type of instructional scaffolding is referred to as content scaffolding. For this type of scaffolding, the teacher selects content that is not too difficult or unfamiliar for students learning a new skill. Doing so allows students to focus on the skill being taught and not get bogged down in the content.

Three content scaffolding techniques are described below.

Use Familiar or Highly Interesting Content

Teachers often find that it is much easier to teach a new strategy to students when they begin with content that is familiar or highly interesting. Students taught a new strategy in this way tend to be more motivated to learn. Over time, the teacher will introduce content that is less and less familiar and will ask the students to apply the newly learned strategy to the content.

Use Easy Content

This technique involves using content that is easy for the students in order to teach a new task or strategy at hand. This allows the students to better focus on the strategy.

For example, say another teacher wishes to explain a reading-comprehension strategy to one of his students. He will initially use a text that is one or two grade

levels below the student's current reading level. This allows the student to use all of her energy to master the comprehension strategy. Then, after the student has developed confidence in the strategy, the teacher will gradually increase the difficulty of the passages.

Start with the Easy Steps

One simple way to scaffold instruction is for the teacher to perform and model the more difficult steps of a task while letting students do the easier steps. Gradually, the students should take responsibility for completing the more difficult steps. During the learning process, the teacher continues to model and help the students with any problems they might have.

For example, imagine that a first-grade reading specialist is teaching phonics to a student. She asks the student to read simple stories aloud. When he comes to a word with which he is having difficulty, the reading specialist will model sounding out the word.

Next, she asks the student to read the sentence, including the difficult word, once again. As he masters the phonics strategy, the student will be expected to take more and more responsibility for sounding out new or unfamiliar words.

B) Task Scaffolding

Another type of instructional scaffolding is referred to as task scaffolding. In this type of scaffolding, a teacher begins by specifying the steps in a task or instructional strategy. He or she then models the steps in the task, verbalizing his or her thought processes for the students. In other words, the teacher thinks aloud and talks through each of the steps he or she is completing. Once students are able to understand the steps in the task or instructional strategy, they practice the task independently. The teacher observes their performance and may coach students who experience problems. Even though students have watched their teacher demonstrate a task, they may not yet actually understand how to perform it independently. For this reason, it is critical for teachers to scaffold by continuing to model the steps or procedures until correct independent performance is achieved.

Task scaffolding is quite straightforward: The teacher simply gives the students more and more responsibility for steps in a strategy or task.

C) Material Scaffolding

Material scaffolding involves the use of written prompts or cues to help the students perform a task or use a strategy. This may take the form of cue sheets or guided examples that list the steps necessary to perform a task. Students can use these as a reference, to reduce confusion and frustration. Ideally, the prompts and cues should be phased out over time as students master the steps of the task or strategy.

4. 3 How to use scaffolding

Instructional scaffolding provides sufficient support to promote learning when concepts and skills are being first introduced to students. These supports may include resource, compelling tasks, templates and guides, and/or guidance on the development of cognitive and social skills. Instructional scaffolding could be employed through modeling a task, giving advice, and/or providing coaching.

These supports are gradually removed as students develop autonomous learning strategies, thus promoting their own cognitive, affective and psychomotor learning skills and knowledge. Teachers help the students master a task or a concept by providing support. The support can take many forms such as outlines, recommended documents, storyboards, or key questions.

During the reading process, learners need help and guidance from teachers in order to understand how the brain works during reading. Instructional scaffolding is the support given to a student by an instructor throughout the reading process. Teachers guide learners to acquire reading strategies and skills. And guide reading comprehension based on how the brain processes the reading process. According to Vygotsky, students develop higher-level thinking skills when scaffolding occurs with an adult expert or with a peer of higher capabilities (Stone, 1998). Thus the learner obtains or raises new understandings by building on their prior knowledge through the support delivered by more capable individuals (Raymond, 2000).

IRIS Center

According to the IRIS (Innovative Resources for Instructional Success) Center, although a teacher may scaffold instruction in a number of ways, it is nevertheless important to note that there are two critical elements to keep in mind when using instructional scaffolding:

a) Modeling: Throughout the learning process, students should be able to watch their teacher model, or demonstrate, each step in the task or strategy multiple times. Such modeling and repetition allow students to understand both how to perform each step and why each step is important. Knowing how and why leads to students' successful performance of the task or strategy.

b) Practice: Students, either individually or as a group, must have the opportunity to work collaboratively with the teacher to practice the task or the strategy.

5. Summary

The theories and principles to make the instructional model are Neurolinguistics, Information processing theory, Metacognition and Scaffolding.

To enhance reading comprehension skills and attitude toward reading researchers use many theories or principles. Such as metacognition (Brown, 1978; Flavell, 1979), cooperative learning (Klingner & Vaughn, 2000),

The form listed the related researches by using the theories mentioned above to enhance reading comprehension skills and attitude toward reading

Table 9

Researcher	Theory or principle	Reading skill	Sample
Brown, 1978; Flavell, 1979	Metacognition	Reading strategies	Primary school, Secondary school
Klingner and Vaughn (2000)	Cooperative learning	Reading strategies	Fifth-grade English class

Table 10

NO	Subject	Problems	Method	Result	Factor
1	Longitudinal relations between verbal	The longitudinal relations	ECLS-K:2011 (Early Childhood Longitudinal	VWM and reading had a strong	Verbal working memory

	working memory and reading in students from diverse linguistic backgrounds Zhang & Joshi (2020).	between reading and VWM	Study, Kindergarten Class of 2010–2011)	association	
2	Prefrontal working memory activity predicts episodic memory performance: A neuroimaging study Melrose et al., 2020	If WM was involved in learning and free recall WM	Neuropsychological testing, including the Brief Visuospatial Memory Test-Revised (BVMT-R),	PFC(prefrontal cortex) processing that supports WM (including stimuli maintenance, retrieval, and selection) are also involved in LTM learning and recall	Working memory
3	Fluency: A key link between word identification and comprehension Bashir, A. S., & Hook, P. E.	Comprehension and word recognition are insufficient for understanding the development of the reading	literature	Fluency is a key link	Fluency

	(2009).	process.			
4	Reading Comprehension in Children With and Without ASD: The Role of Word Reading, Oral Language, and Working Memory (Davidson, Kaushanskaya, Weismer, & disorders, 2018)	Predictor of reading comprehension in ASD	Standardized Measures, Experimental Working Memory Measures	Significant predictors. Oral vocabulary is the strongest predictor	Word Reading, Oral Language, Working Memory
5	Brain basis of cognitive resilience: Prefrontal cortex predicts better reading comprehension in relation to decoding Patael et al., 2018	reading discrepancy (reading comprehension and decoding skills)	Neuropsychological measures MRI data acquisition and image processing. Statistical analyses	The left dorsolateral prefrontal cortex (DLPFC), as related to having discrepantly higher reading comprehension relative to decoding ability.	Decoding

2.3 Japanese language

Japanese is an East Asian language spoken by 3.6 million people worldwide studied Japanese (Japan Foundation, 2015). The largest area of growth can be found in the Asean counties (Association of Southeast Asian Nations) such as China and Korea.

1. Definition

Japanese is an agglutinative language with simple phonotactics, a pure vowel system, phonemic vowel and consonant length, and a lexically significant pitch-accent. Word order is normally subject - object - verb with particles marking the grammatical function of words, and sentence structure is topic - comment. Sentence-final particles are used to add emotional or emphatic impact or make questions. Nouns have no grammatical number or gender, and there are no articles. Verbs are conjugated, primarily for tense and voice, but not person. Japanese equivalents of adjectives are also conjugated. Japanese has a complex system of honorifics with verb forms and vocabulary to indicate the relative status of the speaker, the listener, and persons mentioned.

Japanese has no genetic relationship with Chinese (Deal, William,2005) but it makes extensive use of Chinese characters, or kanji (漢字), in its writing system, and a large portion of its vocabulary is borrowed from Chinese. Along with kanji, the Japanese writing system primarily uses two syllabic (or moraic) scripts, hiragana (ひらがな or 平仮名) and katakana (カタカナ or 片仮名). Hiragana are used for writing grammatical morphemes attached to Chinese characters (kanji) that are used for content words, and katakana are used for foreign words (Aronoff & Rees-Miller, 2003). Latin script is used in a limited fashion, such as for imported acronyms, and the numeral system uses mostly Arabic numerals alongside traditional Chinese numerals.

2. Component

The following are the phonology, grammar, vocabulary, and writing system in Japanese language.

2.1 Phonology

In addition to the sound made by the pronunciation of n, Japanese is based on five major sounds, represented by the English vowel sounds, a, i, u, e, o. Every other sound made in Japanese is basically a derivative of these five major sounds (Grainger, 2005). All Japanese vowels are pure - that is, there are no diphthongs, only monophthongs. And vowel length is phonemic, with each having both a short and a long version. The phonology of Japanese features about 15 consonant phonemes.

The phonology of Japanese also includes a pitch accent system, an accented mora is pronounced with a relatively high tone and is followed by a drop in pitch. Standard Japanese is a pitch-accent language, wherein the position or absence of a pitch drop may determine the meaning of a word. The stresses differentiate the words.

According to Grainger (2005), in practice, the same sound has to be used many different times for different items; this limited sound system also creates many words of the same pronunciation but with different meanings; this is not confusing in a written sense as the word have different kanji representing different concepts.

2.2 Grammar

The following are some distinctive aspects of modern Japanese sentence structure, word classification and inflection, and politeness.

Sentence structure

Structural properties and functional categories are different between Japanese and European languages (Grainger, 2005). The basic sentence structure of Japanese is topic-comment. Thus, Japanese is often called a topic-prominent language, which means it has a strong tendency to indicate the topic separately from the subject, and that the two do not always coincide. In discourse pragmatics, the term 'topic' refers to what a section of discourse is about. At the beginning of a section of discourse, the

topic is usually unknown, in which case it is usually necessary to explicitly mention it. As the discourse carries on, the topic need not be the grammatical subject of each new sentence. Two languages in which the notion of topic plays an important role are Mandarin Chinese and Japanese; in Mandarin, topic NPs may be given special syntactic treatment, and in Japanese they are marked by a special particle, wa (Aronoff & Rees-Miller, 2003). The subject or object of a sentence need not be stated if it is obvious from context. Japanese speakers tend to omit pronouns on the theory they are inferred from the previous sentence and are therefore understood. Grammatical cases are marked by particles placed after the nouns (Takahashi, Tarou; et al., 2010).

Japanese is a synthetic language with a regular agglutinative subject-object-verb (SOV) morphology, with both productive and fixed elements. Unlike many Indo-European languages, the only strict rule of Japanese word order is that the verbs are rigidly constrained to the ends of clauses in what is known as the predicate position. This is because Japanese sentence elements are marked with particles (short words which do not change form) that identify their grammatical functions. Particles in Japanese are postpositional, as they immediately follow the modified component. The subject and objects of the verb are indicated by means of particles, and the grammatical functions of the verb - primarily tense and voice - are indicated by means of conjugation. Thus, the phrase structures of languages are not same; for example, verbs and prepositions come before their object noun phrases in English, but they come after their objects in Japanese and many other languages (Aronoff & Rees-Miller, 2003). The transformational processes of a language are not the same. For example, English has a rule that moves question words to the front of the clause, but languages like Chinese, and Japanese do not (Aronoff & Rees-Miller, 2003). In Japanese, lexical heads consistently come at the ends of phrases, but other languages (such as Irish) in which lexical heads come at the beginnings of phrases (Aronoff & Rees-Miller, 2003).

Word classification and inflection

The native Japanese tradition uses the terminology 'independent words' (jiritsugo 自立語), for words having lexical meaning, and 'ancillary words' (fuzokugo

付属語), for words having a grammatical function. The independent words have katsuyōgo (活用語), word classes which have inflections and hikatsuyogo (非活用語), word classes which do not have inflections. Katsuyōgo have the following categories, verbs, i-type adjectives (形容詞), na-type adjectives (形容動詞); hikatsuyogo have nouns, pronouns, adverbs, conjunctions, interjections, and prenominals (連体詞). Ancillary words also divide into a conjugable class consisting of auxiliary verbs (助動詞 jodōshi), and a non-conjugable class, containing grammatical particles (助詞 joshi) and counter words (助数詞 josushi).

Verbs are conjugated to show tenses, of which there are two: past and present (or non-past) which is used for the present and the future. Conjugable words have stem forms. Conjugative suffixes and auxiliary verbs are attached to the stem forms of the affixes. Negatives are formed by inflecting the verb.

Politeness

Japanese has an extensive grammatical system to express politeness and formality. This reflects the hierarchical nature of Japanese society (Miyagawa, Shigeru, 2011). The Japanese language can express differing levels in social status. The differences in social position are determined by a variety of factors including job, age, experience, or even psychological state (eg, asking favor tends to do so politely). Whereas teineigo (丁寧語) (polite language) is commonly an inflectional system, sonkeigo (尊敬語) (respectful language) and kenjōgo (謙譲語) (humble language) often employ many special honorific and humble alternate verbs.

2.3 Vocabulary

There are three main sources of words in the Japanese language, the Sino-Japanese vocabulary (kango), native Japanese vocabulary (wago 和語, or yamato kotoba 大和言葉) and Western loans (gairaigo 外来語) (Ito & Mester, 2015; Koichi, 2016). Kango is Sino-Japanese vocabulary, referring to the portion of the Japanese vocabulary that originated in Chinese or has been created from elements borrowed from Chinese. Wago is native Japanese vocabulary, meaning those words in Japanese

that have been inherited from Old Japanese, rather than being borrowed at some stage. Gairaigo is Japanese for "loan word" or "borrowed word" and indicates a transliteration (or "transvocalization") into Japanese.

(1) Native Japanese vocabulary (wago)

The original language of Japan, or at least the original language of a certain population that was ancestral to a significant portion of the historical and present Japanese nation, was the so-called yamato kotoba (大和言葉 Yamato words), which in scholarly contexts is sometimes referred to as wago (和語 Wa language).

(2) Sino-Japanese vocabulary (kango)

Sino-Japanese vocabulary is referred to in Japanese as kango (漢語), meaning 'Chinese words', historically the result of intensive borrowings from Chinese at different periods (Ito & Mester, 2015). For the written language, this means that it is not unusual for a given Chinese character (kanji 漢字) to have, besides a native-Japanese reading (訓読み), several different but similar Sino-Japanese readings (音読み) (Ito & Mester, 2015). It is estimated that approximately 60% of the words contained in a modern Japanese dictionary are Sino-Japanese vocabulary (Ito & Mester, 2015; Shibatani, 1990), but they comprise only about 20% of words used in speech (Ito & Mester, 2015).

In the Meiji era, the Japanese also coined many neologisms using Chinese roots and morphology to translate European concepts. These are known as wasei kango (Japanese-made Chinese words). Many of these were then imported into Chinese via kanji in the late 19th and early 20th centuries. Some words derived from Chinese roots that were first created and used by the Japanese, and only later borrowed into Chinese and other East Asian languages. As a result, Japanese and Chinese share a large common corpus of vocabulary.

(3) Loanwords (gairaigo 外来語)

Loanword usually refers to a Japanese word of foreign origin that was borrowed in modern times, primarily from English or other European languages.

Today, 80% to 90% of gairaigo are of English origin. These are primarily written in the katakana phonetic script, with a few older terms written in Chinese characters (kanji).

Japanese has a large number of loan words from Chinese, accounting for a sizeable fraction of the language. These words were borrowed during ancient times and are written in kanji. Modern Chinese loanwords are generally considered gairaigo, pronunciation of modern Chinese loanwords generally differs from the corresponding usual pronunciation of the characters in Japanese.

In the past few decades, wasei-eigo (made-in-Japan English) has become a prominent phenomenon. Although the words coined by compounding English roots, are nonsensical in most non-Japanese contexts.

According to the Shinsen Kokugo Jiten (新選国語辞典) Japanese dictionary (2001), kango comprise 49.1% of the total vocabulary, wago make up 33.8%, other foreign words or gairaigo (外来語) account for 8.8%, and the remaining 8.3% constitute hybridized words or konshugo (混種語) that draw elements from more than one language.

2.4 Writing system

In the case of Japanese, one of the major structural differences is the writing system, which for the main part, utilizes ideographs representing concepts, and not sounds, as is found in alphabet-based languages like English (Grainger, 2005). Modern Japanese is written in a mixture of three main systems: kanji -characters of Chinese origin used to represent both Chinese loanwords into Japanese and a number of native Japanese morphemes - and syllabic kana. Hiragana is one component of the Japanese writing system, along with katakana, kanji, and in some cases romaji (Latin script). It is a phonetic lettering system.

(1) Kanji

Kanji (漢字) are used to write most content words of native Japanese or (historically) Chinese origin. Some Japanese words are written with different kanji depending on the specific usage of the word—for instance, the word naosu (to fix, or

to cure) is written 治す when it refers to curing a person, and 直す when it refers to fixing an object.

Several thousand kanji characters are in regular use, which mostly originate from traditional Chinese characters (表意文字). Japanese primary and secondary school students are required to learn 2,136 jōyō kanji (Japanese Kanji List, 2019). Each has an intrinsic meaning (or range of meanings), and most have more than one possible pronunciation (or "reading"), and some common kanji have many, the choice of which depends on context.

Others made in Japan are referred to as "Japanese Kanji" (和製漢字; also known as "country's kanji" 国字).

(2) Syllabic kana

Kana itself consists of a pair of syllabaries: hiragana and katakana. Hiragana are used for words without kanji representation, for words no longer written in kanji, and also following kanji to show conjugational endings. The word hiragana literally means "ordinary" or "simple" kana ("simple" originally as contrasted with kanji). Katakana, used primarily for foreign words and names, loanwords, onomatopoeia, scientific names, and sometimes for emphasis. In modern Japanese, the hiragana and katakana syllabaries each contain 46 basic characters, or 71 including diacritics. With one or two minor exceptions, each different sound in the Japanese language (that is, each different syllable, strictly each mora) corresponds to one character in each syllabary.

Unlike kanji, these characters intrinsically represent sounds only; they convey meaning only as part of words. Hiragana and katakana characters also originally derive from Chinese characters (i.e. the forms of the hiragana originate from the cursive script style of Chinese calligraphy).

(3) Romaji

The romanization of Japanese is the use of Latin script to write the Japanese language (Walter, 1952). The romaji is used to a certain extent, such as for imported acronyms and to transcribe Japanese names. And in any context where Japanese text

is targeted at non-Japanese speakers who cannot read kanji or kana. Romaji is the most common way to input Japanese into word processors and computers.

(4) Orthography

Japanese orthography is complex, and the same words are sometimes written in three types of scripts (Suzuki, 2015). For example, tamago (egg) can be written in three different ways, for instance 卵 (kanji), たまご (hiragana), タマゴ (katakana).

One sentence can use all three Japanese scripts (kanji, hiragana, katakana), as well as the Latin alphabet and Arabic numerals. Almost all written Japanese sentences contain a mixture of kanji and kana. Because of this mixture of scripts, in addition to a large inventory of kanji characters, the Japanese writing system is often considered to be one of the most complicated in use anywhere in the world.

3. How to manage Japanese language

Curteis comments on the enormous difference between Japanese and English, and notes some features of Japanese which are not present in English (Curteis, 1993). For example, there is no countable/uncountable distinction; no system of articles; and (with a few qualifications) no plural forms of nouns (Curteis, 1993: 6). Curteis concludes that these differences work as 'a great deal of interference' for learners (Curteis, 1993: 9). To manage Japanese language the learners should manage vocabulary and grammar and the strategies to learn Japanese.

A single kanji could be pronounced in five different ways depending upon what is being described and depending upon what kanji it appears in combination with in order to create a word (kanji can appear in isolation or in infinite combinations) (Grainger, 2005). This complicates the reading process even further. Due to the problem of reading kanji, many beginning language learners of Japanese do not have the proficiency to access authentic reading texts like novels and newspapers (Grainger, 2005).

White (1995) used a verbal report procedure known as the yoked subject technique and discovered the target language did not appear to influence the frequency of use but rather the choice of strategies. In particular, cognitive strategies

were different. Learners of Japanese preferred repetition, writing out, translation with limited use of resourcing and no elaboration or inference. A major difference was in the use of writing out strategies (12 instances for Japanese). Writing out is mechanical - repeated copying and primarily used for learning kanji - a structural feature of the orthographic nature of the Japanese language. The high use of repetition by learners of Japanese also reflects the rote aspect of learning kanji.

Okada et al. (1995) studied 36 learners of Japanese and 36 learners of Spanish and discovered that there were differences in strategy use according to language. For example, the Japanese learners could not use rhyming for memorization, code switching and learning through comparison with native language because the native language is so different from the target language (Japanese). They surmised that gestures might be less useful for learners of Japanese because of cultural issues associated with gesturing. This group of Japanese learners had a high metacognitive use.

3.1　　To manage grammar and vocabulary

Following phrases to analyze the sentence structure. Text (文章 bunsho) is composed of sentences (文 bun), which are in turn composed of phrases (文節 bunsetsu), which are its smallest coherent components. The reader identifies word divisions by semantic cues and knowledge of phrase structure. Phrases have a single meaning-bearing word, followed by a string of suffixes, auxiliary verbs, and particles to modify its meaning, and designate its grammatical role.

Following the paradigms to analyze inflected words. Standard Japanese language dictionaries usually provide appendix charts of verbal and adjectival derivational and inflectional paradigms (listing the root, present, formal present, negative, inchoative, gerundive, past, etc.).

Kango includes a number of words that were either borrowed from Chinese or constructed from Chinese roots following Chinese patterns. The use of rhyme as a method for recalling vocabulary is of limited value for learners of Japanese due to structural differences (Grainger, 2005). The association of Japanese sounds with known words in order to recall vocabulary is difficult (Grainger, 2005) for Chinese

learners because of the influence of sounds of the same Chinese characters. The high use of repetition by learners of Japanese also reflects the rote aspect of learning kanji (Grainger, 2005). Writing out is mechanical - repeated copying and primarily used for learning kanji - a structural feature of the orthographic nature of the Japanese language (Grainger, 2005).

Following the meaning of the root to inference the meaning of the words. Wasei kango (Japanese-made Chinese words) need to use other clues to manage. The origination of kana has been simplified and modified to such an extent that their origins are no longer visually obvious. To manage the origination of kana also can help to inference the meaning of the words.

Japanese is well known for its propensity to borrow words from foreign languages not only English (Grainger, 2005). This creates no problems for English native speakers when the word is a direct derivative. However, the Japanese also create their own derivatives, which are often shortened versions of two English words (Grainger, 2005) Wasei-eigo (English made in Japan) presents more difficulties for Japanese and learners of Japanese as such words, once entered the lexicon, combine to form any number of potentially confusing combinations. Students should use special clues to manage the gairaigo which cause confusion. There are numerous causes for confusion in gairaigo: (1) gairaigo are often abbreviated, (2) their meaning may change (either in Japanese or in the original language after the borrowing has occurred), (3) many words are not borrowed but rather coined in Japanese (wasei-eigo), and (4) not all gairaigo come from English.

3. 2   Learning Strategies

Second language acquisition research has identified a number of factors that are now commonly accepted as impacting on proficiency. One of these factors is language learning strategies. A language learning strategy is a conscious technique used by a learner to purposely assist the language learning process (Grainger, 2005). The techniques available can be further divided into subgroups known as factors or groupings, indicating specific types of strategies such as cognitive, metacognitive, social, affective or compensatory.

Oxford (2001) notes that language learning styles and strategies are among the main factors that help determine how, and how well, our students learn a second language. In a later study Oxford (1996, p.249) noted, "Different target languages and different native languages might have major influences on language learning strategy selection."

Strategies in language learning, or the steps that one take to learn a language, is very important in ultimate language performance. It is defined as "specific actions, behaviors, steps, or techniques - such as seeking out conversation partners or giving oneself encouragement to tackle a difficult language task - used by students to enhance their own learning" (Scarcella & Oxford, 1992, p. 63). There are six strategies that learners use when learning a language. The strategies include: memory, cognitive, comprehension, metacognitive, affective and social.

1) Memory strategy

People who adopt the memory strategy depend on their memorizing ability. They find ways to remember better to aid in entering information into long-term memory, by creating a word-meaning map in their brain (mental linkages), and then being able to retrieve that information. Adopting this strategy will allow the learning and retrieval via sounds (e.g., rhyming), images (e.g., a mental picture of the word itself or the meaning of the word), a combination of sounds and images (e.g., the keyword method), body movement (e.g., total physical response), mechanical means (e.g., flashcards), or location (e.g., on a page or blackboard).

Okada et al. (1995) studied 36 learners of Japanese and 36 learners of Spanish and discovered that there were differences in strategy use according to language. For example, Japanese learners could not use rhyming for memorization, code-switching and learning through comparison with native language because the native language is so different from the target language (Japanese). This group of Japanese learners had high metacognitive use.

2) Cognitive strategy

Students who adopt cognitive strategy tend to analyze and reason. They form internal mental codes and revise them to receive and produce the message in the target

language. Adopting this strategy will enable students to internalize the language in direct ways such as through reasoning, analysis, note-taking, summarizing, synthesizing, outlining, practicing in naturalistic settings, and practicing structures and sounds formal.

White (1995) used a verbal report procedure known as the yoked subject technique and discovered the target language did not appear to influence the frequency of use but rather the choice of strategies. In particular, cognitive strategies were different. Learners of Japanese preferred repetition, writing out, translation with limited use of resourcing and no elaboration or inference. A major difference was in the use of writing out strategies (12 instances for Japanese).

3) Comprehension strategy

People who adopt the comprehension strategy find themselves guessing unknown words when listening and reading. They also try to replace words they do not know with longer phrases or other words that they know when speaking and writing to overcome gaps in knowledge.

4) Metacognitive strategy

Students who adopt the metacognitive strategy plan, arrange, focus, evaluate on their own learning process. They identify and monitor their own learning style preferences and needs, such as gathering and organizing Japanese materials, arranging a study space and a schedule for Japanese revision and learning, monitoring mistakes made in Japanese, and evaluating task success, and evaluating the success of any type of learning strategy.

5) Affective and social strategy

More frequent use of affective and social strategies among Japanese learners may be partly due to the unfamiliarity with the language that requires emotional control and a positive attitude on the part of the learner (Graingers, 2005). Students who adopt the affective/social strategy control their feelings, motivations, and attitudes when in social situations such as asking questions, communicating with others, facilitate conversation and interaction.

3. 3   Class activities for strategies

The activities that students do in class are according to the learning strategies mentioned above. Of the six most used strategies three related directly to reading and writing (to write new kanji repeatedly, to create associations, to read a story repeatedly) (Douglas, 1992). Of the least used strategies two related to reading and writing (keep a private diary, make up new kanji words) (Douglas, 1992).

For memory strategy, things students do: Do a lot of exercises on grammar. Create a word bank from reading materials or TV shows and memorize the meaning of the words and try to use them.

In second language learning strategies, watch TV, video movies scored highly for a foreign language environment when resources are not always available (Grainger, 2005). Things students do for cognitive strategy: Watch Japanese dramas and try to replicate how the characters pronounce Japanese words. And use certain words in a sentence. Write emails or letters. Read materials such as magazines and newspapers.

For comprehension strategy, things students do: Try to guess the meaning of words that do not know. Try to understand the meaning through looking at the word in context. Guess the meaning of some words by reading the whole passage. Try to look for cues or nonverbal signs when in conversation.

For metacognitive strategy, things students do: Observe how teachers and themselves speak in the language. Practice speaking in front of the mirror. Crosscheck with Google to find out if their pronunciation is correct and correct it. Doing crossword puzzles and play word games. Take note of how other people communicate, especially natives.

For affective and social strategy, things students do: They encourage themselves to speak in Japanese even when they are afraid of making a mistake. They reward themselves for good performance. They remind themselves that it is okay to make mistakes. They tell themselves to be confident and not be afraid to make mistakes. They try to speak in Japanese to others. They ask for clarifications of a confusing point of Japanese, or when communicating. They are people to correct their speech when communicating.

In this form proposed what are some activities that fall under the strategies mentioned above.

Table 11Class activities for strategies

Strategy	Activity
Memory	Get students to create a word bank from their own reading materials, synthesis exercise, cloze exercise, grouping words into categories (e.g. positive adjectives, neutral adjectives, negative adjectives), songwriting, using flashcards, story-telling, spelling tests
Cognitive	Watch videos or movies, discussions (online and offline), reading, summary-writing, synthesis exercises
Comprehension	Reading, comprehension exercise, listening comprehension exercise, dictation
Metacognitive	Explicit teaching, word games, reading, discussions (online or offline), oral presentations
Affective	Story-telling, show and tell, oral presentations, discussions (online and in-class), role-playing, online skyping, peer evaluations
Social	

Note. Retrieved from Second Language Acquisition, https://blogs.ntu.edu.sg/hss-second-language-acquisition/how-tos-and-guides/

4. How to evaluate Japanese language

The ability to use a foreign language can be viewed and assessed from two fundamentally different perspectives: the internal (or intrinsic) perspective, which underlies the individual's own assessment, and the external (or extrinsic) perspective, which underlies an assessment made by somebody else, that is an outside agent (Oscarson, 2014). To evaluate the performance of language learning uses these two perspectives. An internal assessment is made from "within" and reflects a direct

experience of one's own ability (Oscarson, 2014). This kind of assessment referred to as self-assessment. Self-assessment is an important component of good teaching and effective learning (Oscarson, 2014). The growing need for the evaluation of Japanese language proficiency prompted the development of large-scale testing. The Japanese government provides standardized tests to measure Japanese for second language learners. In addition to these major tests, one framework for assessment called JF-Standard (Hatasa & Watanabe, 2017; Watanabe & Koyanagi, 2014).

4.1 The large-scale tests to evaluate Japanese language

The following are the introductions of the four large-scale tests and the reason to use JLPT (Japanese Language Proficiency Test) to evaluate Japanese language.

The four major large-scale tests are the Japanese Language Proficiency Test (JLPT), the Examination for Japanese University Admission for International Students (EJU), the Business Japanese Proficiency Test (BJT), and the Test of Practical Japanese (J.TEST) (Watanabe & Koyanagi, 2014)..

(1) The Japanese Language Proficiency Test (JLPT)

The most prominent is the Japanese Language Proficiency Test (JLPT), which under joint organization of the Japan Foundation (JF) and Japan Educational Exchanges and Services (JEES) started in 1984 as a test to evaluate and certify Japanese-language proficiency of non-native speakers (The Japan Foundation & Japan Educational Exchanges and Services, 2009). The JLPT is a large Japanese-language test in the world with 1.36 million applicants (644,104 in July and 718,063 in December) in 238 cities in 75 countries and areas overseas and 47 prefectures in Japan in 2019 (The Japan Foundation & Japan Educational Exchanges and Services, 2019a, 2019b). Emphasizing both practical Japanese communicative competence and knowledge of the Japanese language, this test measures language knowledge which includes vocabulary and grammar, and the competence required to perform communicative tasks using such language knowledge (The Japan Foundation & Japan Educational Exchanges and Services, 2009). To measure comprehensive Japanese language communicative competence through knowledge of Japanese language (vocabulary/grammar) and reading and listening in order to measure ability to use the

knowledge in actual communication (Hatasa & Watanabe, 2017). The JLPT provides a "Japanese-Language Proficiency Test Can-do List", a list of Japanese language activities which successful examinees THINK they can do, obtained and presented through a survey. A Can-do List will be presented to help examinees and others better understand the test results in terms of practical language use (The Japan Foundation & Japan Educational Exchanges and Services, 2009). The Can-do statements (Cds) in the list cover all the four basic skills: listening, reading, speaking, and writing.

(2) The Examination for Japanese University Admission for International Students (EJU)

The Examination for Japanese University Admission for International Students (EJU) started in 2002 as an examination to evaluate whether international students who wish to study at the undergraduate level at universities or other such higher educational institutions in Japan possess the Japanese language skills and the basic academic abilities needed to study at those institutions (Japan Student Services Organization, 2020). The Japan Student Services Organization administers the examination with the cooperation of the Ministry of Education, Culture, Sports, Science and Technology, the Ministry of Foreign Affairs, Japanese universities, and affiliated institutions in Japan and overseas (Japan Student Services Organization, 2019a). The number of EJU applicants is 69,820 (35,953 in June and 33,867 in November) in 16 prefectures in Japan and 14 countries or regions overseas in 2019 (Japan Student Services Organization, 2019a, 2019b). The EJU places excessive emphasis on listening while not placing enough weight on reading and writing (Kadokura, 2002), for instance, the reading materials in EJU are short and nonacademic. The EJU is the only test that includes a writing test in these four tests.

(3) The Business Japanese Proficiency Test (BJT)

The Business Japanese Proficiency Test (BJT) which promoted by The Japan Kanji Aptitude Testing Foundation (Kanken) started in 2003 as a test to measure proficiency in communicating in the Japanese language required in business settings (The Japan Kanji Aptitude Testing Foundation, 2020). According to the Kanken the applicants for the tests in 2016 the BJT was conducted in 21 prefectures in Japan and

18 countries overseas, and approximately 6,592 examinees took the test. The BJT is taken by businesspeople working on the front-line of business and students expecting to get jobs. Knowledge of Japanese grammar and vocabulary and business practices is regarded as premise knowledge. The main objects of measurement are the ability to process information and business skills. The BJT also offers a "Can-do Report," which describes what a person certified at a certain level is supposed to be able to perform in Japanese and covers the four skills.

(4) The Test of Practical Japanese (J.TEST)

The Test of Practical Japanese (J.TEST) was introduced in 1991 as a test to assess the ability to use Japanese in practical settings such as applying for jobs and schools, and performing various tasks in these environments (Hatasa & Watanabe, 2017). Each year around 50,000 non-native speakers who are company employees, international students and student of Japanese language school take the J.TEST. The J.TEST Office and Association for Testing Japanese Proficiency organize this test six times each year in 13 countries or areas (J. TEST Office & Association for Testing Japanese Proficiency, 2020). In addition to the regular J.TEST, the business J.TEST is also available for higher-level learners who have earned 700 points or above in the A-D level of the J.TEST or N1 in the JLPT.

(5) The reason to use JLPT

Comparing these four large-scale tests, almost all of the tests measure knowledge of the language (Watanabe & Koyanagi, 2014). The JLPT is the world's largest language test in terms of both implementation size and test impact (Lee et al., 2011) for evaluating Japanese language proficiency. The JLPT has a long history and with 266,830 applicants (140,453 in July and 126,377 in December) in China in 2019 (The Japan Foundation & Japan Educational Exchanges and Services, 2019a, 2019b). The applicants cover a wide age range, from elementary school pupils to working adults, in which 42.2 % are university or graduate school students in 2018 (The Japan Foundation & Japan Educational Exchanges and Services, 2020). The JLPT is taken for various reasons, 33.2% of the applicants are to measure their own levels of proficiency in 2018 December test (The Japan Foundation & Japan Educational

Exchanges and Services, 2020). The JLPT is suitable to evaluate the Japanese language proficiency of university students. The JLPT places importance on knowledge of Japanese-language vocabulary and grammar and on the ability to use the knowledge in actual communication. The test is suitable for beginners and advancers who studying Japanese as a second foreign language in university.

Test scores and pass or fail results alone do not clarify what students can do in Japanese in real life. For this reason, the JLPT offers "JLPT Can-do Self-Evaluation List" as a reference to interpret test results (Lee et al., 2011). The list can be used by examinees and others as a reference to get an idea of "what successful examinees of a particular level can do in Japanese" (The Japan Foundation & Japan Educational Exchanges and Services, 2020). The developers of the Can-do statements (Cds) for the large-scale tests such as the JLPT, EJU, and BJT have reported a high level of correlations between test scores and the scores of the corresponding Can-do statements (Ashihara & Onozuka, 2014; Japan Student Services Organization, 2020; The Japan Foundation & Japan Educational Exchanges and Services, 2020). The results of the Cds coincided with the results of the Japanese Language Proficiency Test (Shimada et al., 2006).

JLPT is produced by an authoritative organization and has a wide degree of recognition. It is popular in universities and has many sample questions. There are many practice materials for JLPT, and it is easy to obtain. The author uses the Japanese Language Proficiency Test and JLPT Can-do Self-Evaluation List to evaluate the performance of the Japanese language of the university students.

4.2 The Japanese Language Proficiency Test and JLPT Can-do Self-Evaluation List

The JLPT is simultaneously conducted twice a year (July and December) in Japan and various locations overseas, which features five levels of exams, ranging from elementary (N5) to advanced (N1). N4 and N5 measure the level of understanding of basic Japanese mainly learned in class; N1and N2 measure the level of understanding of Japanese used in a broad range of scenes in actual everyday life; N3 is a bridging level between N1/N2 and N4/N5 (The Japan Foundation & Japan Educational Exchanges and Services, 2020). The JLPT measures comprehensive

Japanese-language communicative competence through three elements: 1) Language Knowledge to measure knowledge of Japanese-language vocabulary and grammar, 2) Reading and 3) Listening to measure ability to use the knowledge in actual communication. Types of test items of vocabulary are Kanji (Chinese character) reading, orthography, word formation, contextually-defined expressions, paraphrases and usage; of grammar are sentential grammar form, sentence composition and text grammar; of reading are comprehension (short passages, mid-size passages, and long passages), integrated comprehension, thematic comprehension (long passages) and information retrieval; of listening are task-based comprehension, comprehension of key points, comprehension of general outline, verbal expressions, quick response, and integrated comprehension.

(1)   Linguistic competence required for each level

Different questions are provided in JLPT to measure the Japanese-language competency of examinees as accurately as possible. Referring to "Summary of Linguistic Competence Required for Each Level" (The Japan Foundation & Japan Educational Exchanges and Services, 2019a) students choose their suitable levels before taking the test. In addition, to check specific levels by going over sample questions of JLPT.

Linguistic competence required for the JLPT is expressed in terms of language activities, such as Reading and Listening. For reading, N1 requires the ability to understand Japanese used in a variety of circumstances; N2 requires the ability to understand Japanese used in everyday situations, and in a variety of circumstances to a certain degree; N3 requires the ability to understand Japanese used in everyday situations to a certain degree; N4 and N5 requires the ability to understand some basic Japanese (The Japan Foundation & Japan Educational Exchanges and Services, 2020). The Reading part as shown in below.

Table 12 Summary of linguistic competence required for each level

Level	Summary of linguistic competence required for each level: Reading
N1	One is able to read writings with logical complexity and/or abstract writings on a variety of topics, such as newspaper editorials and critiques, and comprehend both their structures and contents.
	One is also able to read written materials with profound contents on various topics and follow their narratives as well as understand the intent of the writers comprehensively.
N2	One is able to read materials written clearly on a variety of topics, such as articles and commentaries in newspapers and magazines as well as simple critiques, and comprehend their contents.
	One is also able to read written materials on general topics and follow their narratives as well as understand the intent of the writers.
N3	One is able to read and understand written materials with specific contents concerning everyday topics.
	One is also able to grasp summary information such as newspaper headlines.
	In addition, one is also able to read slightly difficult writings encountered in everyday situations and understand the main points of the content if some alternative phrases are available to aid one's understanding.
N4	One is able to read and understand passages on familiar daily topics written in basic vocabulary and kanji.
N5	One is able to read and understand typical expressions and sentences written in hiragana, katakana, and basic kanji.

Note. Revise from "The Japanese-Language Proficiency Test Summary of the Results December 2019," by The Japan Foundation, & Japan Educational Exchanges and Services, 2019

According this table that shows the level of reading skills required for each level of the JLPT students can check specific levels by practice "New Japanese-Language Proficiency Test Sample Questions" or "Japanese-Language Proficiency Test Official Practice Workbook" (The Japan Foundation & Japan Educational Exchanges and Services, 2020). While not noted in the table, Language Knowledge, such as Vocabulary and Grammar, is also required for successful execution of these activities.

Levels N1 and N2 have two separate test sections each: (a) Language Knowledge (Vocabulary/Grammar) and Reading, and (b) Listening. Levels N3 to N5 have three separate test sections each: (a) Language Knowledge (Vocabulary) and (b) Language Knowledge (Grammar) and Reading, and (c) Listening. The instruction for beginners who study Japanese as a second foreign language in university contains the linguistic knowledge to N5-N4. The author uses section Language Knowledge and Reading of N5 - N3 to measure the reading skills of the students.

(2) JLPT Can-do Self-Evaluation List

A questionnaire survey was conducted with approximately 65,000 JLPT examinees both in and outside Japan from September 2010 to December 2011. In this study, for each of the four skill areas of Listening, Speaking, Reading and Writing, examinees were asked to review approximately 30 statements that describe activities (Can-do items). Results of the above questionnaire survey were statistically analyzed, and the list was prepared based on analysis of responses by examinees of all levels, Can-do items for each skill are arranged in order of difficulty. Finally, 20 Can-do items from each skill were selected, and percentages of successful examinees of each level who think they "can do" an item were illustrated by four graduated colors for ① 75% or higher, ② 50-75%, ③ 25-50%, and ④ less than 25% (The Japan Foundation & Japan Educational Exchanges and Services, 2012). For evaluate the Japanese reading skill uses the reading part of the list (Figure 1).

Figure 1.

JLPT Can-do Self-evaluation List: Reading

			N1	N2	N3	N4	N5
difficult	1	I can understand the main points of articles on politics, economics, etc., in newspapers and magazines.					
	2	I can understand the points, opinions, and argument structure of editorial columns (e.g. in newspapers, etc.).					
	3	I can read novels, understanding the feelings of the characters and the story line.					
	4	I can understand what the author wants to say in narrative essays.					
	5	I can understand the main ideas of academic/technical texts on topics I am concerned about.					
	6	I can understand the content of official letters and e-mails written in polite Japanese.					
	7	I can understand inquiries and requests from business partners.					
	8	I can understand the content of articles in newspapers and magazines written about familiar everyday topics.					
	9	I can get necessary information from travel guidebooks and magazines about entering university or finding jobs.					
	10	I can understand the definitions provided in general Japanese-Japanese dictionaries.					
	11	I can get necessary information from the brochures of products (e.g. product features, etc.).					
	12	I can understand the main story lines of short stories.					
	13	I can understand post cards and e-mails from my acquaintances and friends.					
	14	I can get necessary information (e.g. lecture or meeting schedules, etc.) from notice boards at school or work.					
	15	I can understand the sale dates and prices listed in newspaper advertisements and fliers.					
	16	I can read train schedules and guide signs at stations in order to determine what time to board my train.					
	17	I can read and understand New Year's and birthday cards.					
	18	I can understand simple memos.					
	19	I can understand simple instructions with pictures (e.g. how to put out trash, how to prepare meals).					
easy	20	I can understand my appointment day and time from appointment reservation charts at my school, etc.					

Legend:
- □ less than 25%
- 25-50%
- 50-75%
- 75% or higher

Note. Revise from "JLPT Can-do Self-Evaluation List: Reading," by The Japan Foundation, & Japan Educational Exchanges and Services, 2012

The Can-do Self-Evaluation can be used as a reference to help students check their abilities and set goals for future studies. In addition, they can use the list to explain the level they passed to others; those involved in Japanese-language education can use the list to get an idea of what students who pass each level perceive their Japanese-language proficiency to be, and refer to this information when planning teaching activities; others involved with students can use the list to get an idea of what

those who pass a particular level can handle, and refer to the information when working and dealing with students (Lee et al., 2011; The Japan Foundation & Japan Educational Exchanges and Services, 2012, 2020; Zhang & Kojima, 2019).

4.3   JF Standard for Japanese-Language Education

The JF Standard was developed based on the concepts supporting the CEFR, which serve as the basis of language education in Europe. CEFR stands for Common European Framework of Reference for Languages: Learning, Teaching, Assessment, and presents a framework shared by language education and learning institutions in Europe (Council of Europe et al., 2001). Since its promulgation in 2001, CEFR has attracted attention not only in Europe, but also on a global scale, and has come to be utilized in various languages. The goal is that through the use of this framework, teachers and learners around the world should be able to assess their classroom learning progress and proficiency level under the same single set of criteria (Hatasa & Watanabe, 2017).

(1)   JF Standard

The Japan Foundation (JF) has been engaged in the development of the "JF Standard for Japanese-Language Education" (hereafter referred to as the "JF Standard") since 2005 under the principle of "Japanese for mutual understanding," and has released the "JF Standard for Japanese-Language Education 2010" (hereafter referred to as "JF Standard 2010"). The JF Standard 2010 adopts the fundamental philosophy of Common European Framework of Reference for Languages (CEFR) and is aimed at providing a standard for the assessment and teaching of the Japanese language. By using the JF Standard, it is possible to see Japanese-language proficiency levels in a way that is based on the CEFR.

The JF Standard consists of both CEFR Can-dos and JF Standard Can-dos. CEFR Can-dos are multipurpose abstract descriptors, while the JF Can-dos are examples of practical language activities related to situations where you use Japanese (The Japan Foundation, 2017).

As such, the descriptors in the Common Reference Levels of the CEFR were adopted in the JF Standard as well. Six levels of Japanese-language proficiency were designated on the basis of the two categories in the CEFR, namely, the communicative language activities and the communicative language competence. The statements in the JF Standard have been modified to fit the Japanese context. The assessment tables include self-assessment checklists, a description of assessment standards, and assessment sheets.

Learners can assess themselves only when they have a sufficiently clear picture of the targets that their learning is meant to attain (Black & Wiliam, 1998). There is evidence that language learners will produce more accurate self-assessments if the criterion relates to achievement of concrete functional skills and explicitly stated behaviors (Ross, 1998). Clarity of goals and accuracy of learner self-assessments can thus be regarded as inter-related phenomena, the more explicitly stated the goal, the greater the likelihood that the learner can estimate his or her learning in a meaningful way (Oscarson, 2014).

In the process of developing the JF Standard, language communication was perceived through the relationship between communicative language competences and communicative language activities (The Japan Foundation, 2017). Based on this concept, the level of Japanese-language proficiency was described through a set of sentences that indicate what the learner "can do" in Japanese, and was divided into six levels. These sentences are called "Can-do."

(2)　　Can-do statements (CDSs)

Can-do statements (CDSs) is a self-assessment survey which are statements indicating what and how well students can do in a foreign language. Self-assessment (SA) has been applied to classroom instructions to motivate and improve learning in the framework of self-reflective practices (Oscarson, 2014). Findings of a meta-analysis indicated that the magnitudes of relationships between SA and the criterion variables for four different skills (i.e., reading, listening, speaking, and writing) were robust (Ross, 1998). SA on reading skills has been found to be most accurate and highly correlated with objective L2 proficiency tests compared to other skills (Ross,

1998; Shimada et al., 2006). The reliability of the reading section of the questionnaire reported was high (Shimada et al., 2006).

The Can-do statements help test users to interpret test scores in reference to real-life abilities and provide meaningful feedback to the test takers (Shimada, 2010; Shimada et al., 2006). That is, these statements describe a series of concrete tasks that an individual at a certain level may be able to do using the target language (Hatasa & Watanabe, 2017). The target-use domain in the CDSs questionnaires focused on college life, but it not only involved academic activities but also activities in life outside of universities (Suzuki, 2015).

(3)   Related research of CDSs and test scores

Several studies have investigated the correlation between the results of Can-do statements and the scores of objective tests to procure evidence of validity. It was examined how the results of can-do statements differ from test scores. The relation between each item of can-do statements and the test results were analyzed. Some items of can-do statements, which correlated weakly with test scores, require social-cultural knowledge or are correlated with everyday life (Shimada, 2010). This fact shows the possibility that can-do statements are capable of measuring an aspect of the learner's ability that objective tests are incapable of measuring (Shimada, 2010). The research examined the discrepancy between the CDSs (i.e., perceived ability) and the objective L2 proficiency tests (i.e., actual ability), whereby less experienced L2 speakers overestimated their ability, whereas those with more experience underestimated their language skills (Suzuki, 2015)

Table 13Researches related to the relation between CDSs and test scores

	Researcher	Sample	Assessment	Detail	Content	Result
1	Suzuki (2015)	Chinese (advanced learners), N=63.	Cds	15 descriptors, 7-point Likert	Reading	Cds and the objective tests have discrepancies

				scale		
			C test	Passages (230 characters)	Vocabulary and grammar	
			Elicited imitation	80 sentences	Proficiency	
2	Shimada (2010)	International students, N = 115	Cds	80 items	4 skills	Cds can measure an aspect that test cannot.
			Japanese placement test	Test paper	Listening, reading, vocabulary and grammar	

4.4 The way to evaluate Japanese reading skills

Referring to "New Japanese-Language Proficiency Test Sample Questions" or "Japanese-Language Proficiency Test Official Practice Workbook" to evaluate the Japanese skills of the students. Sample questions are organized by level, from N1 to N5. N3-N5 are suitable for the beginners. Sample questions show the form of test items on the JLPT. Test sections are Language knowledge (Vocabulary/Grammar), Reading and Listening. The test section of to N3-N5 for reading has two type, Language knowledge (Grammar) and Reading. Grammar has Sentential grammar (Selecting grammar form and Sentence composition) and Text grammar. Reading has Comprehension (Short passages, Mid-size passages and Long passages), Integrated comprehension (N1, N2), Thematic comprehension (N1, N2) and Information retrieval.

To use the section of Language knowledge (Grammar) & Reading of sample questions in JLPT to evaluate the Japanese reading skills of students. After getting the score of the JLPT, students set goals for future study with JLPT Can-do Self-Evaluation List.

Learners can check their progress by using the self-assessment tool available from the website, called "Minna no Can-do Site"

(http://jfstandard.jp/cando/top/ja/render.do). JF Can-do (2019) has 532 items. In order to develop the can-do statements, 173 descriptors of language behaviors were first selected by referring to the previous studies on foreigners' use of Japanese and contents from textbooks used in colleges and Japanese language schools (Suzuki, 2015). The 173 descriptors were further narrowed down to 60 descriptors (15 for each of the four skills) that are (1) needed to lead daily-life and academic activities in college, (2) activities supposedly experienced by the test-takers, and (3) of a concrete nature, involving authentic situations (Suzuki, 2015). In the questionnaire, the participants were required to indicate how much they could do in Japanese on a 7-point Likert scale, with 15 CDSs pertaining to the reading skills (Appendix A) (Suzuki, 2015). All the selected items were positively worded.

Can-do statements

Please assess your current ability to use Japanese in the following situations. For each question, please circle the number between 1 and 7 that you believe best indicates your level. Mark the circle on the intersection point on the graph below the number, not in between the numbers. If you have not experienced a given situation, please try to imagine the situation and choose the number that best applies. 1-7 can be interpreted in the following manner:

| 1 | 2 | 3 | 4 | 5 | 6 | 7 |

Cannot do at all   Can do to a certain extent   Can do with no problems

1. Can you read and understand newspaper editorials?
2. Can you read and understand posters, notices, and other printed materials posted around school?
3. Can you read and understand school rules and regulations?
4. When you look at the spines of books on the shelves in the library, can you find the book you are looking for?
5. Can you read and understand novels?

6. Can you read and understand the flyers in train stations, travel agencies, etc.?

7. Can you read and understand books, academic papers, etc., that are necessary for your studies?

8. Can you understand advertisements in trains, buses, etc.?

9. Can you read and understand the questionnaire given before having an examination at a medical office or hospital?

10. Can you read and understand things that are handwritten on blackboards, bulletin boards, etc.?

11. Can you read and understand newspaper articles about societal issues (incidents, accidents, etc.)?

12. Can you read and understand the required information on water, electricity, and gas bills?

13. Can you understand computer and machinery operating manuals?

14. Can you understand the notices and information sent by school or city hall?

15. Can you read and understand job search information (job advertisements, part-time work information, etc.)?

2.4 Reading comprehension skills

The definition of reading depends on the purposes of reading for the individual reader. There are two factors in the reading process: the reader and the reading text. Apart from the reader and the text, there are many other factors in the reading process, which influence reading comprehension. Unlike comprehension, which can be viewed as the product of reading a particular text, skills are seen as parts of the generalized reading process (Urquhart & Weir, 2014).

1. Definition

1.1 Reading

Department of Education (2001) puts it clear that "Traditional theories approach reading as a process of comprehending words, then comprehending the relations between the words in a sentence, and finally uttering them or realizing them in silent speech".

Reading is a complex undertaking and an impressive achievement, as demonstrated by a century of research (Afflerbach & Cho, 2009; RAND Reading Study Group, 2002).

As for Brown (2004), reading is a process of negotiation of meaning. In this process, the readers bring their early thought to the reading process for their final understanding about the meaning of the text they read.

According to Harmer (2015), when the learners read a story or a newspaper, they deploy a range of respective skills. It means that reading is respective skills that require the readers' ability to create interaction between the linguistic knowledge and knowledge of the world.

Reading is thinking, understanding and getting at the meaning behind a text (Serravallo, 2010). He explained that reading must be directed toward the understanding and catching the idea that the text provides.

Celce-Murcia (2001) views reading as an interactive process that involves with a text, a reader, and a social context in which the reading process occurs. She said that the transaction includes the reader activity on interpreting the text.

Chamot & Kupper (2010) state that" reading is the ability for a reader to transfer written symbols to the meaning and using them communicatively and effectively".

Nuttal (1996, p.4) defined the term "reading" as "a process to get meaning from a text".

Sheng (2000) defined the process of reading including the process of recognition, interpretation, and perception of written or printed material.

Chandavimol (1998) said that teacher are required to study a theory of reading comprehension for organizing a more effective reading program and improving students' understanding.

A reading skill can be described roughly as a cognitive ability which a person is able to use when interacting with written texts (Urquhart & Weir, 2014).

Reading skill is the product of decoding and comprehension (Gough & Tunmer, 1986).

Conclusion, reading skill is a part of reading process, reading skill is the cognitive ability to understand and get the meaning from a text.

1.2 Reading comprehension

Reading comprehension is the ability to process text, understand its meaning, and to integrate with what the reader already knows. Reading comprehension is the level of understanding of a text/message. This understanding comes from the interaction between the words that are written, and how they trigger knowledge outside the text/message (Rayner et al., 2001). Comprehension is a creative, multifaceted process dependent upon four language skills: phonology, syntax, semantics, and pragmatics.

Fundamental skills required in efficient reading comprehension are knowing meaning of words, ability to understand meaning of a word from discourse context, ability to follow organization of passage and to identify antecedents and references in it, ability to draw inferences from a passage about its contents, ability to identify the main thought of a passage, ability to answer questions answered in a passage, ability to recognize the literary devices or propositional structures used in a passage and determine its tone, to understand the situational mood (agents, objects, temporal and spatial reference points, casual and intentional inflections, etc.) conveyed for assertions, questioning, commanding, refraining etc. and finally ability to determine writer's purpose, intent and point of view, and draw inferences about the writer (discourse - semantics).

Ability to comprehend text is influenced by readers' skills and their ability to process information. If word recognition is difficult, students use too much of their

processing capacity to read individual words, which interferes with their ability to comprehend what is read.

There are many reading strategies to improve reading comprehension and inferences, including improving one's vocabulary, critical text analysis (intertextuality, actual events vs. narration of events, etc.) and practicing deep reading.

Reading is an important part of the learning process.

Seyler (2000) stated that reading is the understanding of ideas, information or feeling which the words convey when put together in the specific form chosen by writer.

Reader has to be able to comprehend the text in order to understand, evaluate and criticize.

To teach students to read is to teach the way to comprehend and react to what they read or to read for meaning (Tierney and Readence, 2000).

According to Rubin (1993) and Burns (1999) reading comprehension was an ability to get the meaning of what was read, which the reader was required to comprehend the meaning of the texts.

Therefore, teachers of reading needed to understand the nature of reading comprehension in order to enable their students to comprehend texts and to teach reading more efficiently and effectively.

Reading comprehension was an interactive process between the reader's background knowledge and the text (Carrell, 1987).

Grabe and Stoller (2002) stated that comprehension was one of the aims that encouraged people to read. They also suggested that "reading for general comprehension required very rapid and automatic processing of words, strong skills in forming a general meaning, presentation of main ideas, and efficient coordination of many processes under very limited time constraints" (p.14).

Lenz (2005) identified that reading comprehension is the process of constructing meanings from the text.

Klinger (2007) stated that reading comprehension involves much more than readers' responses to text.

Along similar lines, Pang et al (2003) defines comprehension as a process of deriving meaning from connected text.

In conclusion, reading comprehension means automatic process the words to understand the meaning of the text, to get the new information and combine the prior knowledge to form reader's ideas.

2. Component / Type / Kind

Reading comprehension is a complex cognitive process that involves both lower (e.g., decoding, orthographic processes) and higher level processing of information to extract meaning from text (McNamara & Magliano, 2009). Higher order skills are known to correlate very highly with reading comprehension (Oakhill & Cain, 2012) and might even be conceived as a part of reading comprehension skills. As the third skill in language acquisition, it requires a great deal of concentration on the material to be read, taking appropriate notes on the words and their pronunciation and also the punctuation marks that guide the reading for meaningful comprehension (Straus, 2015). There are many components of the theory of reading. There are theories of word reading, theories of learning to read, theories of dyslexia, and theories of comprehension at various grain sizes (sentence comprehension, text comprehension), appropriately targeted to a manageable part of reading (Perfetti, 2014). Reading a passage involves decoding, comprehension, and the interaction between the two processes (Keenan, Betjemann, & Olson, 2008). The correlations between reading comprehension and reading fluency were moderate, there were moderate to high correlations between reading comprehension and vocabulary, and reading comprehension and working memory showed low to moderate correlations (Muijselaar et al., 2017b).

Learning style, L1 reading skills, L2 language proficiency, and the influence of native culture on reading attitudes and behavior are the factors that influence how students go about reading in an L2 (Aebersold & Field, 1997).

According to the National Reading Panel (2000), three important elements needed to promote comprehension are vocabulary development and vocabulary instruction, comprehension strategies, and development of teachers to learn and help students apply comprehension strategies.

The strategies for monitor the reading process and when a child does not comprehend the meaning of a word or (a part of) the text (Muijselaar et al., 2017a).

The modern study of reading comprehension was propelled by two complementary ideas, one concerning an enriched level of comprehension beyond the literal meaning of a text—the reader's situation model (Van Dijk & Kintsch, 1983) - and one about the cognitive dynamics of text comprehension, the construction-integration model (Kintsch, 1988).

The C-I model made some general assumptions about the reader's cognitive architecture (e.g., limited memory) and cognitive procedures (e.g., retrieval and carry-over operations) as well as text devices (e.g., argument overlap) that support comprehension. An important value of the C-I theory was its demonstration that text comprehension could be explained by an interactive combination of top-down (knowledge-driven) and bottom-up (word-based) processes.

2.1 Factors affect reading ability

1)Three factors, Urquhart and Weir (1998)

Urquhart and Weir (1998) present three factors that influence successful reading. They are word recognition, language, and background.

Word recognition includes lexis, phonic and semantics.

Language refers to linguistics including syntax, cohesion, and text structure such as problem–solution, cause–effect, and chronology.

Background or world knowledge refers to individual experiences, which help readers understand the text being read.

2)Six factors, Ruddell & Ruddell (1995)

There are six efficient factors that promote successful reading (Ruddell & Ruddell, 1995). Word analysis, language knowledge, prior or background knowledge, reading motivation, text interaction, and effective comprehension strategy.

(1) Word analysis includes knowledge in lexis, phonics, and semantic meaning of words.

(2) Language knowledge is the linguistic knowledge that helps readers infer meaning in the sentence rationally or legically.

(3) Background knowledge refers to literacy and prior knowledge which stem from personal response to a reading text.

(4) Reading motivation is an intellectual curiosity that helps readers make better sense of the reading text.

(5) Text interaction is a reading process whereby readers use their language knowledge including word meaning, sentence and story structure to enhance their understanding of the text.

(6) Effective comprehension strategies are formed by individual tactics that successful readers employ to help them get better comprehension of the text being read.

3)Six factors affect reading ability (Aebersold & Field, 1997)Aebersold and Field (1997) present six factors, which comprise:

Cognitive development and orientation of cognitive style; reading performance and competence of first language; metacognitive knowledge; the degree of difference between native language and foreign language; and cultural orientation.

These factors are detailed, as follows.

First, cognitive development and orientation of cognitive style can be explained as teachers being aware of students' cognitive development and orientation of cognitive style in order to help students construct their own learning style such as reading strategy used to solve reading problems.

Second, first language reading performance can explain competence, as skillful and flexible students can adjust and transfer their first language reading strategies to solve reading problems in their second language better than students who are not so skillful.

Third, metacognitive knowledge is a core ability of students to discuss, describe, give the rules to their own language, and comment on the way they use their knowledge. Readers who are good at employing metacognition are much better developed readers than those who are not.

(4) Proficiency of foreign language can be explained, as students who have limited knowledge of foreign language, face more reading problems because language knowledge can help students solve reading problems.

(5) The degree of difference between native language and foreign language can be explained as it is more difficult for readers to comprehend the text being read if the foreign language is much more difficult or different from the native language.

(6) Cultural orientation includes readers' attitude toward the text being read, purpose of reading, types of reading skills, employed reading strategies, beliefs about the reading process, native knowledge on text types, and background knowledge of the foreign language.

4)Nine basic skills to comprehension in reading (Davis, 1944)

Davis (1944) conducted the first psychometric analysis to determine "how many" comprehension skills there really were, he was able to cull nine candidates from his analysis of school reading curricula, and these are word meanings, word meanings in context, follow passage organization, main thought, answer specific text-based questions, text-based questions with paraphrase, draw inferences about content, literary devices, author's purpose.

(1) Knowledge of word meanings;

(2) Ability to select the appropriate meaning for a word or phrase in the light of its particular contextual setting;

(3) Ability to follow the organization of a passage and to identify antecedents and references in it;

(4) Ability to select the main thought of a passage;

(5) Ability to answer questions that are specifically answered in a passage;

(6) Ability to answer questions that are answered in a passage but not in the words in which the question is asked;

(7) Ability to draw inferences from a passage about its contents;

(8) Ability to recognize the literary devices used in a passage and to determine its tone and mood;

(9) Ability to determine a writer's purpose, intent, and point of view, i.e., to draw inferences about a writer.

According to the first study to make use of tests especially constructed to measure the mental skills in reading comprehension, relatively high correlations between skill 1 (knowledge of word meanings) and each of skills 2-9. Skill 1 constitutes the largest element common to all of the other initial variables. That means

skill 1 is basic to the measurement of all the other skills since to read at all one has to recognize words and understand their meanings, and that some overlapping of skills 2-9 is inevitable (Davis, 1944).

5)Nine Factors that influence reading in foreign language

According to AEbersold & Field (1997), Urquhart & Weir (1998), Ruddell & Ruddell (1995), there are nine Factors that influence reading in foreign language,

-reading performance and competence in first language

-metacognitive knowledge

-the degree of difference between native language and foreign language

-cultural orientation

-word recognition; lexis, phonic and semantics

-linguistics; syntax, cohesion, and text structure

-background or world knowledge

-text interaction

-effective comprehension strategies

2.2 Types of reading skills

1)Four types of reading comprehension by Richards and Schmidt (2002)

Besides, Richards and Schmidt (2002) divide reading comprehension into four types, namely, literal, interpretive or inferential, critical or evaluative, and appreciative comprehension.

Literal comprehension is the first reading comprehension level. Readers can understand, remember, or recall information presented in a text.

Next, interpretive or inferential comprehension refers to readers' process of finding information not directly stated in the text by using their experience.

When readers compare information with their own background knowledge, critical or evaluative reading comprehension is occurred.

The last level is appreciative comprehension Readers are able to gain an emotional response from the text.

2)Four types of reading skills

The main types of reading are: Skimming - used to understand the "gist" or main idea. Scanning - used to find a particular piece of information. Extensive reading - used for pleasure and general understanding. Intensive reading - accurate reading for detailed understanding.

Skimming

Skimming is reading quickly to gain a general idea. Skimming may allow people to 'read' up to 1000 words a minute.

Skimming helps students identify whether or not to continue reading, what to read carefully, and where the best place is to begin. Skimming an academic text immediately before students read it carefully can help students consider what they already know and can help students develop a purpose for reading. An initial skim can also help maximize students' interest in the text and their understanding and reflection on the material.

As with scanning, skimming does not involve reading every word. Instead, students may skim by reading:

Titles, subheadings; words in that are in bold, in italics or underlined; diagrams; a report's abstract, introduction or conclusion; the first sentence of every paragraph; chapter questions; chapter objectives; chapter summaries.

Skimming is the process of speedy reading for general meaning. Let students' eyes skip over sentences or phrases which contain detail. Concentrate on identifying the central or main points. Use this technique to: Preview a selection of text prior to detailed reading; refresh students' understanding of a selection of text following detailed reading.

Scanning

Scanning is reading quickly to search for specific information.

Scanning may allow students to 'read' up to 1,500 words a minute.

One reason to scan an academic text that students have found while researching is to locate key terms as a means to assess the text's relevance.

Scanning is the technique people pass vision speedily over a section of text in order to find particular words or phrases that are relevant to the current task. Students can scan: the introduction or preface of a text; the first or last paragraphs of chapters; the concluding or summarizing chapter of a text; the book index.

Extensive reading

Extensive reading is used to obtain a general understanding of a subject and includes reading longer texts for pleasure, as well as business books. Use extensive reading skills to improve students' general knowledge.

Intensive reading

Intensive reading is derived from the Latin word praelectio -reading aloud to others which is the classical exercise of reading all the words in a sentence and translating them (Foorman,2004). Intensive reading is used on shorter texts in order to extract specific information. It includes very close accurate reading for detail. Use intensive reading skills to grasp the details of a specific situation. In this case, it is important that students understand each word, number or fact.

2.3 Level of comprehension

1)Three levels of comprehension by Davis and Lass

According to Davis and Lass (1996), the levels of comprehension can be divided into three levels.

The first level is literal comprehension. Readers need to understand what is actually on page. They are able to identify the main components of a text (who, what, when, where) and can also find or remember main ideas or summarizing sentences.

For inferential comprehension, readers go beyond the text to their own experiences. They can make predictions or develop ideas when main idea, sequence, character, mood, or outcomes are not direct mention in the text.

The last level is critical comprehension. Readers evaluate what is read in the context of their experiences. Critical comprehension demands analytical skills. Readers must challenge the text with questions such as "Why?" or "Why not?" or "Do I agree?" or "So what?"

2)Three levels of reading comprehension by Ruddell (2001)

Ruddell (2001) classified reading comprehension into three levels: literal comprehension, interpretive comprehension, and applied comprehension.

Literal comprehension is the meaning that the reader gains from reading directly.

Interpretive comprehension requires the reader to conclude, compare and understand the symbolic use of language and ideas.

The reader can get the meaning from the author's message that are not state directly.

The reader is able to understand and relate to the information in the text with his or her prior knowledge in applied comprehension level.

Consequently, the reader has to connect the new information with the prior knowledge when reading.

However, just as Alderson (2000) notes, although intuitively appealing, such distinctions among levels of understanding are not always easy to define, since language is rarely completely explicit, normal language processing requires the reader to make inferences.

3)Four levels of reading comprehension by Muijselaar et al. (2017)

Four levels of comprehension were examined: (a) focus on and retrieve explicitly stated information; (b) make straightforward inferences; (c) interpret and integrate ideas and information; and (d) examine and evaluate content, language, and textual elements (Muijselaar et al., 2017a).

2.4 Component

It is commonly known that reading fluency, vocabulary, and working memory are important predictors of reading comprehension (Daneman & Merikle, 1996; Hoover et al., 1990; Pressley, 2002).

1)Five Components of reading by the National Reading Panel (2000)

The National Reading Panel identified five components of reading: phonemic awareness, phonics, fluency, vocabulary, and comprehension (Panel et al., 2000). These components have been identified as essential to the process of learning to read in young students. The teachers who scored high on the differentiated instruction checklist consistently implemented the same strategies or practices that contributed to student learning (Panel et al., 2000). These strategies were broken down into the five components of reading:

Phonemic awareness

Phonemic awareness is the ability to attend to the individual sounds in spoken words (Adams, 1990:102). Phonemic awareness is the understanding that all spoken words are made up using a subset of about 44 individual sounds, called phonemes. Mastery of the skill of phonemic awareness has to be to the point of automaticity in order for fluency to be developed. Research has shown that teaching phonemic awareness to young students increases reading achievement.

Phonics

Phonics instruction focuses on a child's ability to understand the alphabetic principle or letter-sound knowledge. A child who understands the alphabetic principle demonstrates an awareness of the relationship between a written letter or word and the sound(s) it represents (Oueini et al 2008). Children learn that the sounds in spoken words relate to the patterns of letters in written words. Not just mastery of the skills of systematic phonics, but automaticity in those skills, is also necessary for fluency to develop. Moreover, the systematic instruction in phonics that occurred during beginning reading instruction lead to significant reading achievement (Foorman et al., 2004).

With these two layers (Phonemic awareness and Phonics) in place and developed to the point of automaticity, techniques to improve Fluency can begin to be effective.

Fluency

Another practice that deserves more attention in classrooms is the use of various repeated oral reading methods that are implemented during whole class reading instruction. Fluency is defined as "the ability to read with accuracy, speed, and prosody" (Harmer, 2001). Fluency includes accuracy, speed, understanding and prosody. Word calling is not the same as fluency. Research has shown that repeated oral reading is effective at improving fluency (Panel et al., 2000).

Vocabulary

Vocabulary Development including learning the meaning of new words through direct and indirect instruction, and developing tools like morphemic analysis, to discover the meaning of an unknown word. Research has shown that vocabulary knowledge contributes to students' ability to comprehend text (Harmer, 2015). It is

important that vocabulary instruction provides students with several opportunities to encounter words repeatedly and in multiple contexts.

Comprehension

Comprehension is the complex cognitive process readers use to understand what they have read (Panel et al., 2000). Vocabulary development and instruction play a critical role in comprehension.

2)Seven essential skills for reading comprehension

There are 7 essential skills for reading comprehension:

Decoding, fluency, vocabulary, sentence construction and cohesion, reasoning and background knowledge, and working memory and attention. Because comprehension is the ultimate goal of reading (Group, 2002), reader need to have good decoding ability (e.g., ability to interpret the symbols) and good listening comprehension (e.g., your ability to understand oral language) (Kendeou, Savage, Van den Broek, 2009). The previous research showing more influence from decoding skills for younger and less skilled readers (Catts et al., 2005; Hoover & Tunmer, 1993; Keenan et al., 2008).

Decoding

The ability to decode is at the core of reading ability, such that learning to decode is tantamount to learning to read (Fries, 1962; Gough, 1972; Rozin & Gleitman, 1977). Children must first master decoding, the ability to translate printed words into sounds because the ultimate goal of reading is to understand written text (Patael et al., 2018).

Perfetti's reading system framework (Perfetti,1999,2014) proposes that the lexicon mediates the relationship between decoding and reading comprehension, and that reading requires integration between language knowledge (e.g., letter knowledge, facts about the world) with reading processes (e.g., decoding, comprehension monitoring).

According to Perfetti (1999): The components of reading within a language-cognitive architecture from visual processing through higher level comprehension. The key elements are knowledge sources, basic cognitive and language processes, and interactions among them.

1. Three classes of knowledge sources are used in reading: linguistic knowledge, orthographic knowledge, and general knowledge (knowledge about the world, including knowledge of text forms, e.g., text genres).

2. The processes of reading - decoding, word identification, meaning retrieval, constituent building (sentence parsing), inference, and comprehension monitoring— use these knowledge sources in both constrained ways (e.g., decoding uses orthographic and phonological knowledge but not general knowledge) and in interactive ways (e.g., inferences use general knowledge and propositional meaning extracted from sentences).

3. These processes take place within a cognitive system that has pathways between perceptual and long-term memory systems and limited processing resources.

As a reader encounters a word, input from the visual orthographic system drives operations in the temporal lobes to retrieve associated linguistic and general knowledge from long-term memory.

Unification computations in the left inferior frontal gyrus integrate the word-level syntactic and semantic knowledge into the ongoing context (e.g., into a sentence).

Finally, limitations in cognitive resources are managed through the application of control operations in the dorsolateral prefrontal cortex and anterior cingulate.

The lexicon sits astride two reading systems:

One, the word identification system, requires high-quality linguistic and orthographic information to enable rapid word identification; The second, the comprehension system, takes its input from the word identification system to build meaning units (propositions).

Knowledge of written word forms and meanings is central to reading and thus a pressure point for reading comprehension-a prime candidate for a cause of reading comprehension difficulty (Perfetti,2007;Perfetti,,2002)

Cutting et al., 2015) suggests that executive function facilitates the growth and intertwining of decoding and language abilities to achieve skilled reading comprehension. It is possible that greater cognitive resources serve to boost reading comprehension, given a limited level of decoding. Language skills alone cannot

account for the comprehension-decoding discrepancy. To examine the role of cognitive skills in this discrepancy is important (Patael, 2018).

Becoming proficient in reading comprehension relies on mastering decoding (García & Cain, 2014) a skill that enables a student to map letters to their corresponding speech sounds and meaning.

The term decoding connotes the use of letter-sound correspondence rules, could not equate decoding with word recognition (Hoover & Tunmer, 1993).

The skilled decoder is exactly the reader who can read isolated words quickly, accurately, and silently, but researchers have argued (Gough, Juel, & Roper-Schneider, 1983) that beginning readers do not use such rules, and expert readers may not always do so (Gough, 1984).

Indeed, seminal frameworks in reading and its development indicate that reading comprehension is highly dependent on a reader's ability to decode words accurately, fluently and effortlessly (LaBerge & Samuels, 1974).

Skill in decoding is usually accompanied by skill in comprehension (Curtis, 1980; Perfetti & Hogaboam, 1975).

The existence of the condition (i.e., superior skill in decoding accompanied by average or even inferior comprehension) which has been labeled hyperlexia (Huttenlocher & Huttenlocher, 1973; Silberberg & Silberberg, 1967, 1968, 1971) is taken by some to show that since skill in decoding need not be accompanied by skill in reading, decoding cannot be crucial to reading.

Neuroimaging studies indicated that reading comprehension and decoding activated overlapping regions (Landi et al., 2013).

Reading comprehension is the product of two components—decoding and oral language comprehension. (Hoover & Gough,1990)

Increasing evidence has garnered empirical findings for the unique contribution of non-linguistic skills, such as cognitive control and working memory to reading comprehension (Arrington, 2014; Christopher 2012; Sesma, 2009)

Studies have shown that skills such as planning, shifting and, working memory have been moderately associated with reading comprehension (Hudson, 2016; Follmer, 2018)

Intervention studies report that training working memory enhances reading abilities (Dahlin, 2011).

These skills of cognitive control and working memory may enable readers to develop and revise plans for reading a text, making inferences by integrating incoming information with prior knowledge as well as previously read text information, and inhibit ideas or information not textually relevant during reading. (Landi, 2017; Reynolds, 2000)

For example, planning abilities, attention and working memory, have shown to support reading comprehension directly above and beyond foundational reading and language abilities (Carretti, 2009).

Prior knowledge

Prior knowledge plays an important role in reading comprehension. Effective reading comprehension requires the integrated interaction of derived text information and pre-existing reader knowledge (Corredor, 2006).

Students rarely have enough time to acquire knowledge from extensive personal reading or living experiences.

This leads to poor levels of reading comprehension among students, such that even average students are unable to read and fully understand material (Allington & Cunningham, 2002).

Cognitive control and working memory

It is possible that greater cognitive resources serve to boost reading comprehension, given a limited level of decoding (Patael et al.,2018).

The left DLPFC network influence reading comprehension possibly by inference, cognitive control and working memory. Language skills alone cannot account for the comprehension-decoding discrepancy (Patael et al.,2018). To examine the role of cognitive skills in this discrepancy is important (Patael et al.,2018).

Intervention studies report that training working memory enhances reading abilities (Dahlin, 2011).

Increasing evidence has garnered empirical findings for the unique contribution of non-linguistic skills, such as cognitive control and working memory to reading comprehension (Sesma, Mahone, Levine, Eason, & Cutting, 2009; Arrington, Kulesz, Francis, Fletcher, & Barnes,2014; Christopher et al., 2012;).

For example, planning abilities, attention and working memory, have shown to support reading comprehension directly above and beyond foundational reading and language abilities (Carretti, Borella, Cornoldi, De Beni, 2009).

Orthography、 phonology、 semantics

An interconnected and interactive system of mappings between printed words (orthography), spoken sounds/words (phonology), and word meanings (semantics).

The computation of these three codes (orthographic, phonologic, and semantic) is required for reading. (Seidenberg, 2007).

Interpret

Reading dwells more on our sense of reasoning which enables us to interpret and understand what we have read.

The components of reading skills

Reading processes		Davis (1944)	Patel et al.,2018	Perfetti,1999	Cutting, Bailey, Barquero,& Aboud,2015	Garcia & Cain, 2014	LaBerge & Samuels,1974	Hoover & Gough,1990; Hoover & Gough, 1990	Sesma, Mahone, Levine, Eason, & Cutting, 2009;	Dahlin, 2011; Hudson, Scheff, Tarsha, Cutting, 2016;	Cutting & Scarborough,2006; Follmer,2018; Reynolds,	Caretti, Borella, Cornoldi, De Beni, 2009	McNamara & Magliano, 2009	Urquhart and Weir (1998)	Ruddell &Ruddell (1995)	Kendeou, Savage, Van den Broek, 2009	Seidenberg,2007	Aebersold and Field (1997)	Sheng (2000)	The National Reading Panel (2000)
	Decoding		○	○	○	○	○	○					○			○				
	Comprehension monitoring			○																

	Text interaction	Recognition	Interpretation	Perception	Language knowledge		Facts about the world	Orthography	Phonology	Semantics	Listening comprehension	
					Letter knowledge						Oral language comprehension	
		○	○	○								
								○		○	○	
											○	
	○											
								○				
											○	
				○			○					

Non-linguistic skills	Cognitive control										
Working memory											
	Inference										
Attention											
Word recognition/ Word analysis	Lexis, phonic, semantics										
Language/linguistics	Syntax, cohesion, and text structure										
Background or world knowledge	Literacy and prior knowledge										
Comprehension strategy											

	Reading motivation	Language knowledge	Language abilities	Metacognition	Phonemic awareness	Phonics	Fluency	Vocabulary	Comprehension	Word meanings	Word

meanings in context	Follow passage organizatio n	Main thought	Answer specific text-based questions	Text-based questions with paraphrase	Draw inferences about
	○	○	○	○	○

123

content		
Literary devices	○	
Author's purpose	○	

Table 14The meanings of the components of the reading skill

Component	Meaning
Decoding	To translate printed words into sounds (patael et al.,2018). A skill that enables a child to map letters to their corresponding speech sounds and meaning (garcía & cain, 2014) Uses orthographic and phonological knowledge but not general knowledge
Language knowledge	Letter knowledge, facts about the world (perfetti,1999) The linguistic knowledge that helps readers infer meaning in the sentence rationally or lexically Ruddell＆Ruddell (1995). Including word meaning, sentence and story structure (ruddell＆ruddell, 1995)
Reading processes	Decoding, comprehension monitoring (perfetti,1999)
Processes of reading	Decoding, word identification, meaning retrieval, constituent building (sentence parsing), inferencing, and comprehension monitoring
Orthographic knowledge	Printed words (seidenberg,2007)
General knowledge	Knowledge about the world, including knowledge of text forms, e.g., text genres
Inference	Use general knowledge and propositional meaning extracted from sentences
Background knowledge	Literacy and prior knowledge which stem from personal response to a reading text (ruddell＆ruddell, 1995).
Reading motivation	An intellectual curiosity that helps readers make better sense of the reading text (ruddell＆ruddell, 1995).
Text interaction	A reading process whereby readers use their language knowledge including word meaning, sentence and story structure to enhance

	their understanding of the text (ruddell＆ruddell, 1995).
Comprehension strategies	Effective comprehension strategies are formed by individual tactics that successful readers employ to help them get better comprehension of the text being read (ruddell＆ruddell, 1995).
Word recognition/word analysis	Includes knowledge in lexis, phonics, and semantic meaning of words (ruddell＆ruddell, 1995).
Phonology	Spoken sounds/words (seidenberg,2007)
Semantics	Word meanings (seidenberg,2007)
Phonemic awareness	The ability to attend to the individual sounds in spoken words (adams, 1990:102).
Phonics	Ability to understand the alphabetic principle or letter-sound knowledge
Fluency	The ability to read with accuracy, speed, and prosody" (Harmer, 2015)
Vocabulary	Systematic vocabulary instruction

3. How to use / how to teach reading comprehension skills

Strategy use in second language learning (L2) is related to proficiency or achievement. Oxford (1989) noted the language being studied has an influence on the strategies used. The use of effective comprehension strategies that provide specific instructions for developing and retaining comprehension skills, with intermittent feedback, has been found to improve reading comprehension across all ages (Berkeley, 2007).

Reading different types of texts requires the use of different reading strategies and approaches. Effective reading strategies may differ for second language learners, as opposed to native speakers (Tanyeli, 2009; Iwai, 2008; Deacon, Wade, & Kirby, 2009). A good reader interacts with the text in order to develop an understanding of the information before them. Some good reading strategies are predicting, connecting,

inferring, summarizing, analyzing and critiquing. Making reading an active, observable process can be very beneficial to struggling readers.

The National Reading Panel identified positive effects only for a subset, particularly summarizing, asking questions, answering questions, comprehension monitoring, graphic organizers, and cooperative learning. The National Reading Panel also emphasized that a combination of strategies, as used in Reciprocal Teaching, can be effective (Bell, 2012).

There are many resources and activities educators and instructors of reading can use to help with reading strategies in specific content areas and disciplines.

Some examples are graphic organizers, talking to the text, anticipation guides, double entry journals, interactive reading and note taking guides, chunking, and summarizing. Some of the strategies teachers use are: reading aloud, group work, and more reading exercises (Gorrell, 2011). Children were taught reading strategies such as predicting, questioning, and summarizing one to two hours each week and they learned to pay attention to important characteristics of texts, such as the title, headings, and connectives and linking words (Muijselaar et al., 2017).

3. 1   Teaching three-stage of reading comprehension

Teaching reading comprehension strategies should be a concern of teachers in every content subject area (Wise, 2009).

In order to help students understand the reading texts, the reading instruction should be based on three-stage of comprehension (Crafton, 1982) as follow.

1)   Pre-reading stage

Students are encouraged to anticipate what they are going to meet in the text before they start reading. The teacher introduces the topic that the students will read in order to activate students' background knowledge in this stage. The use of prompts such as visuals and photos are recommended.

2)   During-reading stage

The teacher observes students' comprehension by encouraging them to self-questions in this stage. Students are involved in activities that enable them to understand the writer's purpose and to clarify the text content.

<div align="center">3)   Post-reading stage</div>

In this stage, the teacher may provide follow-up activities such as discussing the content, answering the comprehension questions, and retelling the text. Students can expand, share, and exchange information.

To conclude, students are activated what they are going to meet by using the title text and picture before they start reading. In the during-reading stage, students are guided to judge significant from insignificant information for answers to their own questions. Finally, they reflect their learning in the post-reading stage.

3. 2   **Vocabulary teaching**

Reading comprehension and vocabulary are inextricably linked together. The ability to decode or identify and pronounce words is self-evidently important, but knowing what the words mean has a major and direct effect on knowing what any specific passage means while skimming a reading material.

It has been shown that students with a smaller vocabulary than other students comprehend less of what they read (Nielsen, 2013).

It has been suggested that to improve comprehension, improving word groups, complex vocabularies such as homonyms or words that have multiple meanings, and those with figurative meanings like idioms, similes, collocations and metaphors are a good practice (Tompkins,2011).

Andrew Biemiller (2006) argues that teachers should give out topic related words and phrases before reading a book to students, teaching includes topic related word groups, synonyms of words and their meaning with the context, and he further says to familiarize students with sentence structures in which these words commonly occur (Biemiller & Boote, 2006).

Biemiller says this intensive approach gives students opportunities to explore the topic beyond its discourse - freedom of conceptual expansion. However, there is no evidence to suggest the primacy of this approach. Incidental Morphemic analysis of

words - prefixes, suffixes and roots - is also considered to improve understanding of the vocabulary, though they are proved to be an unreliable strategy for improving comprehension and is no longer used to teach students.

Practical reading strategies, styles of text.

In the last quarter of the 20th century, evidence accumulated that academic reading test methods were more successful in assessing rather than imparting comprehension or giving a realistic insight.

Instead of using the prior response registering method, research studies have concluded that an effective way to teach comprehension is to teach novice readers a bank of "practical reading strategies" or tools to interpret and analyze various categories and styles of text (Pressley, 2006).

3. 3   **General methods for beginner**

1)   Decoding, word recognition, and understanding

Foreign language learners need to develop fluent decoding, word recognition, and understanding during initial learning.

As beginners learn to associate letter shapes, names, and sounds, the teachers model specific strategies. Common examples are pointing out aspects of letter shapes or reciting the alphabet. Strategies for letter identification, decoding, oral reading, and comprehension can be embedded in dialogic reading. They are basic and elementary, but early strategies, described, modeled and supported by others, help beginners to direct their attention, choose actions, and decode print to sounds.

The progression from effortful and deliberate to the automatic use of specific actions while reading occurs at many levels—decoding, fluency, comprehension, and critical reading.

Beginning readers need to associate visual patterns of letters with their phonemic pronunciations. A hoped-for the consequence of instruction is that students' decoding progresses from deliberate to fluent actions.

When reading instruction focuses on constructing meaning, Beginning readers learn to find main ideas, to skim, and to reread first as deliberate actions and, with practice, later accomplish the same actions with less effort and awareness.

2)   Comprehension strategy instruction

Instruction for comprehension strategy often involves initially aiding the students by social and imitation learning, wherein teachers explain genre styles and model both top-down and bottom-up strategies, and familiarize students with a required complexity of text comprehension (Manzo & Manzo,1993).

After the contiguity interface, the second stage involves gradual release of responsibility wherein over time teachers give students individual responsibility for using the learned strategies independently with remedial instruction as required and this helps in error management.

The final stage involves leading the students to a self-regulated learning state with more and more practice and assessment, it leads to overlearning and the learned skills will become reflexive.

3. 4   **Highly proficient readers' Strategies**

Research studies on reading and comprehension have shown that highly proficient readers utilize a number of different strategies to comprehend various types of texts, strategies that can also be used by less proficient readers in order to improve their comprehension.

1)   Making Inferences:

In everyday terms we refer to this as "reading between the lines". It involves connecting various parts of texts that aren't directly linked in order to form a sensible conclusion. A form of assumption, the reader speculates what connections lie within the texts.

2)   Planning and Monitoring:

This strategy centers on the reader's mental awareness and their ability to control their comprehension by way of awareness. By previewing text (via outlines, table of contents, etc.) one can establish a goal for reading-"what do I need to get out of this"? Readers use context clues and other evaluation strategies to clarify texts and ideas, and thus monitoring their level of understanding.

3)   Asking Questions:

To solidify one's understanding of passages of texts readers inquire and develop their own opinion of the author's writing, character motivations, relationships, etc. This strategy involves allowing oneself to be completely objective in order to find various meanings within the text.

4)   Determining Importance:

Pinpointing the important ideas and messages within the text. Readers are taught to identify direct and indirect ideas and to summarize the relevance of each.

5)   Visualizing:

With this sensory-driven strategy readers form mental and visual images of the contents of text. Being able to connect visually allows for a better understanding with the text through emotional responses.

6)   Synthesizing:

This method involves marrying multiple ideas from various texts in order to draw conclusions and make comparisons across different texts; with the reader's goal being to understand how they all fit together.

7)   Making Connections:

A cognitive approach also referred to as "reading beyond the lines", which involves (A) finding a personal connection to reading, such as personal experience, previously read texts, etc. to help establish a deeper understanding of the context of the text, or (B) thinking about implications that have no immediate connection with the theme of the text (Gersten, Fuchs, Williams, & Baker, 2001).

3. 5   Four RS to improve the effective of reading

Four Reading Skills to improve the effective of reading are: have clear reading goals, choose the right texts, use the right reading style, use note taking techniques.

Students already use a range of reading styles in everyday situations. The normal reading style that students might use for reading a novel is to read in detail, focusing on every word in sequence from start to finish. If it is a magazine students are reading, students might flick through the pages to see which articles are of interest. When students look in a telephone directory for a particular name, students purposefully

ignore all other entries and focus students' attention on spotting the name students want. These everyday reading skills can be applied to students' studies.

3. 6   **Reading strategies**

Researchers have found that reading can be performed efficiently by using a number of different reading strategies.

Have a clear focus for students' reading. Set students' reading goals.

Survey the text before students spend the time and effort involved in detailed reading.

Scan and skim to select the text for detailed reading.

Scan and skim after detailed reading to reinforce students' understanding.

Use a form of note taking whilst reading in detail, to keep students concentrating, aid understanding and provide students with a record of students' reading.

Using clear reading goals and a variety of reading skills is more important than increasing students' reading speed. To improve students' reading speed, don't increase the speed of the eye across the page, but increase the number of words the eye recognizes in a single fixation.

To read with great efficiency and effectiveness by using a range of different reading strategies. There are some reading strategies could improve reading skill according to the materials produced by the Teaching and Learning Unit, University of Melbourne in 2010.

1)   Purposeful reading

Students need to create a purpose for reading.

Table 15

Refer to:	Create:	Consider:
• Assessment tasks	• questions based on	• what students already
• lecture slides	lectures or tutorials	know
• tutorial questions	• questions based on a	• related knowledge or
• textbook questions	skim of the text	experiences
	• (contents, headings,	

	subheadings, diagrams, introductions, etc)	

Purposeful reading of this nature can help students read faster and more selectively. It can also help students' concentration and students' ability to remember.

2) Managing vocabulary

Even if the readers are a native speaker, they may at times feel overwhelmed by the amount of unfamiliar vocabulary encounter. To build the vocabulary (discipline-specific and general), so consult glossaries and use a dictionary. Keep a list of new words: record their definitions and write example sentences that show meaning and usage. When using the dictionary, be discerning. Know which words can be ignored, and see if it is possible to guess the meanings of words.

3) Information words

There will be times when students need to do more than skim a text in the way described above, but still need to read quickly. This may require ability to conduct "surface reading". It is worth remembering that no more than 50% of the words in an average textbook are "information" words. The other words are like glue and paint: they are there to provide connections and add interest, but are not essential for meaning. If students concentrate on information words, students can read faster and with better comprehension. But, how do students learn to pick out the important information words? A large part of the trick involves paying attention to what the author is trying to say. Look for the message, and the information words will emerge naturally.

4) Phrase reading

Watch the eyes of a friend or a member of students' family while he or she is reading. Students will see that they move along each line of print in a series of jerks. The pauses between the jerks are known as annexations. It is during the annexations that students' eyes take in words. Poor readers take in only one or two words in each annexation.

5) Analytical reading

Analytical reading (or study reading) is needed when students want to make sure that they fully grasp and appreciate what they are reading. Students may have to

read statements more than once, stop to think about them, or jot down key words when using this style. As a result, students' reading rate can easily drop to below 100 words a minute.

6) Marking the text

Students could underline key words, highlight with a marker, or make notes in margins, or alternatively, or use 'post-it' labels.

This process of marking texts can help students concentrate (and keep reading!) and can help students identify key points and make the book easier to survey later when students need to use it again for their assignment or to revise for an exam. Revise effectively later.

7) Note-taking

Note-taking can help students gain deeper understanding and reflection, a better ability to remember and good exam preparation materials for later.

When taking notes, pay keep in mind the following 7 principles:

(1)   Record publication details

Always note publication details of any text students may use. Specifically, record such things as the title, author, date, publisher, place of publication, URL, and page numbers.

(2)   Preview the text before students take notes

As mentioned earlier, scan, skim and 'surface read' the text before noting to help students develop understanding of the text and awareness of what is important to note. Taking notes of everything is a slow, boring, ineffective exercise.

(3)   Maintain a central place for students' notes.

Recording notes with a computer, using flash cards, folders, or exercise books. What is important is that students will be able to find the notes and understand their layout and content a few weeks or months later.

(4)   Paraphrase and summarize ideas

Writing out sentences word for word is probably even less useful than just highlighting sentences with a marker. Sure, they will be times students need write things word for word (use quotation marks when students do this!) but better understanding will come through putting things in students' own words. Say the key

points in students' own words out loud and then write them down. Finish by checking students' paraphrase is clear and accurate.

(5)   Note students' thoughts

Don't forget the great value of noting beyond just what is said in the text. Note down such things as students' ideas, points students agree or disagree with, relevant experiences, questions, examples, and relationships with other texts. Those initial thoughts students have as students read may be of great use later, and it is a mistake to risk forgetting them.

(6)   Be creative

Consider how students should note different parts of texts as well as just what students should note. The process of thinking about how to note can aid understanding as well as ability to remember information and reflect. Depending on the nature of the information students wish to note, students may choose to use spider diagrams, concept maps, titles, columns, dot points, numbers, symbols, colors, pictures or columns for students' reflections.

(7)   Review students' notes

Once students have completed some notes, always look back at them and check: a) they are accurate, b) they are readable, c) students will be able to use them later and d) they contain full reference details.

8)   Reading strategy 8: reading with others

Consider getting a "study buddy" or study group. Be careful to keep the focus on what students need to do and students may find that by sharing notes, explaining, asking and quizzing each other, students can increase students ability to understand, reflect upon and remember key points in texts.

3. 7   Other reading systems

There are other reading systems such as P2R and SQ3R system. One great way to improve students' reading comprehension is to use the P2R system, which stands for Preview, Read Actively (includes reading, highlighting, note-taking), and Review. One such strategy for improving reading comprehension is the technique

called SQ3R introduced by Francis Pleasant Robinson in his 1946 book Effective Study (Robinson, Francis, 1978).

Since the turn of the 20th century, comprehension lessons usually consist of students answering teacher's questions or writing responses to questions of their own, or from prompts of the teacher (Pearson, 2013).

1) Survey

Survey the text before students read. Previewing a text increases the chances that students will comprehend what students read, and it is really easy to do.

Simply flip through the pages and look at the chapter title and subheadings.

When students are finished, students will have a good sense of the main ideas that the chapter will cover.

If the chapter includes an author summary, then students can read the summary as well.

Students should also look at any charts, graphs, or other images as students' survey the text.

2) Ask questions.

Generating some questions to help guide students' reading will help students to stay focused and it can also increase students' comprehension of the text. Consider the topics students encountered in students' survey of the text and use these to help students generate some questions about the reading.

Students can use who, what, when, where, and why to help students generate questions about the subheadings students encountered in students' preview.

For example, students could take the title of a subheading called "reading comprehension Strategies" and turn it into a question called "What are some effective reading comprehension strategies?"

Some instructors include reading questions for students to answer as students read. If students have been provided with a list of reading questions, then use these to help students stay focused as students read.

3) Read the text.

Next, students will need to read the text and use students' questions to help students stay focused. If students use students' questions, highlight important

information as students go, and take notes on what students have read, then students should only need to read the text once.

Make sure that students read at students' own pace and stop to take notes as needed.

4) Recite what students just read.

It is important to stop after students finish a section and put what students just read into students' own words. If students cannot do this after students have read a section, then students should reread that section again.

Try to explain the material to a friend or write a brief summary of the material. Remember to explain it in students' own words. Don't simply repeat the wording students encountered.

5) Review the material.

To keep the concepts that students have read about fresh in students' mind, students will need to review it now and then. Students do not need to reread the whole text, but students do need to go over what students underlined and review any notes that students took as well.

Try to review what students read about once or twice per week leading up to an exam. This will help to ensure that students retain the information and that students will not need to reread the whole text before an exam.

3. 8   Reading habit

Improving students' reading skills will reduce unnecessary reading time and enable students to read in a more focused and selective manner. Students will also be able to increase their levels of understanding and concentration.

It is more important to improve students' reading skills than students' reading speed. Being focused and selective in students' reading habits will reduce the time students spend reading. In addition to using a range of reading skills reading speed also needs to increase. The following technique will be of use.

The average reading speed is about 240-300 words per minute. For the average reader, the eye fixes on each word individually. It is easy for students' eye to recognize 4 or 5 words in a single fixation without a loss of understanding. The key to

increasing students' reading speed is not to increase the speed at which students' eyes move across the page, but to increase the word span for a single fixation. A simple way of developing the habit of taking in more than one word per fixation is to take a page of text and divide it length ways into three with two lines drawn down the page. Using a pen or pencil as a pointer, read each line of text by allowing students' eye to fall only in the middle of each of the three sections, as indicated by students' pointer.

Instead of the reading speed, learners concentrate on reading the line in only three fixations. As this becomes more natural, practice without drawing lines. Later, reduce the number of fixations to two per line. Once this increased word span becomes a comfortable habit, an increase in students' reading speed will occur.

3. 9 Supporting tools

1) Thought mapping

Thought mapping is a note making tool that encourages active thinking and creativity. It can help students to create plans, increase recall and save time in a wide range of study tasks. A thought map presents the key aspects of information in an ordered format that provides a clear overview of the material. And thought maps provide a powerful graphic tool which uses word, image, number, logic, color and spatial awareness. It can give students an overview of a large subject or topic area. It can gather and hold large amounts of data. It encourages active planning techniques by allowing students to see links and make connections. It is a useful memory aid. It is visually stimulating and aids concentration.

Using thought maps

Use thought maps to plan essays, reports and presentations: label points in students' linear notes with a keyword for each point in the margin; confirm structures for students' essay or report by using the keywords to create thought maps; confirm a variety of structures in thought map form until students find the plan which shows the best order for students' material.

Use a thought map in all note making tasks: it can be used to brainstorm students' initial ideas on a topic, essay or presentation; it is a quick and efficient technique for making notes from texts and other written sources; it can be

incorporated into students' lecture notes to make students' note taking an active process and to help students remember information; it can be used in seminars and tutorials to quickly record ideas and points that may arise.

Use thought maps in revision: create an overview of a topic or subject area using a thought map; condense notes into a form that is easier to remember; test students' recall by recreating from memory a thought map of students' notes. The visual image of the thought map will help students remember the information; practice planning exam answers by using a thought map. It will help students to order students' ideas and make links and connections.

Use thought maps to organize students' time: thought maps make effective 'to do' lists. They provide an overview which enables students to see what a priority is. Use color to highlight or numbers to order important tasks; before beginning a task use a thought map to make an action plan of what needs to be done; organize students' thoughts or ideas by making a thought map on a particular topic or issue. The structure of a thought map enables students to add new thoughts and ideas as they occur whilst the connecting nature of the map encourages active thinking.

2)   Note-making templates

A note-making template can help students to: make notes in a clear and readable format; remember the kind of information students want to record from each source; standardize students' notes so students can find particular elements again more easily when students come to use them.

When students have decided that a source is going to be useful and students are going to make notes on it, students need to record the full referencing details. After that there are various headings under which students may want to make notes. Here are some ideas of the kinds of headings students might choose to use.

Table 16

Main purpose of text	Suggested future research	Problem(s) encountered	Study population	Method(s) used
Useful case study	Useful example(s)	Main argument(s)	Useful material to quote	Idea(s) students can use

Supporting evidence for students' argument	Particular relevance to my assignment	Limitation(s)	Main finding(s)	Geographical / political setting
Writing style & examples	Context	Theory	Useful statistics	Justification for the research

4. How to evaluate reading comprehension skills

The assessment techniques, both traditional testing options and alternative methods (journals, portfolios, observation, homework, and self- and peer assessment) (Aebersold & Field, 1997).

Teachers commonly use formal assessments to measure content knowledge, typically in terms of factual recall and other rote learning achievements (Cizek et al., 1995; Cizek et al., 1996; Fleming & amp; Chambers, 1983); however, teachers also employ a combination of formal assessments and informal, observational assessments (Cizek et al., 1995; Cizek et al., 1996; McMillan, 2002).

A majority of teachers report that they develop their own tests, quizzes, and examinations (Cizek et al., 1995Cizek et al., 1996; Impara et al., 1993; McMillan, 2002). They create their own tests in a majority of instances; commercial publishers provide the remainder (Cizek et al., 1995; Cizek et al., 1996).

The National Reading Panel (2000) determined that young readers develop text comprehension through a variety of techniques, including answering questions (quizzes) and summarization (retelling the story).

Measures of fluent decoding, retelling, and question answering are typically used to assess reading comprehension skills, but teachers may be unsure what to do if a student scores poorly on such skills. The answer is to assess the strategies. If a student cannot retell a story, ask the student to identify the order of key events or use a graphic organizer to query if the student understands narrative elements and their relations. If students cannot answer multiple-choice questions quickly, ask them to

think aloud as they read the stem and response options and ask them to show students how they search for confirming or disconfirming evidence in the text.

Experienced teachers know how to diagnose "dis-fluency" and the lack of proficiency by checking the strategies that students should be using.

The main reason for assessing strategies is to find clues about what the student is not doing or what is being done incorrectly so that teachers can reteach better strategies. Strategy assessments are formative, and skill assessments are summative. If we use skill assessments for diagnostic teaching or fail to assess strategy use so students are given repeated cycles of the same instruction and the same assessments, we should not be surprised that students find this frustrating and unhelpful. Shared reading, guided reading, and small-group reading all provide opportunities for teachers to assess students' strategies, but it takes an insightful teacher to diagnose a student's problem from a specific error. That is why asking students to explain their thinking during or after reading provides such important insights for both teachers and students.

4.1 Instrument

To measure reading comprehension, texts of the Progress in International Reading Literacy Study (PIRLS) and two tests of the AK-Reading Comprehension test were chosen (Muijselaar et al., 2017a).. The AK-Reading Comprehension test is a series of Dutch standardized tests to measure reading comprehension in first to sixth graders (Muijselaar et al., 2017a)..

Knowledge of reading strategies was measured with the Reading Comprehension Questionnaire (Gruwel & Aarnoutse, 1995). Some studies used a reading comprehension test on which the child had to apply specific reading strategies (Cromley & Azevedo, 2006; Kozminsky & Kozminsky, 2001; Spörer et al., 2009). In other studies, questionnaires were used in which children had to report how often they used certain reading strategies (Cantrell et al., 2010; Mokhtari & Reichard, 2002; Roeschl-Heils et al., 2003; Samuelstuen & Bråten, 2005). For analyze the questionnaire, the scores of the subscales were used (Muijselaar et al., 2017a). A disadvantage of such a measure of the use of reading strategies is that children are not

able to report correctly how often they used specific reading strategies, because strategies are often used unconsciously (Muijselaar et al., 2017a).

Reading fluency was measured with a word reading task and a pseudoword reading task (Muijselaar et al., 2017a). The Eén-minuut-test (a standard test to measure word reading achievement in Dutch education) was used to measure word reading fluency, and the Klepel (a standard test to measure pseudoword reading achievement in Dutch education) was used to measure Pseudoword reading fluency (Muijselaar et al., 2017a).

Vocabulary was assessed with the Peabody Picture Vocabulary Test and the Language Proficiency Test (Muijselaar et al., 2017a).

Verbal working memory was assessed with a listening span and a reading span task (Muijselaar et al., 2017a). To recall a series of words and digits, to judge whether the sentences they listen to or read aloud were correct.

4.2 Question answering

The teachers ask questions on the same level to check the understanding of the text to learners.

In 1956, Benjamin Bloom wrote taxonomy of educational objectives: Cognitive domain to assist people to compose questions on different levels of thinking. Three domains of instructional objectives are cognitive domain, affective domain & psychomotor domain. 1) Cognitive domain related to intellectual aspects. It includes knowledge, comprehension, application, analysis, evaluation, synthesis. 2) Affective domain related to feelings. It includes receiving, responding, valuing, organizing and characterization. 3) Psychomotor domain related to action or skill. It includes imitation, manipulation, precision, articulation & naturalization. This taxonomy ranges from the simplest, the recall of knowledge, to the most complex, making judgments about the value and worth of an idea. The author used Knowledge and Comprehension to check the reading skills of the students. (1) Knowledge means the students can recall information; the verbs that approximate the particular levels of student learning are identify, describe, name, label, recognize, reproduce, follow; and (2) Comprehension means to understand the meaning, paraphrase a concept and the

key words are summarize, convert, defend, paraphrase, interpret, give examples (Bloom, Englehart, Furst, Hill, & Krathwohl, 1956).

In recent years, as educators have become increasingly focused on the accurate assessment of student learning, the original taxonomy has been revisited and revised. In 2000, Anderson and Krathwohl redefined Bloom's taxonomy by making certain changes for example rewording certain categories and the repositioning of the last two categories (Wilson, 2005). The names of six major categories were changed from noun to verb forms. As the taxonomy reflects different forms of thinking and thinking is an active process verb were used rather than nouns. The subcategories of the six major categories were also replaced by verbs and some subcategories were reorganized. The knowledge category was renamed to remembering. Comprehension was retitled to understanding in order to better reflect the nature of the thinking defined in each category. The six cognitive processes in the revised taxonomy are remembering, understanding, applying, analyzing, evaluating, and creating. These are just slightly different from the original six levels of Bloom's Taxonomy.

The teacher expected students to (a) remember factual knowledge, and (b) understand conceptual knowledge (Anderson, 2003).

To remember means retrieve relevant knowledge from long-term memory. It divided into (1) recognizing (alternative name is identifying), means locating knowledge in long-term memory that is consistent with presented material; and (2) recalling (alternative name is retrieving) means retrieving relevant knowledge from long-term memory (Anderson, Krathwohl, 2001).

Understanding means make meaning from educational materials or experiences (Anderson & Krathwohl, 2001). Understanding is the ability to make students' own meaning from educational material such as reading and teacher explanations. The following listed the meaning of understanding and the verbs to check if the students understand.

1)   Cognitive Processes , Anderson，Krathwohl (2001)

Anderson and Krathwohl (2001) revised Bloom's original taxonomy in their book, A Taxonomy for Learning, Teaching, and Assessing: A revision of Bloom's

Taxonomy of Educational Objectives, by combining both the cognitive processes and knowledge dimensions.

    According to this taxonomy, each level of knowledge can correspond to each level of cognitive process, so a student can remember factual or procedural knowledge, understand conceptual or metacognitive knowledge, or analyze metacognitive or factual knowledge.

    According to Anderson and his colleagues, "Meaningful learning provides students with the knowledge and cognitive processes they need for successful problem solving".

    Understand means construct meaning from instructional messages, including oral, written, and graphic communication. The sub-skills for this process include interpreting, exemplifying, classifying, summarizing, inferring, comparing, and explaining (Anderson & Krathwohl, 2001).

    The following charts list examples of the skills of the Cognitive and Knowledge Dimensions.

Table 17

Categories & Cognitive Processes	Alternative Names	Definition
1.Interpreting	Clarifying Paraphrasing Representing Translating	Changing from one form of representation to another
2.Exemplifying	Illustrating Instantiating	Finding a specific example or illustration of a concept or principle
3.Classifying	Categorizing Subsuming	Determining that something belongs to a category
4.Summarizing	Abstracting Generalizing	Abstracting a general theme or major point(s)
5.Inferring	Concluding Extrapolating Interpolating	Drawing a logical conclusion from presented information

	Predicting	
6.Comparing	Contrasting Mapping Matching	Detecting correspondences between two ideas, objects, and the like
7.Explaining	Constructing models	Constructing a cause and effect model of a system

2) Facet of understanding, Wiggins and McTighe (1998, 1999)

In understanding by design, Wiggins and McTighe (1998) detail the six facets of understanding as part of a curriculum design process to help foster and assess in-depth student understanding.

Table 18

Facet of Understanding	Performance verbs	What Students Do
1.Explanation	Demonstrate, derive, describe, design, exhibit, express, induce, instruct, justify, model, predict, prove, show, synthesize, teach	• Provide thorough, supportable, and justifiable accounts of phenomena, facts and data • Provide sophisticated and apt explanations and theories, which provide knowledgeable and justified accounts of events, actions, and ideas.
2.Interpretation	Create analogies, critique, document, evaluate, Illustrate, judge, make sense of, provide metaphors, read between the lines, represent, tell a story of, translate	• Tell meaningful stories • Offer apt translations • Provide a revealing historical or personal dimension to ideas and events • Create interpretations, narratives, and translations that provide meaning
3.Application	Adapt, build, create, test, de-bug, decide, design,	• Use knowledge effectively in new situations and diverse contexts

	exhibit, invent, perform, produce, propose, solve	
4.Perspective	Analyze, argue, compare, contrast, criticize, infer	• See and hear points of view through critical eyes and ears • See the big picture • Reveal a critical and insightful point of view
5.Empathy	Assume role of, be like, be open to, believe, consider, imagine, relate, role-play	• Find value in what others might find odd, alien, or implausible • Perceive sensitively on the basis of prior direct experience • Able to identify with another person's feelings and worldview
6.Self-Knowledge	Be aware of, realize, recognize, reflect, self-assess	• Have self-knowledge • Perceive the personal style, prejudices, projections, and habits of mind that both shape and impede one's own understanding • Be aware of what is not understood and why understanding is so hard • Understand how one's patterns of thought and action inform, as well as prejudice, understanding

3)   Bloom's Taxonomy Breakdown

Roles, Process Verbs & Products from Bloom's Taxonomy of the Cognitive Domain

Level of Taxonomy: comprehension

Definition: Understanding of information given. Communicating an idea or thing in a new of different forms. Qualifying ideas in relation to one's own experience.

Teacher Roles: demonstrates, listens, questions, compare, contrasts, examines.

Student Roles: explains, translates, demonstrates, interprets, active participant.

Table 19

Process verbs			Products	
Account for	Express	Paraphrase	Collection	Outline
Annotate	Give	Recognize	Debate	Quiz
Ask	Give main	Report	Definition	Recitation
Calculate	idea	Research	Dramatization	Reproduction
Convert	Identify	Restate	Example	Show & tell
Describe	Interpret	Retell	Explanation	Story problems
Discuss	Locate	Review	Label	Summary
Examples of	Locate	Summarize		Test
Expand upon	Observe	Tell		
	Outline			

Levels of reading comprehension

Richard, Platt and Weber (1985, p.238) defined reading comprehension as the understanding resulted from perceiving a written text. The levels of understanding were divided in different ideas of educators as follows:

As teachers we tended to ask questions in the "knowledge" category 80% to 90% of the time.

Below were the question categories as defined by Bloom (1956).

Knowledge

The knowledge category of Bloom's Taxonomy was the simplest level for students. Here, students were required to express some form of knowledge that they had gained from the lesson that was taught. At this level, students focused on direct recall of information.

Knowledge was the lowest level of Bloom's Taxonomy. It formed the base of a pyramid of reasoning skills that students exhibit as they learn. It was an important foundation for future learning. However, many teachers did not move their students too far beyond this level. Knowledge level aimed to test the basic understanding as remembering, memorizing, recognizing, recalling identification and recall of information.

Type of questions like who, what, when, where, how and description as well as the verbs such as recall, describe, define, identify, tell list label name, were normally used to ask questions in knowledge level.

Comprehension

The comprehension level was where students began to show that they understood the meaning of what they had learned. Comprehension moved beyond the basic parroting of facts found at the knowledge level. However, students had not begun applying what they had learned at this point. As such, it was a key foundation to learning. Comprehension level aimed to assess the basic understanding as interpreting, translating from one medium to another, describing in one's own words, organization and selection of facts and ideas retelling. Type of useful verbs in the questions such as translate, understand, give examples, distinguish, estimate, explain, generalize, interpret, outline, discuss, restate, describe, compare and rewrite are normally used to assess students' knowledge in knowledge level.

Smith (1963, p. 262) categorized the comprehension levels into three levels: literal comprehension, interpretation and critical reading.

Burmeister (1974, p.4) explained levels of comprehension based on Bloom's taxonomy as follows: memory level, translation level, interpretation level, application level, analysis level, synthesis level, evaluation level.

Mangieni, Bader and Walker (1982, p.63) was similar to Barrett (1968), literal understanding, infernal comprehension, critical comprehension/evaluation, appreciative/creative comprehension

The above ideas were similar in details. For example, the seven levels of Burmeister's idea were subdivided based on the six levels of comprehension of Bloom. Smith's idea comprised three main levels that covered some of Burmeister and Bloom' ideas. In this study, the researcher adopted the six level of comprehension based on Bloom's taxonomy.

This study focused on the effectiveness of using the new instructional model to help improve L2 reading comprehension. Thus, control group and experimental group were used to compare the different scores between before and after teaching through this new instructional model. The questions in Pre- test and Posttests assessing the

levels of comprehension contained types of questions, key words and verbs based on the above level descriptions of Bloom.

4) Questions for Understanding, Pohl (2000)

Questions for Understanding,

• Can students write in students' own words?

• How would students explain?

• Can students write a brief outline...?

• What do students think could have happened next...?

• Who do students think...?

• What was the main idea...?

• Can students clarify?

• Can students illustrate?

• Does everyone act in the way that … does?

5) Examples of questions in the taxonomy for Comprehension, Dalton and Smith (1986)

Dalton and Smith (1986) provided students with the following examples of questions in the taxonomy for Comprehension:

Table 20

Useful Verbs	Sample Questions
·Explain	·Can students write in students' own words...?
·Interpret	·Can students write a brief outline...?
·Outline	·What do students think could have happened next...?
·Discuss	·Who do students think...?
·Distinguish	·What was the main idea...?
·Predict	·Who was the key character...?
·Restate	·Can students distinguish between...?
·Translate	·What differences exist between...?
·Compare	·Can students provide an example of what students mean...?
·Describe	·Can students provide a definition for...?

4.3 Think aloud

One technique that does not rely on a multiple-choice format and attempts to measure comprehension as it happens is to have readers "think aloud" as they progress through a text (Chi, Bassok, Lewis, Reimann, & Glaser, 1989; Coté & Goldman, 1999; Magliano, Trabasso, & Graesser, 1999; Olson, Duffy, & Mack, 1984; Pressley & Afflerbach, 1995; Whitney, Ritchie, & Clark, 1991; Zwaan & Brown, 1996). In a think-aloud methodology, readers are asked either to verbally report or to write whatever thoughts come to mind after reading a sentence (Shuy, McCardle, & Albro,2006). Thinking aloud in this way reveals what information from the prior text of the passage and from the reader's world knowledge is consciously available in working memory and 'codeable' in language (Ericsson & Simon, 1993).

Think-aloud protocols have been shown to reveal memory operations (Trabasso & Magliano, 1996a), inferences (Magliano, 1999; Magliano et al., 1999; Trabasso & Magliano, 1996b), reading strategies (Coté & Goldman, 1999; Coté, Goldman, & Saul, 1998), problem-solving strategies (Chi et al., 1989; Collins, Brown, & Larkin, 1980), and metacognitive strategies (Pressley & Afflerbach, 1995) that give rise to comprehension.

The goal for most discourse psychologists is to have think-aloud instructions uncover thoughts that would most likely be produced when reading silently. To get participants to produce information that is most available in working memory and can be articulated (Ericsson & Simon, 1993). As such, readers are instructed to produce information that is immediately available to them and is discouraged from elaborating beyond that information. Instructions in the context of reading typically involve asking participants to report whatever thoughts they have immediately after reading the sentence in terms of their comprehension of the text (Magliano & Millis, 2003; Magliano et al., 1999; Suh & Trabasso, 1993; Trabasso & Magliano, 1996a; Zwaan & Brown, 1996).

Types of reading comprehension skills assessed

To assess comprehension skills, the test writers or teachers should aware of what reading comprehension is initially. Teachers usually assign students to read

written texts in order to know whether students understand those texts. The understanding is abstract but teachers can assess it through the reading comprehension questions which are contained in the test tasks.

Alderson and Lukmani (1989) point out some taxonomy of such skills which can be used as the purpose of the test as follows:

1. "The recognition of words and phrases of similar and opposing meaning

2. The identifying or locating of information

3. The discriminating of elements or features within context; the analysis of elements within a structure and of the relationship among them -e.g., casual, sequential, chronological, hierarchical

4. The interpreting of complex ideas, actions, events, and relationships

5. Inferring-the deriving of conclusions and predicting the continuation

6. Synthesis

7. Evaluation" (in Cohen, 1994)

Principles for assessing L2 reading comprehension

What the good test constructor should have in mind after choosing the method to assess L2 reading comprehension ability for the test takers is considering the principles.

Cohen (1994) highlights some principle-based largely on Swaffar, Arens, & Byrnes, (1991) as follows:

1. Select a text with a familiar and interesting topic, unambiguous intent and appropriate length. Cohen (1994) states "Sometimes "doctoring" the text can help to clarify a confusing message, while at other times lexical simplification can produce ambiguity in the text." (p. 250)

2. Using the respondent's L1 for doing some or extensive conceptualizing is allowed wherever appropriate.

3. Determine the reasoning behind the students' answers.

4. Design the assessment tasks in order to allow students to demonstrate their background knowledge concerning the content, textual organization, and language of the given text (s).

5. Be flexible about acknowledging individual interpretations that students may have for texts.

Methods for testing reading comprehension

Cohen (1994) categorizes the methods for testing reading clearly as follows:

1. Communicative tests (speaking/writing test); storyline test;

2. Fixed-response format: multiple choice and alternatives to it;

3. Structured-response formats: the cloze, the C-test, and recall protocols;

4. Testing of vocabulary; and

5. Computer-based testing

Selecting one or more than one method depends on the constructor's consideration whether it works well for the test takers.

In this study, the researcher will focus on one of the fixed-response formats, that is, multiple choice for assessing reading comprehension skills as this type of task is commonly used in schools or occasions and especially the constructing of good multiple-choice items is not an easy job.

Conclusion

In this research, reading comprehension skills were measured with reading test, and the students can explain identify and recognize, summarize and interpret.

4.4 Assessment

One of the teacher's roles apart from providing efficient instruction is to assess students' achievement (Grant, 1987). As Brown (2004) states, assessment is the process of measure that is done by the teacher whenever students practice language skills. Caldwell (2007) informed that assessment can happen at any point in a lesson.

For reading comprehension, a passage is presented to the reader, which they must read either silently or out loud. Then a series of questions are presented that test the reader's comprehension of this passage.

There are informal and formal assessments to monitor an individual's comprehension ability and use of comprehension strategies (Tompkins, 2011). Informal assessments are generally through observation and the use of tools, like story boards, word sorts, and interactive writing. Many teachers use Formative assessments to determine if a student has mastered content of the lesson. Formative assessments can be verbal as in a Think-Pair-Share or Partner Share. Formative Assessments can

also be Ticket out the door or digital summarizers. Formal assessments are district or state assessments that evaluates all students on important skills and concepts. Summative assessments are typically assessments given at the end of a unit to measure a student's learning.

Assessment is divided into two types (Brown, 2004). The first type is informal assessment. The form of this assessment is incidental, unplanned comment or responses or impromptu feedback to the students. Teacher did not design the assessment first. Additionally, commenting on students' paper, and correcting students' pronunciation are included in this type. The second type is formal assessment. Teacher prepares some exercises to assess students' ability such as quizzes, assignments, and examinations. The assessment must be chosen carefully. When students are taking a reading test, the effect can be both increasing and decreasing students' comprehension.

The teacher can use some reading assessments that are proposed by Alderson (2000). There are seven types of reading assessment: integrative test, the cloze test and gap-filling test, multiple-choice techniques, matching techniques, dichotomous techniques, short-answer techniques, and the summary test.

Assessing Reading Comprehension

Because comprehension failures can lead to school failures, there has been an increased interest in trying to assess and understand comprehension (Group, 2002).

1)   Recognizing words

Reading is a way of recognizing letters and words and being able to get meanings from the text. In this regard, Ezc (2006) argues that, when one reads, she/he combines the same letters which can be used to form the different words with different meanings in other languages. Reading is the process of decoding written symbols for the purpose of making meaning or getting information.

Performance on both British tests of reading comprehension-the Neale Analysis of Reading Ability and the Suffolk Reading Scale-was influenced by decoding skill, and a cloze-test (sentence completion) format essentially measures word recognition skill (Nation & Snowling, 1997). There was a stronger relationship

between decoding and comprehension when comprehension was assessed with a cloze test than with multiple-choice questions (Francis et al., 2005).

2)   EFL context

Reading skill has to be mastered, as good reading skills help students develop learning in many other fields of study (Anderson, 1999).

According to this definition, reading refers to cognitive activities such as the decoding process of syntactic, semantic, and pragmatic knowledge that readers use while reading a text.

When it is all boiled down, those cognitive activities involve a reader, a text, and the interaction between a reader and a text (Aebersold & Field, 1997; Taverner, 1990; Urquhart, & Weir, 1998).

Reading and reading comprehension in an EFL context

Reading is a cognitive activity of readers, which includes the process of decoding syntactic, semantic, and pragmatic knowledge while reading a text.

According to communication theory, to construct meaning, such cognitive activities require a reader, a text, and the interaction between a reader and a text.

While reading, a reader employs cognitive skills:

Guessing, predicting, confirming, correcting, hypothesizing, drawing inferences, analyzing, synthesizing and strategizing to understand the text being read.

The employed strategies facilitate the interaction between reader and text.

This connection between the reader and the text leads to cognitive integration of the content (Aebersold & Field, 1997; Barnett, 1989; Taverner, 1990; Urquhart & Weir, 1998).

Reading refers to the linkage between the reader, content of the reading text, and the interaction between a reader and a text.

The relationship of two factors can be explained as follows.

A reader is one factor in the reading process.

Readers are different in bringing individual experience to read the text.

They use experienced and learned back ground knowledge which they have had since they were born to be a base of reading.

In addition, they employ the whole experiences they took from their families, communities, schools, societies, and cultures to help comprehend the texts being read.

Another factor in the reading process is the texts which include varieties such as books, labels, signs, television advertisements and so on.

Readers need to perceive the differences between the language used in each written form, grammar, linkage, and vocabularies.

These differences lead to different reading methods.

Aebersold and Field (1997) note that while reading, readers interact with the reading text, applying aspects of knowledge such as content, formal knowledge, and linguistic knowledge.

The interaction between a reader and a text constantly changes, depending upon the readers' comprehension.

That is, if readers possess complete knowledge of what they read, they can better understand that text.

3) Reading process

A generally-accepted principle is that reading focuses on the cerebral process rather than test scores.

This approach is similar whether it involves reading a first language or subsequent language, as reading in both cases is an interactive process.

This interactive process focuses on interaction between the reader and the reading text in order that the reader can construct meaning from what is being read.

The reader is the most important component of the process.

The experts of language teaching call this a reader–based (or conceptually-driven) reading process.

They believe that reading objectives, cognitive skills, language competency, strategy, and background knowledge are involved in creating understanding rather than letters, grammar, and semantic structure in the reading text. Irwin (1991) explains that while reading there are five concurrent processes.

These include:

1) Micro processes refer to processes whereby readers find out the meaning of a subunit of each sentence and later make a decision as to which subunit should be remembered.

2) Integrative processes refer to processes whereby readers form an understanding, linking between sub units, and integrating those.

3) Macro processes refer to processes whereby readers conclude an idea from the text. These processes require analysis and reordering of ideas as into the main idea and details.

4) Elaborative processes refer to processes where by readers infer, extend, or interpret the meaning beyond what exists in the text, such as prediction, integrated background knowledge, imagination, process of high order thinking, and emotional response to the reading text.

5) Meta-cognition processes refer to processes where by readers are aware and control the cognition consciously. Readers should know which part of the reading text they do not understand, what strategy they should employ to solve the problems or how to adjust existing reading strategies to help them gain a better understanding of that part.

Reading Test

Common reading test

Three tests commonly used in the United States (the Wechsler Individual Achievement Test reading comprehension subtest, the Gates-MacGinitie Reading Test, and the Gray Oral Reading Test) (Cutting & Scarborough, 2006).

Constructing reading comprehension tests

The test formats used in constructing reading comprehension tests are (a) whether reading is oral or silent, (b) the length of the passage, and (c) the particular type of comprehension assessment (Keenan et al., 2008). The reading comprehension tests in the battery are the Gray Oral Reading Test–3 (GORT)(Wierdholt & Bryant, 1992), the Qualitative Reading Inventory–3 (QRI) (Leslie & Caldwell, 2016); the Woodcock–Johnson Passage Comprehension subtest (WJPC) from the Woodcock–Johnson Tests of Achievement–III (Woodcock et al., 2001), and the Reading Comprehension subtest from the Peabody Individual Achievement Test (PIAT) (Dunn

& Markwardt, 1970) which is identical in format to the PIAT-R and PIAT-R/NU (Markwardt, 1989). The range of test format options are silent reading (two) and oral reading (two); The passage length varies from a single sentence to long passages up to 785 words; The types of tasks used to assess comprehension include (a) picture selection in the PIAT, where the child must select from among four pictures the one that best represents the meaning of the sentence just read; (b) the cloze technique in the WJPC, wherein the child is presented with a text in which one word is omitted and the child demonstrates understanding by providing the missing word; (c) multiple-choice comprehension questions in the GORT; (d) open-ended, short-answer questions in the QRI, some of which are literal and some inferential; and finally, because the QRI involves two assessments of comprehension, (e) retelling the passage in the QRI (Keenan et al., 2008).

Table 21The instrument to evaluate reading skills (Muijselaar et al., 2017)

Component	Instrument	Content	Items	Analysis
Reading comprehension (focus on and retrieve, infer, interpret and integrate, examine and evaluate)	PIRLS (Primary G4/5, Dutch, 1 year)	3 narrative and expository texts (814 and 920 words each)	Multiple-choice and open-ended questions, 13-16 questions	
	AK- Reading Comprehension test 456 (Fourth, fifth, and sixth graders)	7 short narrative and expository texts (test 4 122-288 words, test 56 164–281 words each)	True/false or multiple-choice; test 4, 44; test56, 40 questions	

Reading strategies	Questionnaire	Questions (monitoring, word, text), 30 items	Choose response	Subscales
Reading fluency	Eén-minuut-test （Brus＆Voeten，1979)	116 words (1-5 syllables each)	Read 1 min	The mean parallel-test reliability is .90
	Klepel (van den Bos et al., 1994).	116 pseudowords (1-5 syllables each)	Read 2 min	The reliability coefficient (rtt) was .89
Vocabulary	Peabody Picture Vocabulary Test (Dunn & Dunn, 1997)，Dutch version (Schlichting，2005)	Underline the pictures, 72 items	Choose (One out of four)	Cronbach's alpha was .66.
	Language Proficiency Test (Verhoeven & Vermeer, 1986).	Synonym for a word in sentence, 50 items	Choose (One out of four),	Cronbach's alpha was .82
Working memory	Word span task	2-9 monosyllabic words	Recall	Cronbach's alpha was .56
	Digit span task	2 to 9 digits	Recall	The reliability was .74
	Listening span	2-5 sentences	Judge correction,	Cronbach's alpha

		(each has 3-7 monosyllabic words)	recall words	was .63
	Reading span		Read aloud, judge correction, recall words	Cronbach's alpha was .69

2.5 Attitude toward reading

In psychology, attitude is a psychological construct, a mental and emotional entity that inheres in, or characterizes a person (Richard, Perloff, 2016). They are complex and are an acquired state through experiences. It is an individual's predisposed state of mind regarding a value and it is precipitated through a responsive expression towards a person, place, thing, or event (the attitude object) which in turn influences the individual's thought and action. Attitude may influence the attention to attitude objects, the use of categories for encoding information and the interpretation, judgment, and recall of attitude-relevant information (Vogel,2014) Attitudes can guide encoding information, attention, and behaviors, even if the individual is pursuing unrelated goals. Prominent psychologist Gordon Allport described this latent psychological construct as "the most distinctive and indispensable concept in contemporary social psychology" (Allport, Gordon, 1935). Attitude can be formed from a person's past and present (Allport, Gordon, 1935), ranging from extremely negative to extremely positive.

Relationships between students' attitudes toward reading and the development of reading skills have already been explored. Researchers examine attitude toward reading (McKenna et al., 1995, 2012; Clark and De Zoysa, 2011; Clark, 2014). A moderate relationship exists between reading attitudes and achievement (Petscher, 2010). The strong relation emerged between attitudes toward recreational reading in fourth grade and achievement on the reading test (Martinez et al., 2008)

1.   Definition

Social psychologists define attitudes as 'enduring systems of positive or negative evaluations, emotional feelings, and pro or con action techniques with respect to social objects' (Krech, Crutchfield & Ballachey, 1962: 29).

Rokeach defines attitude to be 'a relatively enduring organization of beliefs around an object or situation predisposing one to respond in some preferential manner' (Rokeach, 1979: 105).

Ajzen, focusing more on attitudes as explaining human behavior, holds that 'an attitude is a disposition to respond favorably or unfavorably to an object, person, institution, or event' (Ajzen, 1988: 4).

Likewise, Baker describes attitude as 'a hypothetical construct used to explain the direction and persistence of human behavior' (Baker, 1992: 10).

Educational psychologist Klausmeier similarly holds that attitudes 'are learned, emotionally toned predispositions to behave in a consistent way toward persons, objects, and ideas. Attitudes have both an affective component and an informational component' (Klausmeier, 1985: 403).

Eagly and Chaiken, define an attitude as "a psychological tendency that is expressed by evaluating a particular entity with some degree of favor or disfavor"(Eagly et al, 1998).

Jung's definition of attitude is a "readiness of the psyche to act or react in a certain way" (Jung, 2004) The presence of two attitudes is extremely frequent, one conscious and the other unconscious (Jung, 2004; Main, 2004).

Attitude has been defined as a "learned predisposition to respond in a consistently favorable or unfavorable manner with respect to a given object" (Fishbein and Ajzen,1975, p.6), the term object referring to either entities (people, groups) or behaviors (e.g., reading) (Ajzen and Fishbein, 2005).

Attitudes in foreign language education

The term 'attitude' in foreign language learning is generally used to refer to the attitude of the learners towards the target language society (Brown, 1994; Lightbown & Spada, 1999; Littlewood, 1984: 55; McLaughlin, 1987;).

Klausmeier notes that 'attitudes influence how well students learn and how they behave' (1985: 375), he insists on the importance of teachers' attitudes towards students in facilitating learning.

This attitude towards the target society is 'a factor of learners attitudes toward their own native culture, their degree of ethnocentrism, and the extent to which they prefer their own language over the one they are learning as a second language' (Brown, 1994: 168).

Reading attitude is "a system of feelings related to reading which causes the learner to approach or avoid a reading situation" (Alexander and Filler, 1976: 1)

or "a state of mind, accompanied by feelings and emotions, that make reading more or less probable" (Smith, 1990: 215).

The attitude in this study referred to the attitude towards the Japanese language reading among university students. Enduring systems of positive or negative evaluations of Japanese reading.

2.   Component / Type / Factor

This part presents attitude structure and vary types.

2.1 Component

The classic, tripartite view offered by Rosenberg and Hovland (1960) is that an attitude contains cognitive, affective, and behavioral components.

According to Breckler (1984), the cognitive component of attitude refers to the beliefs, thoughts, and attributes that we would associate with an object. Many times a person's attitude might be based on the negative and positive attributes they associate with an object. It sets the stage for the more critical part of an attitude-its affective component, the cognition and affect are intertwined (Robbins, S. P., & Judge, T. A., 2018).

The affective component of attitude refers to people's feelings or emotions linked to an attitude object (Breckler, 1984). Affective responses influence attitudes in a number of ways. For example, many learners are afraid of reading a foreign language text. So, this negative affective response is likely to cause the learners to

have a negative attitude towards language studying. Affect can lead to behavioral outcomes (Robbins, S. P., & Judge, T. A., 2018).

The behavioral component of attitude refers to the way the attitude we have influenced how we act or behave (Breckler, 1984), it describes an intention to behave a certain way toward someone or something (Robbins, S. P., & Judge, T. A., 2018).

Although we often think cognition causes affect, which then causes behavior, in reality these components are difficult to separate (Robbins, S. P., & Judge, T. A., 2018). Some views of attitude structure see the cognitive and behavioral components as derivative of affect or affect and behavior as derivative of underlying beliefs (Fazio, R. H., & Olson, M. A., 2003).

2.2 Type of attitude

1) Type of attitude

Attitudes very often come in pairs, one conscious and the other unconscious (Jung, 2004; Main, 2004).

Extraversion and introversion. This pair is so elementary to Jung's theory of types that he labeled them the "attitude-types".

Rational and irrational attitudes. "I conceive reason as an attitude" (Main, 2004).

The rational attitude subdivides into the thinking and feeling psychological functions, each with its attitude.

The irrational attitude subdivides into the sensing and intuition psychological functions, each with its attitude. "There is thus a typical thinking, feeling, sensation, and intuitive attitude" (Main, 2004).

Individual and social attitudes. Many of the latter are "isms".

As Baker notes, 'observation of external behavior may produce miscategorization and wrongful explanation. Such behavior may be consciously or unconsciously designed to disguise or conceal inner attitudes' (Baker, 1992: 15).

In addition, Jung discusses the abstract attitude. "When I take an abstract attitude..." (Main, 2004) Abstraction is contrasted with concretism. "Concretism. By

this I mean a peculiarity of thinking and feeling which is the antithesis of abstraction"
(Main, 2004).

2) Type of language attitude

Baker (1992), coming to his extensive studies on language attitudes from his
interest in bilingualism and the conservation of minority languages, lists various
attitudes of interest to foreign language learning research: a) attitude to language
variation, dialect and speech style; b) attitude to learning a new language; c) attitude
to a specific minority language (e.g. Irish); d) attitude to language groups,
communities and minorities; e) attitude to language lessons; f) attitude to the uses of a
specific language; g) attitude of parents to language learning; h) attitude to language
preference (Baker, 1992: 29).

Larsen-Freeman & Long (1991), examining a variety of research on attitudes
in second language learning and foreign language learning, identify the following
areas: a) Parents: parents' attitudes towards the target language community affect not
only children's attitudes but also achievement; b) Peers: the attitudes of peers affects
learners' acquisition of a second language; c) Learning situation: the learners'
attitudes towards the learning situation affect their degree of success; d) Teachers:
teachers' attitudes towards learners affect the quality and quantity of the learning
which takes place; e) Ethnicity: ethnicity can determine attitudes and behavior toward
members of other groups, and these in turn might affect achievement (1991: 178-180).
Klausmeier notes that 'attitudes influence how well students learn and how they
behave' and he insists on the importance of teachers' attitudes towards students in
facilitating learning (Klausmeier, 1985: 375). Any policy for language, especially in
the system of education, has to take account of the attitude of those likely to be
affected (Lewis, 1981), whether that policy is at the level of educational institutions or
of government.

2.3 Factors to format attitudes

Psychological, family, society, economic play important roles in formatting the
attitudes of an individual.

1) Psychological

The attitude of a person is determined by psychological factors like ideas, values, beliefs, perceptions, etc. All these have a complex role in determining a person's attitude. Values are ideals, guiding principles in one's life, or overarching goals that people strive to obtain (Maio & Olson, 1998). Attitude is the result of multiple episodes involving the object, each episode shaping the individual's beliefs about this object (e.g., fun, or rather uninteresting; Fishbein & Ajzen, 1975).

2) Family

Family plays a significant role in the primary stage of attitudes held by individuals. Initially, a person develops certain attitudes from his parents, brothers, sister, and elders in the family. There is a high degree of relationship between parents and children in attitudes found in them.

3) Society

Societies play an important role in formatting the attitudes of an individual. The culture, tradition, language, etc., influence a person's attitudes and teach individuals what is and what is not acceptable.

This attitude towards the target society is 'a factor of learners attitudes toward their own native culture, their degree of ethnocentrism, and the extent to which they prefer their own language over the one they are learning as a second language' (Brown, 1994: 168).

Most learners have almost no direct contact with the Japanese society and the classroom is almost the only place learners directly encounter the Japanese.

4) Economic

A person's attitude also depends on issues such as his salary, status, work environment, work as such, etc.

An attitude contains cognitive, affective, and behavioral components. The attitude in this study refers to the attitude toward reading. The factor to format attitudes toward reading in this study refers to the classroom. The evaluations toward teachers, Japanese language learning, and class activities may affect attitudes toward Japanese reading.

2.4 The factors little affect reading attitudes

Some elements have little affect the attitude toward reading. The results of the researches about the elements are contradictory.

Medium- As far as academic reading is concerned, reading attitudes remain the same, whatever the medium (digital or print reading; McKenna et al., 2012).

Gifted students-The results suggested that attitude differences across schooling vary little between students gifted or not in elementary school to middle or secondary school (Anderson et al., 1985).

Sex-As shown by a number of studies, attitudes toward reading vary significantly according to grade, but also according to sex, with girls expressing more positive views, both in elementary school (McKenna et al., 1995; Sainsbury and Schagen, 2004; Worrel et al., 2006; Logan and Johnston, 2009; Graham et al., 2012; Clark, 2014; McGeown et al., 2015) and in middle school (Swalander and Taube, 2007; McKenna et al., 2012). Exactly how these sex-related differences in reading attitudes change across the elementary and middle/secondary levels seems to depend on the reading goal, although results have so far been contradictory. McKenna et al. (1995), for instance, found that girls' and boys' attitudes toward academic reading changed to the same extent during elementary school, with these attitudes becoming less positive with each successive academic year. In a longitudinal study, Kush and Watkins (1996) undertook a survey of 190 pupils in Grades 1 to 4. They failed to find any difference between girls and boys in their attitudes toward academic reading.

Some authors claim that reading attitudes depend on the nature or goal of the activity (McKenna et al., 1995, 2012; Lazarus and Callahan, 2000; Ivey and Broaddus, 2001), their studies of reading attitudes have distinguished between academic and leisure reading (McKenna et al., 2012; Conradi et al., 2013). Academic reading often means reading imposed by a teacher in a school setting and leisure (or recreational) reading is the reader decides when and what to read.

3.   How to manage attitude

The positive attitudes toward language learning benefit to the performance of students. Many studies have reported negative attitudes toward reading in elementary

school (McKenna et al., 1995; Hogsten & Peregoy, 1999) and middle school (McKenna et al., 2012; Ley et al., 1994). Whereas pupils starting school had generally positive attitudes, by the end of elementary school, these had been replaced by indifference and even negativity (McKenna et al., 1995; Hogsten & Peregoy, 1999). Middle-school readers' attitudes toward academic reading are generally negative (McKenna et al., 2012; Ley et al., 1994).

3.1 The elements that promote and sustain positive attitudes

The affective influence of the target language (Japanese) is revealed by the different attitudes displayed by learners at various proficiency levels, which showed increasing levels of self-belief as proficiency increased (Grainger, 2005). The high difficulty level of Japanese triggers strong affective emotions, which affect linguistic performance (Grainger, 2005). Researchers examine how learning to read is impacted by affective factors such as literacy interest (Hume et al., 2015), engagement (De Naeghel et al., 2012), motivation (Gambrell et al., 1996; Baker and Wigfield, 1999; Guthrie et al., 1999; Anmarkrud and Braten, 2009; Becker et al., 2010).

1) Social settings (literature and culture)

In foreign language learning, Gass & Selinker (2001) discuss the changes of attitudes over time in terms of the difference of social settings. Children who have virtually no exposure to other cultures changing their attitudes toward speakers of other languages after learning more about the literature and culture of the speakers of that language (Gass & Selinker, 2001: 355).

If learners like the target culture, they are likely to form positive attitudes towards second language (L2) speakers (McEown, Noels, & Saumure, 2014). In foreign language contexts where there are few opportunities to establish contact with L2 speakers, exposure to L2 cultural products such as films, videos, and music play a salient role in indirectly familiarizing L2 learners with the L2 community and shaping their L2 attitudes (Dornyei, Csizer, & Nemeth, 2006, p.15). In Hong Kong, Humphreys and Miyazoe-Wong's mixed methods study (2007) found that attitudes to

the Japanese language, people and cultural products were the top reason for majoring in Japanese. Nomura and Yuan's narrative study (2018) reported that interest in Japanese popular culture was the major initial reason to learn Japanese. In mainland China, a large-scale study (Gao & Lv, 2018; Lv, Gao, & Teo, 2017) explored Japanese as a foreign language motivation despite increasing anti-Japanese sentiments. The particular interest in (popular) culture was a way into Japanese as a foreign language learning interest (de Burgh-Hirabe, 2019). It was found that the more the learners gained knowledge about and the first-hand experience with Japan, the more their motivation was enhanced.

The learners developed an interest in Japan during overseas experiences, such as for sports, which sparked interest in learning Japanese (de Burgh-Hirabe, 2019). It may be a good idea to increase exchange or field trip opportunities before people start tertiary education in order to create interest in foreign language learning (de Burgh-Hirabe, 2019).

Brown suggests that 'negative attitudes can be changed, often by exposure to reality - for example, by encounters with actual persons from other cultures' (Brown, 1994: 169). In China, where the vast majority of people have little or no direct contact with the culture or members of the Japanese-speaking world, it is therefore probable that there is considerable scope for change in learner attitudes.

2) Motivation

Finocchiaro suggests even more broadly that 'the attitudes of students, teachers, community members, peers, and others with whom the student comes into contact' all are causal factors for motivation (Finocchiaro, 1989: 48). The study showed that the participants had enjoyable Japanese learning experiences in and beyond the classroom that sustained their motivation for studying Japanese (de Burgh-Hirabe, 2019). This underlines the need for teachers to create learning environments that keep students motivated (Hadfield & Dornyei, 2013) and informing students about non-classroom activities. Engaging directly with students can also reveal what students enjoy, including affordances provided through digital technologies for L2 learning (Ushioda, 2011).

3) Emotion

Much of attitude research emphasized the importance of affective or emotional components. Emotion works hand-in-hand with the cognitive process, or the way we think, about an issue or situation.

Important factors that influence the impact of emotion appeals include self-efficacy, attitude accessibility, issue involvement, and message/source features.

Self-efficacy

Self-efficacy is a perception of one's own human agency; in other words, it is the perception of our own ability to deal with a situation. It is an important variable in emotion appeal messages because it dictates a person's ability to deal with both the emotion and the situation.

4) Other elements

Clear learning purpose-Learners who show an awareness of learning targets obtain better achievement test results than students who demonstrate a lack of such awareness (Leow, 2000).

Learning strategy- Unfamiliarity with the orthographic systems in Japanese often ap-pears to create major affective as well as cognitive barriers for the learners to over-come (Samimy & Tabuse, 1992).

The link between reading habits and attitudes are well documented (Ley et al., 1994; Keskin and Bastug, 2014).

These elements promote positive attitudes. Using related class activities to promote positive attitudes toward reading. To sustain positive attitudes toward reading through learning more about the literature and culture of Japan, through class activities to keep students actively.

3.2 Changing negative attitude

Attitude change is possible. To change negative attitudes toward reading are important for university students.

While being 'enduring' is one of the characteristics of attitudes (Rokeach, 1979: 105), it is surely vital to determine how something strongly determinative of academic achievement can alter - from a negative to a positive attitude, and vice versa. One obvious entry into this field is through Klausmeier's comment that attitudes 'have both an affective component and an informational component' (1985: 403). Alterations to the informational component - that is, gaining new information about the object in question - can alter attitudes. Indeed, Klausmeier holds that 'people's attitudes are less permanent than our understanding of concepts and principles' (Klausmeier, 1985: 377).

Attitudes are part of the brain's associative networks, the spider-like structures resid-ing in long-term memory that consist of affective and cognitive nodes. By activating an affective or emotion node, attitude change may be possible. Since we cannot see into the brain, various models and measurement tools have been constructed to obtain emotion and attitude information. Measures may include the use of physiological cues like facial expressions, vocal changes, and other body rate measures.

1) Emotion

Emotion is a common component in attitude change. Changing attitudes toward reading through change negative emotions can improve reading comprehension skills. Three of the learning-centered emotions -boredom, frustration, confusion- need some attention. The students give judgments on their states of emotions by self-report. The teachers to track the emotions of readers and make interventions.

Boredom

The reader becomes bored when the text is not delivering relevant information to the reader's needs. The material may be too dense and beyond the reader's zones of abilities, so the reader gets pie eyed and tunes out. On the flip side, the text may be so easy that the reader's mind wanders (Smallwood & Schooler, 2007). There are three approaches to handling boredom. One way is to present materials at a more intelligent level of text difficulty. There can be engaging environments with games, multimedia,

or intrinsically interesting texts (Millis et al., 2011). The student can be put in a productive mindset that motivates them through choice, the importance of the material, or alignment with their interests (Pekrun et al., 2010). Some bored students need increasing challenges whereas others need easier materials to build self-efficacy. There needs to be a mesh between the complexity of the texts and the readers' abilities. Boredom is expected to be less likely when the reading times of readers for sentences/paragraphs are aligned with the complexity of the sentences/paragraphs. Complexity can be measured in an overall scale (such as Lexiles). Many teachers perceive students as being engaged when the students view themselves as bored because boredom is not manifested on the face, but rather the context and dynamics of body posture. In contrast, confusion is very much manifested on the face.

Frustration

Readers in some academic contexts do not have the option of disengaging from the text. Forced-fed reading can be frustrating when the material is incoherent, arcane, tedious and irrelevant to the reader's goals. The reading experience is influenced by text characteristics (Graesser, McNamara, & Kulikowich, 2011) and the relevance of the material to the reader's goals (McCrudden & Schraw, 2007). Frustration may occur when there is a clash between academic assignments, texts, and reader goals. Frustrated students may be helped by clear goals that address the sources of frustration.

Confusion

Students experience confusion when cognitive disequilibrium arises from obstacles to goals, contradictions, anomalous information, uncertainty, text cohesion gaps, and obvious gaps in knowledge. Some students attribute the confusion to their poor abilities in mastering the subject matter whereas others take up the challenge and apply thoughtful effort to conquer the confusion (Dweck.2002; Meyer & Turner, 2006). Confusion is a productive emotion to the extent that it promotes productive thinking and reasoning that resolves the confusion (D'Mello et al., 2014). Cohesion gaps in text can stimulate more inferences in readers with greater world knowledge and general comprehension skills, a phenomenon known as the reverse cohesion

effect (Ozuru, Dempsey, & McNamara, 2009). D'Mello, Lehman, et al. (2014) have conducted studies that plant contradictions in discourse and thereby created cognitive disequilibrium, confusion, and sometimes better learning gains on transfer tasks. A text or learning environment can be designed to keep the student in an optimal zone of confusion to promote comprehension and learning.

When a text-cohesion gap or impasse occurs, which triggers an emotion of confusion or surprise. The learner engages in effortful problem-solving activities in order to resolve the impasse and restore equilibrium. However, confusion transitions into frustration when the impasse cannot be resolved, the student gets stuck, and important goals are blocked. Frustration may transition into boredom, a crucial point at which the learner disengages from the learning process. One state exists when their knowledge and cognitive skills can handle the incoming information and tasks delivered by the learning environment (Baumann & Scheffer, 2010; Csikszentmihalyi, 1990). Learners experiencing either a neutral state or a state of flow, referred to as cognitive equilibrium.

2) Behavior

Viewing attitudes as having three components (cognition, affect and behavior) helps people understand their complexity and the potential relationship between attitudes and behavior (Robbins, S. P., & Judge, T. A., 2018).

According to the theory of reasoned action, if people evaluate a behavior as positive (attitude), believe valued others want them to execute the behavior (subjective norm), and feel they have control over implementing the behavior (perceived behavior control), they will have stronger intentions and will be more likely to perform a behavior (Fife-Schaw et al., 2007).

3.3 Theories of Attitude Change

1) The Yale Attitude Change Approach (Hovland, et al. 1953)

According to this approach, attitude change/persuasion influenced by 3 factors: Source, originator of communication. Message, features of communication itself. Audience, characteristics of who is receiving the message.

2) Elaboration Likelihood (dual-process) Model of Persuasion (ELM) (Petty & Cacioppo's, 1986)

ELM holds that there are two 'routes' to attitude change:

Central route to persuasion occurs when we think critically about message content and are swayed by the strength and quality of its arguments.

Peripheral route to persuasion occurs when we do not do much thinking but are swayed by employing heuristics on the basis of non-content cues (e.g., "experts know best").

The Elaboration-Likelihood Model of Persuasion (Petty & Cacioppo, 1986)

Whether persuasion results from the central or the peripheral processing route depends upon: Ability (e.g., attention, 'receptive'), Motivation, Personal Involvement.

3) Self Perception Theory (Bem,1965)

According to Self Perception Theory (Bem,1965), attitude change does not need to result from dissonance. People infer their attitudes from their behavior.

Cognitive dissonance when attitude-behavior discrepancy large self-perception when not so large (Fazio, et al. 1977).

Self-perception occurs when we use our own behavior as a guide to help us determine our own thoughts and feelings (Bem, 1972; Olson & Stone, 2005).

4) Cognitive Dissonance Theory (Festinger, 1957)

This theory of self-persuasion holds that:

Cognitive inconsistency creates a state of psychological tension (i.e., "dissonance"). Such tension is aversive and motivating (where it poses a threat to the self). Easiest form of dissonance reduction will be adopted.

Festinger argues that there are three possible relationships among cognitions (thoughts, ideas): consonance, dissonance, and irrelevance.

According to cognitive dissonance theory (Leon Festinger), there is a tendency for individuals to seek consistency among their cognitions (i.e., beliefs, opinions). When there is an inconsistency between attitudes or behaviors (dissonance), something must change to eliminate the dissonance. In the case of a discrepancy between attitudes and behavior, it is most likely that the attitude will change to accommodate the behavior.

This discomfort that occurs when we behave in ways that we see as inconsistent, such as when we fail to live up to our own expectations, is called cognitive dissonance (Cooper, 2007; Festinger, 1957; Harmon-Jones & Mills, 1999). The discomfort of cognitive dissonance is experienced as pain, showing up in a part of the brain that is particularly sensitive to pain—the anterior cingulate cortex (van Veen, Krug, Schooler, & Carter, 2009).

Cognitive dissonance involves negative affect because discrepancy among cognitions undermines our clear and certain knowledge about the world, and thus our ability to engage in effective action (Harmon-Jones 2001).

Dissonance results when an individual must choose between attitudes and behaviors that are contradictory. The greatest dissonance is created when the two alternatives are equally attractive.

Two factors affect the strength of the dissonance: the number of dissonant beliefs, and the importance attached to each belief.

There are three ways to eliminate dissonance: (1) reduce the importance of the dissonant beliefs, (2) add more consonant beliefs that outweigh the dissonant beliefs, or (3) change the dissonant beliefs so that they are no longer inconsistent.

Dissonance can be eliminated by reducing the importance of conflicting beliefs, acquiring new beliefs that change the balance, or removing the conflicting attitude or behavior.

Positive Self-Esteem Reduces Dissonance

Heine and Lehman (1997) conducted an experiment to determine if threats to self-esteem would increase the magnitude of the dissonance-reduction effect.

Discrepant behavior → lowered self-worth → changes in thoughts and feelings

The experience of cognitive dissonance can influence people's thoughts and feelings about an attitude object by making people feel uncomfortable about our own behaviors. The discrepant behavior causes our sense of self-worth to be lowered, which then causes us to change our attitudes to feel better about ourselves.

On the other hand, rewards that are seen as more internal to the activity, such as rewards that praise people, remind people of their achievements in the domain, and make people feel good about themselves as a result of their accomplishments, are more likely to be effective in increasing not only the performance of, but also the liking of, the activity (Deci & Ryan, 2002; Hulleman, Durik, Schweigert, & Harackiewicz, 2008).

These elements affect attitudes toward reading. Using related class activities to change negative attitudes toward reading and to perform positive behaviors for reading.

4.   How to evaluate attitude

Attitudes are internal dispositions that cannot be directly observed, but (since they exert a directive influence on behaviour) can be inferred from external, habitual ways of behaviour (Ajzen, 1988; Baker, 1992).

Teachers incorporate multiple types of assessment into their instruction, and they do not rely on a single source of information. Assessment types range from formal testing techniques (e.g., teacher-made tests, standardized tests, and homework) to more informal, " on-the-spot " assessments (e.g., student behavior, perceived student effort, teacher expectation, informal observation, and interaction cues) (Cizek et al., 1995; Cizek et al., 1996; Fleming & amp; Chambers, 1983; Herman & amp; Dorr-Bremme, 1983; McMillan, 2002; Stiggins & amp; Bridgeford, 1985). Affect (i.e., discrete emotions or overall arousal) is generally understood as an evaluative structure used to form attitude objects (Ajzen, Icek, 2001).

4.1 Using MODE model

This is the theory of attitude evaluation (motivation and opportunity as determinants of the attitude-behavior relation). When both are present, the behavior will be deliberate. When one is absent, the impact on behavior will be spontaneous. The MODE model was developed by Fazio. A person's attitude can be measured in two different ways: Explicit measure, and Implicit measure.

Explicit measure is attitudes at the conscious level, which are deliberately formed and easy to self-report. Implicit measures are attitudes that are at an unconscious level, that are involuntarily formed and are typically unknown to us (2015) Both explicit and implicit attitudes can shape an individual's behavior. Implicit attitudes, however, are most likely to affect behavior when the demands are steep and an individual feels stressed or distracted (DeDreu, 2003)

In 1928 Louis Leon Thurstone published an article titled "Attitudes Can Be Measured" in it he proposed an elaborate procedure to assess people's views on social issues. Attitudes can be difficult to measure because the measurement is arbitrary because attitudes are ultimately a hypothetical construct that cannot be observed directly.

1) Explicit

Explicit measures tend to rely on self-reports or easily observed behaviors. These tend to involve bipolar scales (e.g., good-bad, favorable-unfavorable, support-oppose, etc.; Olson, James, 1993).

Explicit measures can also be used by measuring the straightforward attribution of characteristics to nominate groups. Explicit attitudes that develop in response to recent information, automatic evaluation were thought to reflect mental associations through early socialization experiences. Once formed, these associations are highly robust and resistant to change, as well as stable across both context and time. Hence the impact of contextual influences was assumed to be an obfuscate assessment of a person's "true" and enduring evaluative disposition as well as limit the capacity to predict subsequent behavior (Buhrmester, 2011) Likert scales and other self-reports are also commonly used.

2) Implicit

Implicit measures are not consciously directed and are assumed to be automatic, which may make implicit measures more valid and reliable than explicit measures (such as self-reports). For example, people can be motivated such that they find it socially desirable to appear to have certain attitudes.

An example of this is that people can hold implicit prejudicial attitudes, but express explicit attitudes that report little prejudice.

Implicit measures help account for these situations and look at attitudes that a person may not be aware of or want to show (Whitley, 2010) Implicit measures therefore usually rely on an indirect measure of attitude. For example, the Implicit Association Test (IAT) examines the strength between the target concept and an attribute element by considering the latency in which a person can examine two response keys when each has two meanings. With little time to carefully examine what the participant is doing they respond according to internal keys. This priming can show attitudes the person has about a particular object (Fazio, 2003). People are often unwilling to provide responses perceived as socially undesirable and therefore tend to report what they think their attitudes should be rather than what they know them to be. More complicated still, people may not even be consciously aware that they hold biased attitudes. Over the past few decades, scientists have developed new measures to identify these unconscious biases (Sekaquaptewa, 2003).

4.2 Questionnaires

Survey to evaluate attitude toward reading.

  1) Self-report (single-item) attitude measures

Self-report is easy and quick to administer but the responses may not be reliable, e.g., question-wording, mood.

  2) Attitude scales

Multiple items are used to measure the same construct. Eliminate some of the problems of single-item measures (e.g., reliability). Some of the more popular scales include the Likert scale, Osgood's Semantic Differential Scale, Expectancy-Value Scale (Fishbein, 1971).

3) Covert Attitude Measures (CAM).

These measures use physiological arousal to infer attitudes: Electro-myograph (EMG). (Petty & Cacioppo 1981) which may include heart rate & pupil dilation. Galvanic Skin Response (GSR): measures physiological arousal detected through skin resistance (Porier & Lott 1967).

4.3 Related researches to evaluate attitude toward reading

In a major study conducted in the United States, McKenna et al. (1995) administered the Elementary Reading Attitude Survey (ERAS; McKenna and Kear, 1990) to a stratified sample drawn from 229 schools in 38 states. This cross-sectional study revealed an overall negative trend in attitudes toward reading across these grades.

The survey undertaken by Hogsten and Peregoy (1999) using the Estes Attitude Scale for Reading, insofar as attitudes toward reading of whatever kind were not particularly positive at Grade 2, but were clearly negative in Grade 6.

In the cross-sectional study, McKenna et al. (2012) asked 4,491 American middle-school pupils to complete an adapted version of the ERAS (McKenna and Kear, 1990).

In their longitudinal study, Ley et al. (1994) had earlier explored the nature of attitude change among American middle-school pupils, specifically exploring the values placed upon voluntary reading for three distinct purposes, namely individual development, utilitarian ends, or enjoyment. They administered the Teale–Lewis Reading Attitude Scales on three occasions, in order to disentangle the cognitive, affective and conative aspects of their reading attitudes.

One cross-sectional study did explore differences in reading attitudes (Anderson et al., 1985). After administering a questionnaire on attitudes toward reading assignments, reading workload, and preference for reading as a leisure time activity, the authors ran analyses of variance (ANOVAs) for four separate groups: primary (Grades 1 to 4), intermediate (Grades 5 and 6), junior high (Grades 7 to 9), and senior high (Grades 10 to 12; Anderson et al., 1985).

Bokhorst-Heng and Pereira (2008) also explored reading attitudes among high achievers, asking 173 pupils in Singapore to complete the Attitudes Toward reading

questionnaire at the start and finish of their first year of secondary school. Results indicated a substantial deterioration in positive reading attitudes among pupils during their first year at secondary school. At the end of the year, the pupils perceived themselves to be less proficient readers than they had been at the beginning and expressed less interest in reading for leisure. By contrast, their attitudes toward reading for learning and academic achievement remained unchanged.

In a longitudinal study, Kolić-Vehovec et al. (2014) tracked changes in reading attitudes in unselected pupils aged 10-14 years. Croatian elementary school children completed an adapted version of the ERAS (McKenna and Kear, 1990) three times, in Grades 4, 6, and 8. The authors found that positive attitudes toward reading declined significantly. Whereas positive attitudes toward leisure reading deteriorated steadily between Grades 4 and 8, positive attitudes toward academic reading declined steeply between Grades 6 and 8.

The study designed by Nootens et al. (2019) assessed whether the expected decrease in reading attitudes by describing differences in reading attitudes-according to sex and reading goals–among readers. The researchers administered an adapted version of the ERAS (McKenna and Kear, 1990; McKenna et al., 1995; McKenna et al., 2012) to measure the constructs of recreational and academic reading attitudes. A total of 468 children (233 girls and 235 boys), including 201 drawn from seven elementary schools and 267 drawn from three middle schools (Nootens et al., 2019).

Table 22Related researches to evaluate attitude toward reading

	Researcher	Sample	Level	Language	Tool	Attitude
1	McKenna et al. (1995)	18,185	Elementary	E	ERAS	Negative
2	Hogsten & Peregoy (1999)		G2, G6	E	Estes Attitude Scale for Reading	Not particularly positive Negative
3	McKenna et al. (2012)	4,491	G6-8	E	Adapted version of the	Not positive

					ERAS	
4	Ley et al. (1994)	164	G6-8	E	Teale-Lewis Reading Attitude Scales	Not positive
5	Anderson et al., (1985)		G1-12, gifted students	E	Questionnaire	Not positive
6	Bokhorst-Heng & Pereira (2008)	173	Middle school, high achievers	E	Attitudes Toward reading questionnaire	Overall worsening
7	Kolicì-Vehovec et al. (2014)	175	Elementary	E	Adapted version of the ERAS	Positive attitudes deteriorated.
8	Nootens et al., (2019)	468	G5-8	French	Adapted version of the ERAS	Negative

Conclusion, the attitude in this study referred to the attitude towards the Japanese language reading of the university students. Enduring systems of positive or negative evaluations of Japanese reading. To use related class activities to promote positive attitudes and change negative attitudes toward reading. The assessment instruments include an opinion questionnaire towards the attitude of reading.

2.6 The concept of 'Developing instructional model to enhance Japanese reading comprehension skills and attitude toward reading among university students'

According to Joyce, Weil, and Calhoun's Models of Teaching, 9th ed. (2014) and other researchers, the model should contain theories and the following areas: purpose (focus), syntax, principles of reaction (rational), social system, support system, application and effect.

1. Tentative reading comprehension skills model

The components in tentative instructional model are focus, syntax, principles of reaction, social system, support system, application and effects.

(1)Focus

The purpose of this instructional model is to enhance reading comprehension skills and attitude toward reading among university students.

(2)Syntax

The syntax has four steps: concentration, learning new knowledge, application, summary and assignment.

Step 1 Concentration

Aim	Activity	Theory and principal	Technology	Evaluation
Focus on reading	Mindfulness Watch video	Neurolinguistics Meta-cognition	Slid, multimedia	Self-evaluation Observation

.				

Step 1 is concentration. Students do 1 min mindfulness to concentrate on oneself.

Students sit silent in their seats in classroom, close eyes and focus on breath.

Teacher leads students do mindfulness before class and count the time.

Teacher observe students to make sure they follow. Students evaluate their own activities if concentrate or not. Step 1 is to maintain concentration of students. To be ready for Japanese reading comprehension. After the 10 mins' break teacher play the video of the voice acting or the songs related to the new vocabulary.

Step 2 Learning new knowledge

Table 23

Aim	Activity	Theory and principal	Technology	Evaluation
Improve linguistic knowledge. Connect new and former knowledge.	Recall. Self-study Presentation. Exercises. Recite.	Neurolinguistics Metacognition Information processing theory Scaffolding	Graph、table、mind mapping White board Mobile application, learning software, Multimedia Online recorded course	Self-evaluation. Peer evaluation. Q&A Observation

Step 2 is learning new knowledge.

Including vocabulary and grammar.

(1) Key concepts

Teacher introduces key concepts of new knowledge. Not much details but a framework to show the connection of the new and former knowledge. Students recall former knowledge and connect new knowledge.

(2) Vocabulary presentation

Students do presentation of vocabulary in class. Each group prepare the memory methods and usage of vocabulary of one lesson. Duty group discuss the content pre-class and share how to make links to remember vocabulary in class. Other students try to find their own ways to remember vocabulary.

(3) Details of grammars

Students learn new grammars by recorded videos of the key grammars that teacher publishes in learning software pre-class.

In class students learn each key grammar by themselves and recite the key example sentence in textbook. Teacher presents the new knowledge. The differences of grammars are presented in tables with YES/NO instead of language description. The key points of the grammars are presented in pictures that have special drawings that easy to remember.

(4) Grammatical formula

Summarize the grammars to formulas to remember the methods of connection.

Teacher and duty group are scaffolding. Teacher reminds students the clues to remember the grammars frequently.

Step 3 Application

Table 24

Aim	Activity	Theory and principal	Technology	Evaluation
Improve linguistic knowledge, general knowledge and reading strategy.	Reading Make sentence Evaluation Peer cooperation	Neurolinguistics Metacognition IPT Scaffolding	Textbook Whiteboard Audio/video Slide Multimedia	Q&A Peer evaluation

Step 3 is applicate the new knowledge.

(1) Make sentence.

Students make new sentences with the new grammar to practice the new knowledge. And other students evaluate the sentence and point out the mistakes.

(2) Read and analyze.

Read other example sentences of each grammar, and remember the grammatical formula.

Students read the dialogs in the textbook with others and analyze the main meaning. Remind students do not focus the grammars when they do silent reading.

Step 4 Summary and assignment

Table 25

Aim	Activity	Theory and principal	Technology	Evaluation
To form knowledge framework	Reading Make sentence Evaluation	IPT Scaffolding Neuro-linguistics	Whiteboard Multimedia	Self-evaluation
Transfer linguistic knowledge to long-term memory. Improve positive reading attitude	Voice acting Repetition Group cooperation	Neurolinguistics Scaffolding	Multimedia Learning software/ mobile application Instant messaging app Relearning table	Quiz, Oral test Peer-evaluation

Step 4 is teacher presents the knowledge framework via mind mapping and remind students the assignment.

(1) Form knowledge framework

The knowledge framework is helping to improve linguistic knowledge and be the clue to recall information from long-term memory

(2) Voice acting

The assignments are after class. Students dub the audios of the dialogue that analyzed in class with peer. And choose Japanese videos (drama, animation) they have interest and do voice acting.

(3) Repetition

Teacher reminds students to recite the linguistic knowledge. Teacher make a relearning table that following the Ebbinghaus forgetting curve and publish in QQ, a popular instant messaging app for youngers. According to the relearning table, students recite vocabulary, grammar and example sentences during 1 day to many months. Students follow their own time of forgetting curve to relearning and transfer new knowledge from working memory to long-term memory

(3)Rational (Principles of reaction)

Teacher must turn the students' attention from the meaning of the grammar and the new word toward analyze the main meaning of the sentence. The teacher should encourage various comprehension skills. The teacher's task is to nurture the comprehension skills by emphasizing the process of thinking and inducing the students to reflect on it.

The teacher should aim to help students adopt scientific memory methods. Assist students transfer new knowledge to long-term memory. Guide students to build the clues needed for long-term memory.

Gather the attention of students and give support of the discussion

(4)Social system

The atmosphere of the classroom is cooperative.

The teacher begins in a controlling position. The teacher is generally the initiator of phases. The major functions of the teacher during the activities are to promote. The teacher also supplies additional materials as needed. The students are encouraged to use the tools to seek their fun of learning.

(5)Support system

Support consists of carefully selected and organized materials. Pictures, concrete aids, films, and other audiovisual materials for increasing the sensory richness of the associations.

A flexible instructor who skilled in reading comprehension skills.

Learning environment pre-class. Small groups need to be created. The studying group that shape the new words for commitment to memory. The strategy to solve the reading problems. The mnemonic to remember words.

(6)Application and Effect

The model can be used in Japanese reading class and in university

The primary application of the model is to study and applicate reading comprehension skills.

Inducing students to increase their comprehension skills.

It nurtures attention to analyze, attention the structure of the sentences, and the meaning of the grammar and words.

Applying to foreign language teaching for the students who have basic reading strategies.

The model is designed to instruct students to study and applicate the RCS.

It nurtures attention to analyze, attention the structure of the sentences, and the meaning of the grammar and words.

The tentative reading comprehension skills model (CLAS model)

The tentative reading comprehension skills model are summarized as following form, including focus, rational, syntax, social system, and support system.

The tentative reading comprehension skills model

Table 26

Focus	Rational	Syntax	Social system	Support system	Application and effects
To enhance Japanese reading comprehension skill of university students	Peaceful activities	Step 1 concentration	T: Guider S: Meditator	Peaceful environment Slide,multimedia	Habit of concentration
	Natural social process	Step 2 learning new	T: Instructor S:	Well-organized materials.	Conceptual structure

		knowledge	Follower	Multimedia Learning software	
	The interaction environment	Step 3 application	S: Follower T: Encourager	Small-scale group discussions	Reading strategy of sentence
	Learning environment	Step 4 Summary and assignment	T: Reminder S: Cooperator	Peer cooperation Variety of media resources	Interesting of reading.

2. Theoretical framework

The theories and principles to make the instructional model are neurolinguistics theory, information processing theory. Other principles are metacognition, scaffolding. And group studying and so on.

Neurolinguistics

Neurolinguistics can explain the process of thinking and explain the progress of brain work in a scientific way.

On the other way, learners can be instructed to find out the problem which leads to poor reading comprehension in the reading process. Focus on training and practicing low-level skills and will not waste time on avoidable waste.

Information processing theory

Based on the content of the Information processing theory, when Students read the theme, subject, and key content during the reading process, they need to remind themselves to read and emphasize repeatedly to keep them long time.

To prevent reading the following and forget the above, and to reduce the phenomenon of reading the same sentence and the same paragraph repeatedly during the reading process.

When students read the knowledge of background culture, they need to pay special attention and classify them in order to practice repeatedly, in order to enter the long-term memory.

Reading and learning of common-sense materials, we must pay attention to reading different genres and forms of materials. The content is repeatedly presented to the readers and will stimulate long-term memory.

Metacognition

After learning the reading comprehension skills, learners should know which kind of text use which suitable skills or strategies. Get information they need fast.

Scaffolding

Students need to get the information of the background knowledge. Teachers, peers, books, internet all can be their scaffolding.

When the students discussing the deep meaning of the text or the emotion that the writer have not state directly, the students will focus on the comprehension rather than the linguistic knowledge. And the attitude in class will change. After learning the skills they need in reading, and also discussed with the peers, the students will form deep understanding and apply analytic skill automatic.

The theories that support the syntax are listed for details as follow,

Table 27

Theory / SYNTAX	1.Neuro-linguistics	2 IPT	3 Meta-cognition	4. Scaffolding
Step 1 Concentration	Attention		Autonoetic consciousness	Technical S
Step 2 Learning New Knowledge				

(1) Key concepts	Decode	LTM Retrieval		Technical S
(2) Vocabulary presentation	Encoding Auditory speech comprehension	WM	Metamemory	Reciprocal S
(3) Details of grammars	Encoding	WM	Meta reasoning	Technical s
(4) Grammatical formula	Encoding	WM		
Step 3 Application				
(1) Make sentence.	Motor production of speech	WM	Consciousness	Reciprocal S
(2) Read and analyze.	Auditory speech comprehension Inference Decode		Meta reasoning Autonoetic consciousness	Soft s Strategic s
Step 4 Summary and assignment				
(1) Form knowledge framework	Encoding	Retrieval		Hard S
(2) Voice acting	auditory speech comprehension			Reciprocal S Technical s
(3) Repetition	motor production of speech		Metamemory	Technical s

3. Reading comprehension skills model framework

The theories of the reading comprehension skills model framework are Neurolinguistics theory (NT), Information Processing Theory (IPT), Metacognition, and Scaffolding. The independent variable is the instructional model and the dependent variables are reading comprehension skills and attitude toward reading. The components of the tentative model are purpose (focus), syntax, principles of reaction (rational), social system, support system, application and effect.

The reading comprehension skills model framework was listed in form as below.

3.1 Research framework

Table 28

Step 1 Document research. Choose the theories and philosophy. Step 2 Choose the components of the instructional model. Step 3 Develop tentative model. Step 4 Confirm the instructional model by experts Step 5 Implementation		Components of the instructional model Focus, syntax, rational, social system, support system, application and effects
Theory Neurolinguistics- Attention		

Decode	IV
Encoding	Instructional Model
Inference	
Auditory speech comprehension	DV
Motor production of speech	Reading
	comprehension Skills.
IPT –	Attitude toward
Retrieval	reading.
working memory,	
long term memory	
Metacognition –	
Autonoetic consciousness (self-awareness),	
Consciousness (awareness),	
Metamemory	
Meta reasoning	
Scaffolding –	
Technical scaffolding,	
Reciprocal scaffolding,	
Strategic scaffolding,	
Hard/soft scaffolding	

3.2 Research conceptual framework

Table 29

Step	Aim	Activity	Theory and principal	Evaluation
Step 1 Concentration	Focus on reading.	Mindfulness Watching video	Neurolinguistics Metacognition Scaffolding	Self-evaluation Observation
Step 2	Improve	Recall.	Neurolinguistics	Self-

Learning new knowledge	linguistic knowledge. Connect new and former knowledge.	Self-study Presentation. Exercises. Recite.	Metacognition Information processing theory Scaffolding	evaluation. Peer evaluation. Q&A Observation
Step 3 Application	Improve linguistic knowledge, general knowledge and reading strategy.	Reading Make sentence Evaluation Peer cooperation	Neurolinguistics Metacognition IPT Scaffolding	Q&A Peer evaluation
Step 4 Summary and assignment	Transfer linguistic knowledge to long-term memory. Improve positive reading attitude	Reading Make sentence Evaluation Voice acting Repetition Group cooperation	Neurolinguistics IPT Scaffolding	Self-evaluation Quiz, Oral test Peer-evaluation

3.3 Tentative Model

The tentative model is listed below. The model was named CLAS Model.

Table 30CLAS Model

Focus	Syntax	Rational	Social system	Support system
To enhance Japanese reading comprehension skill	Step 1 concentration	Peaceful activities	T: Guider S: Meditator	Peaceful environment Slide,

of university students				multimedia
	Step 2 learning new knowledge	Natural social process	T: Instructor S: Follower	Well-organized materials. Multimedia Learning software
	Step 3 application	The interaction environment	S: Follower T: Encourager	Small-scale group discussions
	Step 4 Summary and assignment	Learning environment	T: Reminder S: Cooperator	Peer cooperation Variety of media resources

2.7 Related research

In the related research, Nuttall (1982), Lessing and de Witt (2005), Wan-a-rom (2007), Curtis, & Mary (1980), Azikiwe (2007) studied on the topic that the students lack of linguistic knowledge, the methods to solve this item are read more to develop automaticity of the vocabulary and grammar, to know more background knowledge and focus on the process of reading.

Rasinki (2017), Perfetti (1999,2014), Arrington (2014), Cutting (2006), Garćıa JR & Cain (2014), LaBerge & Samuels (1974), Dahlin (2011) did research on the topic about lack of comprehension skill, the method to solve this item are cognitive control, working memory and decoding.

Day, Bamford (1998) suggested to use extensive reading to solve problems of lack of general knowledge.

Carrell (1989), Nwabueze (2011), Oxford (1997), and Moerk (1994) studied on the topic that the students' attitude of reading are not positive, they found methods such as reducing the obstacles (vocabulary and grammar), make the reading environment, encourage group studying.

Wan-a-rom (2007), Moats (1999) studied the methods to improve teaching method.

In this research, the author will use neurolinguistics theory, information processing theory, metacognition and scaffolding to develop an instructional model to solve the reading problems in university.

The following form listed the methods to solve the author's problems in teaching Japanese reading class.
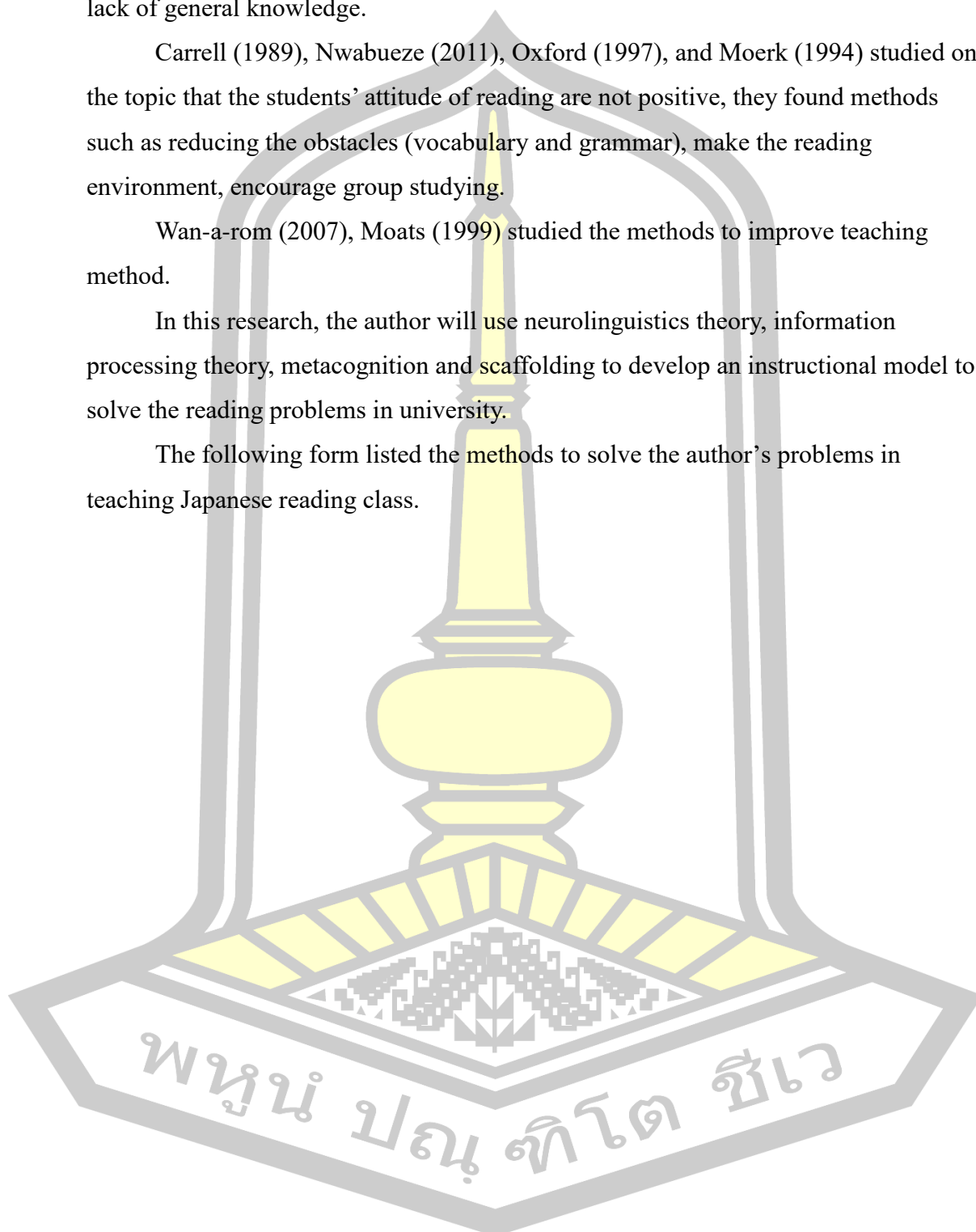
The methods to solve Japanese reading problems

Researchers Solution	Methods to solve	Reading Problems	Reading Problems	My methods to solve the problems
Extensive reading--Nuttall (1982)		Vocabulary and reading skills	1.Lack of linguistic knowledge- vocabulary, grammar, sentence structure	Hard to understand grammar- Literal and free translation
Background knowledge- Schema Theory		reading comprehension	Basic skills,	Hard to memorizing vocabulary –mnemonic, root
Reading to learn (Lessing and de Witt, 2005)	To use the literacy	To focus on linguistic knowledge	Structure, schema knowledge Identifying language;	
To reduce attention in the words	More attention in reading processes, (such as understanding)	To focus on linguistic knowledge	Lack of orthographic knowledge;	
Extensive reading- Wan-a-rom (2007)	To read more (vocabulary and grammar)	Reading ability (high proficiency)		
To develop automaticity	More attention for comprehending	Less skilled reading		
To improve verbal coding processes speed - Curtis, & Mary (1980)	More attention in reading processes	Deficits in comprehension		
Study skills approach (grammar, punctuation and spelling in reading)	To pronounce words properly due to a proper exposure to spelling activities	Stopping when reading		
Pictures -Azikiwe, 2007	Mental expression	Word understanding		
Planning abilities, attention and working memory		Reading comprehension	2.Lack of comprehension skill- Word meanings in context, Main thought, inferences, Literary	Low reading comprehension skill - get the meaning of the word from the root, analyze the

Source	Term	Reading type	Description	Outcome
Simple and easy text -Rasinki, (2017)	Easy understanding	Ability to read and comprehend	devices, analysis and the interpretation	structure of the sentence
Inference, cognitive control and working memory, language knowledge - Perfetti,1999,2014		reading comprehension	Acquire and use information Cannot retrieving explicitly stated information	
Non-linguistic skills, Arrington ,2014	Cognitive control and working memory	reading comprehension		
Working memory and cognitive control - Cutting,2006		Moderating reading comprehension and decoding relationships		
Master decoding -Garc ıa JR, Cain, 2014	To map letters to their corresponding speech sounds and meaning	reading comprehension		
Decode words -LaBerge,1974	to decode words accurately, fluently and effortlessly	reading comprehension		
Training working memory- Dahlin, 2011		Reading abilities		
Extensive reading--Day, Bamford (1998)	Reading books (linguistic pattern)	Reading ability	3.Lack of general knowledge- knowledge about the world, including knowledge of text forms Background knowledge, text types, Reading strategies	Lack the cultural background -read text of general knowledge in L1 and L2
Vocabulary and grammar (Carrell,1989)	Reducing the obstacles in reading	Readers' motivation	4.Attitude - No interesting, no patient, no motivation, attention	No respond in class. Poor academic performance, and fail the exam.
Positive reading attitude -Linake 2015		Reading attitude	the purposes for reading acquire and use information	Motivation (new teaching model, happy studying, easy

	Building proper foundation of reading	Attitude, language skill and other skills	interest	
Culture of reading				way), group discussion
Environment - Nwabueze (2011)	Reading culture	Negative attitude	negative attitudes, avoid reading, refuse to read	
Extensive reading	To read various kinds of text independently	Interesting, reading skill	Not focusing on text	
Working in groups -Oxford (1997)	To decrease students' workload, Sharing ideas	Background knowledge	Panic	
To encourage communication- Moerk (1994)	To ask each other questions	Work independently		
Interesting and challenging task		To reduce anxiety, increase motivation.		
Proper pedagogy-Wan-a-rom, 2007		Vocabulary and grammar structure	5.Teaching method not good	Teaching method - instructional model
Teacher's initiation- Linake,2015	Growth in reading	Proficiency and competence		
Change Classroom teaching - Moats, 1999	Reading instruction	Reading problems	6.Textbook-difficult, no funny	Difficult textbook No explain for some grammars - analytic thinking

Chapter III

RESEARCH METHODOLOGY

This chapter presents the research methodology including subjects of the study, research design, research procedure, research instruments, construction and development of research instruments, data collection, and data analysis.

This study was both qualitative and quantitative research that aimed to construct an instructional model through different task types and complexities to foster students' reading comprehension skills and develop positive attitude toward reading.

Data were therefore gathered through different instrumentation and analyzed to respond to questions effectively.

The research design and development in this study was divided into three phases namely,

Phase I Contextual study.

Phase II Construct tentative model.

Phase III Implementation.

Research procedure of the three phases is presented as follow.

Table 31*Research procedure table*

Phase	Participation	Variable	Instrument	Analysis	Expected result
PHASE 1 Contextual study	Books, articles	Reading problems (RPs), needs, Problems of reading attitude.	Checklist form	Content analysis	Identify RPs and guideline to improve reading
	66 students		Questionnaire	Percentage (%), mean ($\bar{x}$), standard deviations (S.D.)	Investigate RPs and guideline to improve reading
	Seven teachers		Interview	Content analysis	Investigate reading problems and

					guideline to improve reading
	5 experts	Guideline to improve RPs RPs, needs, Problems of reading attitude.	Interview	Content analysis	Confirm questionnaires and guideline to improve reading
PHASE 2 Construct tentative model	7 experts	IV: Tentative IM DV: RCS, Attitude	Assessment form	Mean ($\bar{x}$), standard deviations (S.D.)	Confirm tentative IM, lesson plan, test paper, attitude questionnaire
	43 students		Reading test, Attitude toward reading scale	Mean, S.D. percentage	Significance of the Tentative IM
PHASE 3 Implementation	36 students in experimental group	IV: JRCS Model DV: RCS, attitude	Reading test, Reading attitude scale	Mean, S.D. t-test (Independent)	Significance of the JRCS Model
	36 students in control group	IV: Traditional IM DV: RCS, attitude			Significance of the TIM

Details of research procedure in each phase are presented as follow.

3.1 Phase I Contextual study

This phase is to study the current problems of reading comprehension in Japanese language and the attitude toward reading of the students. To answer one research question, what are the current problems in reading comprehension and attitude toward reading for Japanese language in context of university students?

Construct and quality of the instrument

To explain the research method, the instruments divided into two sets. Set 1 is intervention. Set 2 is instruments for collecting data.

Set 1 Intervention

To identify reading problems and guideline to improve reading comprehension skills including instructional model and the components.

1.   Participation

The participation are books, journal articles and research papers that about reading, foreign language learning, linguistics, educational psychology, and the learning theories of philosophy.

These materials are from library or E library of Mahasarakham University and google scholar. The books are about education, philosophy, and the instructional model and the writers of the books are experts in their research areas most of them are professors and Ph.D.

And the journals of the articles belong to Q1 or Q2 in the SCImago Institutions Rankings (SIR) which is a classification of academic and research-related institutions ranked by a composite indicator that combines three different sets of indicators based on research performance, innovation outputs and societal impact measured by their web visibility.

And research papers from theses of doctoral degree.

The books, journal articles and research paper are from library or electric library of Mahasarakham University in Thailand and google scholar.

2.   Variable

The variables are problems of reading, needs, and problems of attitude toward reading. Including the problems in reading comprehension process and solving process of students, the needs of students.

3.   Instrument

Checklist form. Including checklist of reading problems, attitude problems toward reading and the components of instructional model.

4.   Procedure

Step 1 Study documents and researches related to reading problems and attitude problems toward reading.

Step 2: Analyze the content and choose the problems to identify the kinds of general problems of students in reading comprehension and their attitude toward reading.

Step 3. Analyze the relationship among problems, solutions and needs of students. Summary problems to create a form as in Table.

Analyze the guideline to improve reading and choose the components of instructional model to make Table

Table 32 *Reading problems and attitude problems toward reading*

Problem	Branch	Factor	Solution	Need
Students lack knowledge required for reading comprehension	Linguistic knowledge	words grammar reading skills cultural background	1)Manage linguistic knowledge 2)Learn reading strategies 3)Reading more 4)Change reading teaching method 5)Make reading culture 6)Follow reading process in brain	Memory method
	General knowledge			
Lack methods to improve RCS				
Negative attitude toward reading		No interesting		
		No motivation		

Table 33 *The components of instructional model (Details)*

Component (variable)	Definition	Detail
Focus	the central intent (main objective) of the model, specific intention in mind	Enhance reading comprehension skills
Syntax	the model's structure and includes the sequence of steps the logical and sequential order of the teacher-student activities of the instruction procedure.	Warm up. Presentation. Practice. Production. Wrap-up.
Rational (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.	Supporting discussion
Social System	the interactions between students and teacher as each model is viewed as if it were a mini society. the nature of the learning environment the role and relationship of the teacher and students through the phases as well as designing the lesson.	Teacher as an initiator. Students as cooperators
Support system	the supporting conditions required to implement the model successfully. Support' refers to any additional requirements all instructional aides used in a IM	Well-organized materials. Multimedia.
Application and effects	how the students use what the model teaches. Application is the utility of the model.	Reading comprehension skills. Positive attitude toward reading

5. Analysis

Content analysis.

Set 2 Instruments for collecting data

To use questionnaire and interview to collect data of reading problems and attitude problems toward reading.

1.   Population and sample

The population and sample have two groups which is students (Group 1) and teachers (Group 2).

Group 1 Students

Students of Shaoyang University who studied Japanese as a second foreign language in School of Foreign Languages are the population for the questionnaires.

Population size is 470, sample size is 66. These students are volunteers from second-year and third-year students with different gender and language level from N5 to N3. They study Japanese language from beginner and finished more than one term (12 weeks) studying, which is more than 36 hours classroom learning).

Group 2 Teachers

The teachers are volunteers working in seven universities in different provinces in China with different gender, age, and experiences in Japanese teaching.

Population size is 30. Sample size is seven.

These teachers have Japanese language teaching experience more than five years.

Their students study Japanese as a second foreign language from beginner and the Japanese level of their students are less than N3.

2.   Variable

The variables are students' reading problems and attitude problems toward reading and needs. The reading problems including the problems in reading process, the problems when the students solve the problems.

3.   Instruments

The instruments for collecting data including questionnaire for reading problems and attitude problems toward reading for students, and interview sheets for teachers.

Questionnaire has been chosen as the most appropriate research methods. The questionnaire is the most appropriate method, due to a large number of students, and using a questionnaire allows students voicing their own opinions to respond in anonymity.

4.   Procedure

The procedure to develop questionnaires and interview sheet are presented as below.

A) Questionnaire

The procedure to make scale of problems of reading and attitude has seven steps.

Step 1 Study documents

Study documents, textbooks and researches related to reading problems and attitude problems toward reading.

Step 2 Study on how to create a questionnaire.

1) *Study questionnaires description and objective.*

From relevant textbooks and research most of the questionnaire answers are given as a Likert scale, where respondents are asked to rate a series of statements by having them mark numbered categories (Likert, 1932).

In the present questionnaire, students are presented with 63 statements and asked to rate (in accordance with five-point Likert scales) their varying degrees of:

Agreement: strongly agree - 5, agree - 4, neutral - 3, disagree - 2, strongly disagree -1

A five-point Likert scale is used here because it builds in 'a degree of sensitivity and differentiation of response, whilst still generating numbers' (Cohen Manion & Morrison, 2000: 253) apt for statistical analysis.

2) *Clarify the contents of questionnaires.*

By analyzing the research objectives and determining the structure of the scale in two parts, reading problems (part 1) and attitude toward reading (part 2).

The questionnaire with 63 items in six sections.

The questionnaire contained another short section (Background Information About Yourself) before part 1 and 2 that intended to obtain demographic information such as sex, age, academic year, etc.

Part 1 Scale of reading problems

Questionnaires are designed to investigate students' reading problems and attitudes toward reading in Japanese. There were some aspects in the questionnaire: reading environment, reading material, reading strategy, reading activities, needs in Japanese lesson, and reading attitude. On the implementation of reading comprehension comprised questions which asked informants about their frequency of reading, process of reading, implementing of reading comprehension skills, and their monitoring and evaluation of reading comprehension skills.

The scale with 31 items has three sections to obtain reading problems of students, which are section A Linguistic knowledge, section B General knowledge and section C Methods to improve reading skills.

Part 2 Scale of attitude toward reading

The present study intends to investigate Japanese reading attitudes, and for this purpose, it attempts to construct an instrument that measures reading attitudes.

The study focuses on cognitive and affective components, two of the components that are regarded as constituting reading attitude.

There were three sections: section D probed affective reactions to academic reading, section E cognitive reactions to academic reading, and section F your current attitudes to Japanese.

There were seven and eight items in sections D and E respectively. The items were constructed on the basis of the author's literature review dealing with the affective and cognitive domains of reading.

Section F with 17 items was constructed for measure attitude toward the whole Japanese learning.

3) Analyze the relation about objective, concept in questionnaires.

Step 3: Create a rating scale.

The scale listed in the appendix.

All items were written in English, that are easy to read by experts and the students majored in English.

Step 4 Ask experts to improve questionnaires.

The preliminary list of items was examined by experts.

1) Participation

Five experts who are professionals in Japanese language, reading comprehension, curriculum and instruction, research and innovation in Thailand. The experts are Doctors of Philosophy and teachers in university who are succeed in linguistics and foreign languages researching and curriculum and instruction.

2) Variable

The variables are problems of reading, needs of teachers and students, problems of attitude toward reading and guideline to improve reading problems.

3) Instruments

Interview sheets were constructed for experts.

Through focus group discussion to confirm the questionnaire and interview questions.

4) Procedure

First, five experts were asked to rate each item based on the objectives and the level of comprehension using the evaluation form constructed by the researcher. Then, the Index of Item-Objective Congruence (IOC) was calculated by assigning scores to the answers as follows:

The item is appropriate = 1

Not sure = 0

The item is not appropriate = -1

Second, the data taken from the experts were interpreted. The item assessed the IOC value higher than 0.5 was kept. In contrast, the item was lower than 0.5 must be modified.

5)   Analysis

Content analysis.

Table 34 *Assessment form 1 Questionnaires for students*

Component (variable)	Objective	Index	Indicator behavior	Question Item detail	IOC +1	0	- 1	Notice
(1) General knowledge problems					+1			
(2) Linguistics knowledge problems					+1			
(3) No motivation							- 1	
(4) No interesting					+1			
(5) Negative attitude					+1			

Step 5 Analyze the data from assessment forms.

And edit the questionnaire

Table 35 *Checklist 1 Edit the questionnaire*

Expert	Questionnaires	Notice
1		
2		
3		

Step 6 Develop a new questionnaire.

Step 7 Implement the questionnaire.

Questionnaires were given to the students during June to August 2020.

It is an electric questionnaire in Tencent Questionnaire, students used social application- WeChat in mobile phone to fill the E-form.

The author distributes questionnaires to students. The author stayed in the classrooms and explain a short while. And to obtain the practical reading problems and attitude problems toward reading from students.

B) Interview

The interview is the main tool in providing an answer to the research questions.

The advantage of using this method is to obtain the practical reading problems of students.

Step 1 Document research.

Studying the theories and researches related to how to make interviews.

Step 2 Set scope for the interview.

Write the contents of the interview. The interview questions are based on the content of the questionnaire for students. To edit the questions and use academic vocabularies to ask questions.

The author is the interviewer, the teachers who teach Japanese language in universities in different provinces in China are interviewees. The interviewees including the colleges of the author, and to use snowball to find more teachers to interview.

To use web interview to ask teachers the reading problems and attitude problems of students. And record the whole interview with the permission of the interviewees.

During June to August 2020. Interview seven teachers, each 30 mins and analyze the content more than 24 hours.

There were three aspects in the questionnaire: reading problems, needs in Japanese reading lesson, and attitude toward reading of students.

The interview sheet with 20 questions.

All items were written in Chinese and English, that are easy to read by experts and Japanese teachers.

Step 3 Create interview sheet.

Following the scope to write the questions in the interview sheet.

Step 4 Ask experts to check the interview questions and improve it.

The experts are the same persons that confirmed the questionnaire for students in set 2 (4.1 questionnaire Step 4)

Table 36*Assessment form 2 for interview questions*

Component	Objective	Index	Question Item detail	IOC			Notice
				+1	0	-1	
1							
2							

Step 5 Analyze the data obtaining from the experts.

Edit the interview questions following the experts' comments.

Table 37*Checklist 2 Edit interview questions*

Expert	Interview questions	Notice
1		
2		
3		

Step 6 Develop a new interview sheet.

The interview sheet is listed in appendix.

Step 7 Implement the interview to teachers.

Use web interview through social software such as WeChat or QQ. Record the answers.

Table 38*Checklist 3 interview record*

Question	Answer
1.	Teacher 1
	Teacher 2
	…
2	Teacher 1
	Teacher 2
	…

Analysis

To conduct descriptive statistics (mean and percentage) to analyze the collected data in questionnaires.

Analyze the data collected from interview.

3.2 Phase II Construct tentative model

The activity in this phase is to construct an instructional model to enhance Japanese reading comprehension skills and attitude toward reading among university students. This phase describes the participation and sample, construction and development of research instrument, variables, data collection, data analysis and interpretation, and statistics employed to analyze the collected data.

The instruments developed were tentative instructional model, lesson plan, reading comprehension test paper, attitude questionnaire of students' attitude toward reading and assessment form. The quality of these instruments was verified.

Details of each research instrument whereas follows.

Construct and quality of the instrument

To explain the research method, the instruments divided into two sets. Set 1 is intervention, including instructional model and lesson plan. Set 2 is instruments for collecting data, including reading test paper, and reading attitude scale.

Set 1 Intervention

Instructional model and lesson plan were developed in set 1.

1.   Participation

Same with phase I set 1.

2.   Variable

Same with phase I set 1.

3.   Instruments

Assessment forms were constructed for experts. To use focus group discussion to confirm tentative instructional model.

4.   Procedure

4.1 The tentative instructional model

Step 1-3 are same with the procedure in phase I set 1.

Developed the tentative instructional model by using the information from phase I.

Chart 3 The components of instructional model

Component	Content
Focus	Enhance reading comprehension skills
Syntax	Warm up. Presentation. Practice. Production. Wrap-up.
Principles of Reaction	Supporting discussion
Social System	Teacher as an initiator. Students as cooperators

Support system	Well-organized materials. Multimedia.
Application and effects	Reading comprehension skills. Positive attitude toward reading

Table 39

The tentative instructional model is listed in table as below.

Chart 4 The tentative instructional model

Focus	Syntax	Rational	Social system	Support system	Application and effects
To enhance Japanese reading comprehension skill of university students	Step 1 concentration	Peaceful activities	T: Guider S: Meditator	Peaceful environment slide	Attitude
	Step 2 learning new knowledge	Natural social process	T: Instructor S: Follower	Well-organized materials. Multimedia Learning software	Reading comprehension skills
	Step 3 application	The interaction environment	S: Follower T: Encourager	Small-scale group discussions	Reading comprehension skills
	Step 4 Summary and assignment	Learning environment	T: Reminder S: Cooperator	Peer cooperation Variety of media resources	Attitude

Table 40

Step 4 Ask experts to improve the model.

Participation

Seven experts who are professionals in Japanese language, linguistics, curriculum and instruction, research and innovation in Thailand.

The experts are Doctors of Philosophy and teachers in university who are succeed in linguistics and foreign languages researching and curriculum and instruction.

Variable

The variables are tentative instructional model and lesson plan.

Instruments

The research method to collect data is focus group discussion.

Confirm tentative instructional model and lesson plan.

Procedure

(1) Create the contents that discuss in focus group discussion.

(2) Invite experts in different areas to join the focus group discussion.

Expert name 1 Wichaya Yoshida. Research area Japanese.

Expert name 2 Prasong S. Saihong. Research area curriculum and instruction.

Expert name 3 Sirirat Nakin. Research area reading, linguistics

Expert name 4 Araya Piyakun. Research area Educational Psychology, attitude, reading process.

Expert name 5 Surachet Noirid. Research area Computer Education, Educational Administration and Development

Expert name 6 Prasert Ruannakarn. Research area Educational Statistics.

Expert name 7 Piyaporn Phumkeaw. Research area Educational

(3) Ask experts to check each aspects of the instruments.

Assessment forms were constructed for experts. Each item has listed in form of assessment. To confirm validity and reliability of tentative instructional model, lesson plan.

Assessment form 4 Confirm the tentative instructional model

Expert	Tentative instructional model	Notice

1		
2		
3		

Step 5 Analyze the data from assessment forms.

Edit the tentative instructional model.

Step 6 Develop a new instructional model.

Step 7 Implement the instructional model in a class.

The subjects were instructed by the author using the new instructional model for 48 sessions in 12 weeks.

4.2 Lesson plan

To construct lesson plan has six steps.

Step 1 Study course descriptions and learning objectives.

Learning subject .... Class ....

According to the course .... Term ....

Step 2 Divide all content into .... lessons as follows

Lesson 1 ……………………………………………

Lesson 2 ……………………………………………

Lesson X…………

The author used Lesson .... Subject.......... to create lesson plans for data collection as follows.

Step 3 Analyzing the relationship

Analyzing the relationship of Lesson ....Subject..............by dividing the sub-titles of the lessons as illustrated in Table.

Table 1 shows the relationships between **topic**s, concepts, and learning objectives (or indicator) in Lesson .... Subject.....................................

Table 2 Scope of the lesson plan

Topic	Concept	Indicator
1.	1.	1.
		2.
2.	2.	3.
	3.	4.

Table 41

Step 4 Writing the lesson plan

This step is the process of writing the lesson plan. Based on the principles or the teaching and learning techniques as the author used, the topic order was specified to construct the plan clearly (Only for teaching activities, not need to specify each plan name).

1) Lesson plan following the instructional model

The lesson plan under Japanese reading comprehension model is focus on obtain information from the text. The author plan to use this instructional model two academic years (four terms) to teach Japanese reading class for university students who study Japanese as a second language in School of Foreign Language.

The textbook named (Chinese-Japanese Communication) Standard Japanese (New version), level in N5 to N4. All the texts are academic reading.

The lesson plan has 14 topics that in three parts. Part 1 is basic knowledge of article style (lesson 1 to 4) and the methods to improve the speed of reading comprehension (lesson 5 to 12). Part 2 is characteristics of types of literature (lesson 13). Part 3 is information retrieving (lesson 14). The lesson plan (Table 3) listed in appendix shows correlation of topic, concept, indicator etc. in 12 weeks (one term). Each week teach twice (1.5h each class), total 36 hours.

2) The traditional lesson plan

The traditional lesson plan follows the content of textbook named (Chinese-Japanese Communication) Standard Japanese (New version), level in N5 to N4.

The author plan to use traditional instructional model two academic years (four terms) to teach Japanese reading class for university students who study Japanese as a second language in School of Foreign Language. The lesson plan has 12 topics. The lesson plan (Table 4) listed in appendix shows correlation of topic,

concept, indicator etc. in 12 weeks (one term). Each week teach twice (1.5h each class), total 36 hours.

Each lesson following five steps: Step 1 Warm up, Step 2 Presentation, Step 3 Practice, Step 4 Production, Step 5 Wrap-up.

The traditional lesson plan focuses on vocabulary and grammar in each lesson, students and teachers treat the passages in the textbook as the practice of using the linguistics knowledge.

Step 5 Quality checking

As for the quality checking process of lesson plans have the same principles as in set 2 (Test Creation) step 6 and other steps as appropriate which will be further discussed as follows.

Step 6 The implement is same with tentative instructional model (step 7).

5.   Analysis

Mean ($\bar{x}$), and standard deviations (S.D.).

Set 2 Instrument for collecting data

The instruments for collecting data including reading test paper, questionnaire for attitude toward reading.

1.   **Population and Sample**

The population of third-year (enrolled in 2018) students from seven participating classrooms (N = 268) majoring in English language who study Japanese language as a second foreign language in School of Foreign Languages in Shaoyang University in China. They are all native speakers of Chinese and had studied EFL through formal instruction at school for at least seven years. And most of them have not been to Japan. They study Japanese language as a second foreign language

because the university asked. They read Japanese text for academic reason but not for their own interesting.

They start the third term of the Japanese classroom learning in the first semester of the academic year 2020. They have same language level (under N5).

The samples are one natural class with 43 third-year students (enrolled in 2018). These students with different gender and age range 18 to 22. This class was chosen from the seven participating classrooms.

2. Scope for implementation

Subject

Academic reading in Japanese language.

The textbooks named China-Japan Communication Standard Japanese (New Version) contain various literary works, such as stories, prose, drama, etc., through which certain language projects are taught.

Time scope

The time scope is from September to December 2020. Each class under the new instructional model takes 1.5 hours, 3 hours per week, lasting 12 weeks, total 36 hours classroom teaching.

Place

This research will study in the School of Foreign Languages in Shaoyang University in China. In the classrooms in university.

3. Variable

The independent variable is tentative instructional model.

The dependent variables are reading comprehension skills and attitude toward reading.

4. Instruments

Reading test, and reading attitude scale (same with phase I)

5. **Procedure**

The procedure presented the methods to construct reading test paper.

The questionnaire to measure attitude toward reading use the one developed in phase I.

5.1 Reading test

To construct Japanese reading test has ten steps.

Step 1-3 have the same writing principles as step 1-3 in constructing lesson plans (set 1). Here repeat these three steps.

Step 4 Study on how to construct an exam from documents, texts, etc.

Name of the specify textbook .... (Researchers' name of the references…….)

Step 5 Determine the number of test types, 4 or 5 options.

Write down the number of all questions that the author uses in each class and the number selected in the final exam (20%-50%) and then construct the test according to the topic and objective of each learning item. Showing in Table 4 as an example.

Table 4 shows the total number of tests and desired.

Lesson .... Subject................

Table 5 Scope of the reading test

Topic	Objective	Content	Number of exam questions		
			Each week	Total	Selected
	Sentence structure	Sentence ordering	10	150	5
	Grammar in passage	Usage of words with different part-of-speech. Sentence pattern	10	150	5
	Types of literature - letter, email, narrative, description	Reading comprehension (short)	1	15	3
	Content comprehension	Reading comprehension (middle)	1	15	2
	Information retrieving	Reading	1	15	1

		comprehension			
Sum					16

Table 42

1) To study objective, detail of the substance content.

To measure the reading comprehension skills.

The reading section consists of grammar and reading comprehension subsections.

2) Clarify the contents of test.

（1）　　　Sentence ordering

Five single choice questions.

（2）　　　Fill in the blanks

Two passages, each with 140 words. Total five single choice questions.

To choose the best choice (conjunction, auxiliary, demonstrative words, auxiliary verbs, verb and conjugation, sentence pattern and combination, etc.) to fill in the blanks in passage.

（3）　　　Reading comprehension (short)

Three short passages with text 80-120 words in each passage. Each passage has one question with single choice and four items. Total three questions.

One passage is letter or email.

Two passages are graph, narrative or description.

（4）　　　Reading comprehension (middle)

One middle passage, 250 words, two questions, multiple choice, four items in each question.

Content comprehension.

（5）　　　Information retrieving

One information graph, less than 600 words. With one question, multiple choice and four items.

The texts are advertisements or flyers etc.

Note

To measure (3) to (5), the reading section of a practice JLPT (Japanese-Language Proficiency Test) was used. The JLPT is a standardized multiple-choice test, and it has been used internationally as a test of Japanese proficiency of non-native speakers of Japanese.

    3) *Analyze the relation about objective, concept in test.*

Test in each class are listed in appendix.

Step 6 Check by experts

Let the experts check Table (step 3) that shows the relationships and tests according to Table (step 5).

The 7 experts determine whether the topics are related and whether each exam corresponds to the contents and objectives of the study.

Experts are:

    1. Name   Research area

    2. Name   Research area

Note

(1) Experts consider the relationships between concepts and objectives in Table 4 and edit the text.

(2) Experts consider if each exam corresponds to the learning objectives in Table 4 and confirm the validity (step 6) in three aspects.

(2.1) Experts edit the text and then the author uses that information to improve (No need to calculate average).

$$\overline{X} = \frac{\sum X}{N}$$

(2.2) Each expert uses the checklist and the author obtain the average

(If the test is based on the criteria named IOC)

$$IOC = \frac{\sum R}{N}$$

If the average score is from .05-1.00, that exam is effective and passed the examination criteria .... with an average from .... to ....

(Calculate the average by item, not the total of all items)

Examples of determining consistency between exams and learning objectives

Consider each of the following exams to check if the exams match the learning objectives by ticking/marking in item 1, 0 or -1 that matches your opinion as follows

1, making for sure the test items match the learning objectives

0 when not sure if the test items match the learning objectives

-1 sure that the test item does not match the learning objectives

Assessment form 5 for reading test

Objectives	Exams	Result			Notice
		1	0	-1	
1.	1.				
	2.				

(2.3) Each expert uses the rating scale, which is popularly made into 5 levels. Then the author uses the average in item (2.2). If the average value is from 3.5 to 5.00, that exam is considered valid (Calculated the average by item, not the total from all items)

Step 7. Print the exam that has been approved by the experts, then give to students.

Implement in a non-sample group (30-50 students) and to use the test results to find the quality of the test (Must contain 20%-50% of the items).

Step 8 Check the quality

Check the quality of the exam by evaluating difficulty and power that classified into items of the model ......(Based on groups or criteria)

The difficulty values from .20 to .08 and the classification power from .20 to 1.00 are selected for use.

Exam..........Selected number.......... difficulty values from ...... to ...... and the power to classify items from .... to ....

(At this stage, the difficulty and classification power were determined. Confirm the high quality by using difficulty criteria and classification power, from .05 to .50 is feasible).

Step 9 Take the selected exam number ....

Find the whole confidence value in the form ....

The results showed that the confidence value is.........

Step 10: Print the test in the original version for data collection

In each class, an exam was administered.

The students take an exam by Tencent E-Form.

At the last class that after 12 weeks learning, the students take the final test by pencil and paper.

The time allocation for final test is 60 minutes.

5.2 Questionnaire

In the first class and the last class, the electric questionnaire was given online.

6. Analysis

Using Mean ($\bar{x}$), Standard Deviations (S.D.) and t-test (independent).

3.3 Phase III Implementation

This phase is implementation and confirmation of the instructional model effectiveness. It describes the scope, construction and development of research instruments, variables. Including population and sample, data collection, data analysis and interpretation, and statistics employed to analyze the collected data.

The study is a control group and experimental group design. The control group uses the traditional instructional methods, and the experimental group uses a new instructional model – CLAS model and lesson plan (used in phase II) to teach.

Experimental research use Max, Min, Con principle.

Max- maximum different new and old methods. Reading about innovation more and more via documents/ previews research results.

Min-mini error radiance (from data) in the research

1) sampling design

2) managing while doing research,

3) quality of the research tool (learning plan, test, questionnaire)

Con-control extraneous Varillas

1) the same teacher for each teaching method

2) the same class table/ schedule

1.   Population and Sample

The population of third-year (enrolled in 2018) students from seven participating classrooms (N = 268) majored in foreign languages who must study a second foreign language in China. In the foreign language school of the research university of the author, the students who majored in Business English study French and students who majored in English Language study Japanese as a second foreign language. Students study Japanese in four terms (two academic years) around 150 hours. From the beginning of Japanese to level four (N4 in JLPT). They start to learn Japanese from the third term and reach level 5 (N5) by the end of the fourth term. And the third-year students reach level 4 (N4) by the end of the sixth term. They start the

fourth term of the Japanese classroom learning in the first semester of the academic year 2020.

The samples are two natural class with 72 third-year students (enrolled in 2018). These subjects with different gender and age range 18 to 22. The students with the same language level (under N5) and same mean of Japanese performance tested by practice JLPT. 36 students in one class as a control group (CG) and 36 in another class as an experimental group (EG). To use traditional instructional model in the control group (CG) and the new instructional model in the experimental group (EG). The age range of the participants was between 18 and 22, the mean is 20. 98% were females and 2% were males.

2. Scope

Subject

Academic reading in Japanese language.

The textbooks named China-Japan Communication Standard Japanese (New Version) contain various literary works, such as stories, prose, drama, etc., through which certain language projects are taught.

Time scope

The time scope in this phase is from September to December 2020. Each class under the new instructional model takes 1.5 hours, twice teaching per week, lasting 12weeks, total 36 hours classroom teaching.

Place

This research will study in the School of Foreign Languages in Shaoyang University in China. In the classrooms in university.

3. Variable

The independent variable is tentative instructional model.

The dependent variables are reading comprehension skills and attitude toward reading.

4. Instruments

The instruments are Japanese reading comprehension test paper (Final) developed in phase II and questionnaire developed in the pilot study in phase II.

5. Procedure

First, using the new instructional model named CLAS model to teach the third-year students about 12 weeks (36 hours).

Second, after the treatment phase, using the final test to assess the Japanese reading comprehension skills of the students.

Moreover, questionnaires are employed to investigate the attitudes toward reading, which including students' satisfaction toward the use of the new instructional model.

Third, analyzing the achievement to assess if the new model is significance.

And if the attitudes of students are positive.

The data collection comprised of the control group and the experimental group.

6. Analysis

The data were analyzed by percentage (%), means ($\bar{x}$), Standard Deviations (S.D.), and t-test (independent).

Compare means. To compare the achievement of control group (CG) used traditional instructional model and experimental group (EG) used instructional model.

Based on the test paper scores, author uses SPSS to obtain average results and standard deviations. Compare the test results of the experimental group with the control group to check if the experimental group has a higher performance than the control group. To analyze if reading comprehension has improved.

Based on the students' self-evaluation, the researcher uses SPSS to analyze whether the reading comprehension skill has improved and whether the students are satisfied with the new instructional model.

From the results of t-test (independent) by SPSS obtain whether attitude toward reading has changed.
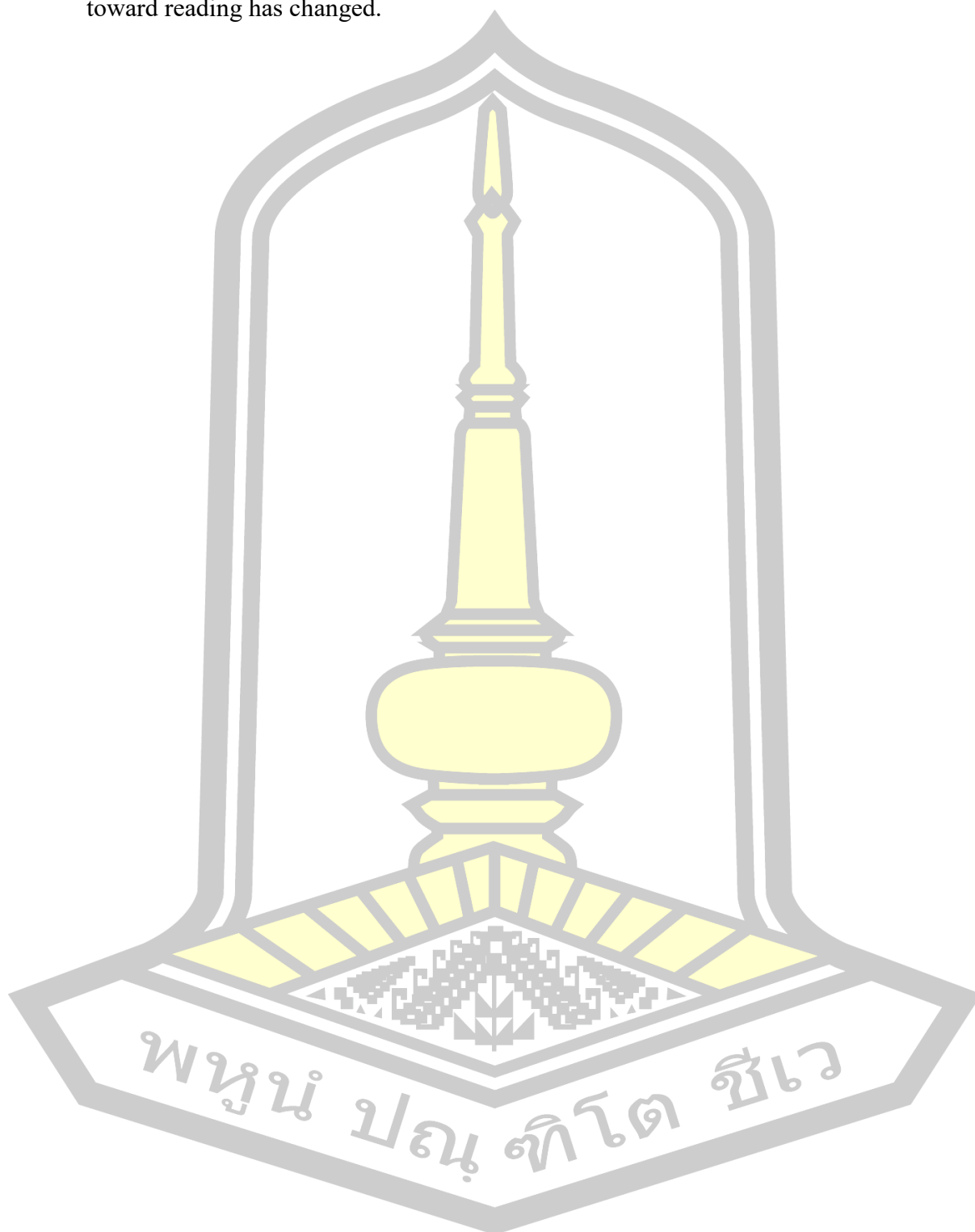
CHAPTER IV

RESULTS

The purpose of this chapter is to report results from sources used in this qualitative and quantitative study to investigate Instructional Model used at the university level to enhance Japanese reading comprehension Skills and Attitude toward Reading. All participants were from universities in China. The data was gathered over an eight-month period from August 2020 through March 2021. Students in one university and seven different universities' teachers participated in this study. The findings reported in this chapter came from information gathered through questionnaires, interviews, observations, and document analysis

This chapter has been divided into four sections. The first section is the results of phase 1 the contextual study, describes reading problems and guideline to improve reading. Section two is the results of phase 2 construct tentative model, explores the instructional model to enhance Japanese reading comprehension skills and attitude toward reading among university students. Section three is the results of phase 3 implementation, report significance of the Japanese reading comprehension skills model and traditional instructional model. The fourth section concludes with a summary of the results.

According to the three phases of research, the questions and results of the research are listed item by item.

4.1 PHASE I

Phase 1 is contextual study. The objective in this phase is to investigate the current problems in reading comprehension and attitude toward reading for Japanese language in context of university students. The research results of phase 1 are reading

problems, reading attitude problems and guideline; needs of students and guideline; needs of teachers and guideline; questionnaire, interview sheet, and guideline.

Table 43Table of research question and results in Phase 1.

Question 1	Results
Q1. What are the current problems in reading comprehension and attitude toward reading for Japanese language in context of university students?	Set 1 Intervention reading problems and guideline to improve JRC skills instructional model and the components. Set 2 Instruments for collecting data questionnaire and interview

Set 1 Intervention

The results are reading problems and guideline to improve JRC skills including instructional model and the components.

The results are described below.

Students lack linguistic knowledge and cannot use memory strategies. Students use the previously mastered native language (Chinese) and English (first foreign language) reading strategies to read Japanese articles, and students cannot use Japanese cultural knowledge.

The lack of students' linguistic knowledge is widespread in the process of encoding and decoding. The encoding is unsuccessful and there is no clue when decoding. Some students store new content in working memory and forget it quickly; some store it in long-term memory, but there is no clue to transfer it to working memory when using it.

The new model focuses on the process of information, enabling students to make up for their shortcomings.

Students lack knowledge of linguistics. In the model, the teacher guides the students to remember clues through the demonstration frame.

Be aware of your main task- using comprehension skill to get information-instead of using most of your functions by language knowledge.

1.Reading problems, reading attitude problems and guideline.

By studying the books and research papers, the researcher got the reading problems, problems of attitude toward reading, and the guideline to improve reading.

Table 44

Problem	Branch	Factor	Guideline
Lack of knowledge required for reading	Linguistic knowledge	words	1)Manage linguistic knowledge 2)Learn reading strategies 3)Reading more 4)Change reading teaching method 5)Make reading culture 6)Follow reading process in brain
		grammar	
	General knowledge	reading skills	
		cultural background	
Lack of methods to improve RCS			
Recall of central ideas was low	General knowledge - reading strategies, text structure	Retrieval (integration and inferential skills)	1 Learning knowledge of text structure 2. Employing proper reading strategies -deeper encoding strategies

vicious cycle, the poor readers get poorer Due to reciprocal relationship between reading and vocabulary growth Poor readers who often experience reading difficulties will grow to avoid reading and will miss the opportunity to gain vocabulary knowledge.	Linguistics knowledge (vocabulary)	Vocabulary, decoding	Building core vocabulary precedes text comprehension
Negative attitude toward reading, no motivation No interesting No patience No purpose No attention		Cognitive Reactions Affective Reactions Behavioral Reactions	Change reading teaching method Make reading culture Follow reading process in brain

Problems with textbooks

Problem 1-inconsistent grammatical terms

The inconsistency of grammatical terms is one of the problems in teaching materials (Lu Jing, 2020). For example, Japanese adjectives are divided into two types, but there are three kinds of expressions. The first type is "adjective" and "adjective verb"; the second type is "い-shaped adjective" and "な-shaped adjective". The classification of adjectives in "Sapphire Book N2 Grammar" and "New Complete

Mastery of N2 Grammar" is So; the third type is "first-class adjectives" and "second-class adjectives", such as "Comprehensive Japanese" (Peking University Press, 2005), "Basic Japanese", "Sino-Japanese Communication Standard Japanese" (People's Education Press, 2005)

The usage of verbs is more complicated, such as the "simplified form" in "Sino-Japanese Communication Standard Japanese" (People's Education Press, 2005), the "conjoined form" in "Comprehensive Japanese" (Peking University Press, 2005) and the "common form" in "New Complete Mastery of N2 Grammar" is the same form, but the expression of grammatical terms is not consistent.

Such as "dictionary shape". "Comprehensive Japanese" (Peking University Press, 2005) is called "verb dictionary form (verb dictionary form)", "Sino-Japanese Communication Standard Japanese" (People's Education Press, 2005) is called "basic form", and the textbook is called "the original form of the verb".

Severity

Inconsistent expressions of grammatical terms have seriously affected Japanese learners' understanding and mastery of Japanese grammar (Lu Jing, 2020). When students use reference books for self-study, they are confused and cannot solve their own difficult problems.

Solution 1

The compilation of Japanese grammar textbooks should pay attention to uniform details (Lu Jing, 2020) The teacher introduces several different terms to students. When the teacher explains, the practical vocabulary is consistent.

Problem 2-Insufficient support for teaching materials

The Japanese grammar in the textbook only has supporting audio

Solution 2

Use information technology to develop multiple and three-dimensional grammar support files, such as PPT courseware, key grammar explanation videos, electronic version of lecture notes, online courses, etc., or the key content of the textbook is attached with a QR code, so that students can scan the code to watch the key grammar analysis and learning Relevant social and cultural knowledge, etc. (Lu

Jing, 2020)

2.Reading problems, reading attitude problems, needs of students and guideline.

Students' reading problems mainly focus on limited vocabulary (93.1%), complicated grammar (60.9%), disordered sentence structure (52.2%), and lack of understanding of the subject of reading (39.1%)

By questionnaire and interview sheet, the researcher got the reading problems, reading attitude problems, needs of students and guideline to improve reading.

Lack of the skills to understand a sentence-analyze the composition of the sentence, abbreviate the sentence and then expand the sentence

Lack of the required knowledge-

Voice knowledge-seeing the voice, unable to connect the meaning. The corresponding Chinese characters can be recalled.

Vocabulary meaning (recognition after deformation, choice of meaning, fixed phrase or special meaning. Original meaning, extended meaning. Common phrases, common sentence patterns and original meanings of words),

Grammatical meaning (recognition, choice of meaning,)

Language characteristics (giving-receiving relationship, tense and posture, there are language expressions that have never been seen before, and there are places that have been misunderstood due to the influence of previous knowledge) Simplified, respectful, close and close; China: respectful but not alienated usage

Culture (expression is euphemistic, do not directly refuse; dialogue is omitted, sometimes students do not pay attention to what is omitted;)

3.Reading problems, reading attitude problems, needs of teachers and guideline.

By interview, the researcher got the problems in Japanese reading comprehension and problems of attitude toward reading among university students, needs of teachers and guideline to improve reading.

The problem 1 is students give up the analysis, directly compile the text indiscriminately, even if there are Chinese characters, do not use. The reason is not confident, resistant, thinking that they cannot recognize the meaning of the sentence.

To solve these problems, teacher guide students to analyze and encourage students. The activity is teacher involves students in discussions

The problems 2 are the grammatical knowledge learned is separated from the sentences seen in actual reading, seeing the sentence cannot be linked to the memorized knowledge. The reasons are 1) panic, fear 2) Inability to use known knowledge flexibly

To solve this problem, teacher instruct students to memorize linguistic knowledge. The activity is word presentation.

4.The components of instructional model

Component of the instructional model are, focus, syntax, rational (principles of reaction), social system, support system and application and effects.

Set 2 Instruments for collecting data

The results are questionnaire and interview sheet of reading problems and attitude toward reading. Guideline to improve reading problems

1.   Questionnaire

Scale of reading problems

Section A Linguistic knowledge

No. 1 to 15 are linguistics knowledge problems

 (Students=Ss)

Objective	Question Item detail
To confirm Ss have limit vocabulary	1. There are many new words when reading an article
To make sure Ss have limit vocabulary and no confidence	2. The vocabulary I knew cannot support me in Japanese reading practice
To determine the solutions of reading problems do not work	3. I cannot expand my vocabulary through extensive reading
To judge the Ss have no	4. The way to expand my vocabulary is to

choices to solve the reading problems. The solution is single	memorize new words in textbooks
To confirm the solution is not efficient	5. My main method of memorizing words is rote memorization
To make sure the solutions last short time and undermine self-confidence of Ss	6. I have the impression of wasting my time to remember Japanese vocabulary because very easy to forget.
To determine Ss have grammar problems	7. I do not understand the sentence structure when I read
To judge Ss do not have good reading habits and Ss have problems in attention allocation	8. When I read an article, I always pay attention to the meaning of words, and do not infer the meaning of the whole sentence through the context.
To confirm Ss do not have good reading habits and Ss have problems in attention allocation	9. When I read an article, I always focus on the grammar, and do not infer the meaning of the whole sentence through the context.
To confirm Ss have limit vocabulary and cannot apply reading strategies	10. When I read, I cannot infer the meaning of the new words from the context
To confirm Ss have limit grammar and cannot apply reading strategies	11. I cannot infer the meaning of grammar from the context when I read
To confirm Ss do not have good reading habits	12. I use a dictionary when I face new words.
To confirm the reason why Ss cannot apply reading strategies	13. I cannot predict the content of the following text because I lack linguistic knowledge, such as vocabulary and grammar
To confirm Ss have slow reading speed and the reasons.	14. My reading speed is slow because there are a lot of new words and complicated grammar in the text
To confirm Ss need to learn sentence pattern	15. Understanding Japanese sentence is difficult because the sentence pattern is too different with Chinese.

Section B Comprehension Skills

No. 1 to 18 are problems about comprehension skills

Objective	Question Item detail
Comprehension speed is slow. Reading habit not good.	1) I usually read the same sentence repeatedly when I read an article.
Do not know how to prediction. Comprehension speed is slow.	2) When I read an article, I spend a lot of time thinking about the meaning of words

Reading speed is slow.	
Comprehension speed is slow. Reading speed is slow.	3)　　When I read, I spend a lot of time analyzing the structure of the sentence
Good at decoding, poor comprehension skill.	4)　　I know the words and grammar in the sentence, but I do not know the meaning of the whole sentence
Poor summary and inductive ability	5)　　I do not know the main meaning of the paragraph I just read
Poor at memorize central idea and long time to recall	6)　　After I read an article, I cannot recall the main meaning of it
Limited content of memorizing and do not understand the purpose of the article	7)　　After reading an article, I do not know the author's point of view
Limited content of memorizing and do not simplification	8)　　I am unable to answer the questions after I read an article
Poor judgment	9)　　I cannot retrieve the required information in the article
Unable to distinguish the primary and secondary information of the article	10)　　I cannot get information from one passage quickly
Poor analysis. Do not know the text structure and paragraph type	11)　　I do not know the structural relationship between paragraphs. Such as description, compare & contrast, order & sequence, problem & solution, cause & effect.
Do not know sentence connection and conjunction	12)　　I cannot judge the logical relationship in clauses. Such as causation, parataxis and adversative.
Poor analysis.	13)　　I cannot identify the main components of complex sentences, such as subject-verb-object.
Poor comprehension and analysis	14)　　I cannot infer after I read an article
Poor summarization	15)　　I have read the first paragraph of the article and the first sentence of each paragraph, but I still cannot predict the meaning of the text.
Do not understand the genre of academic articles	16)　　I cannot search key information by scanning.
Poor comprehension	17)　　I cannot understand the article by searching key sentences
Lack of knowledge of text structure (article type, genre style), do not know the common narrative methods of the article	18)　　I cannot locate the clues of the reading questions in the article

Section C General knowledge

No. 1 to 10 are general knowledge problems

Objective	Question Item detail
To confirm Ss use reading strategies that value the meaning of words	1) When I read an article, I always use the bottom-up reading method
Lack of reading strategy, bad reading habits	2) I read one word at a time, I cannot read the sentence by phrase.
Lack of reading strategies, poor reading habits	3) When I read an article, I do not judge the topic of the article first
Do not know how to use reading strategy	4) I do not know how to infer the meaning of a sentence from the context.
Do not know how to use reading strategy	5) I do not use reading strategies, such as skimming, when I read an article
Lack of reading strategy, poor reading habits	6) I do not note something when I read article.
Lack of reading strategy	7) I do not know the keywords when I read an article
Identify students lacking cultural background knowledge	8) I do not understand the unique culture of Japan
Identify a reason that affects the reading comprehension	9) Lack of cultural background knowledge affects my understanding of articles
Lack of reading strategy.	10) Before reading, I will not study the relevant background of the text

Questionnaire of Metacognitive Awareness of Reading Strategies (post-test)

Scoring standard

Items: 3, 4, 5, 8, 11, 12, 14, 15, 17, 18

o • Strongly Agree = 1 o • Agree = 2 o • Sometimes = 3 o • Disagree = 4 o • Strongly Disagree = 5

Items: 1, 2, 6, 7, 9, 10, 13, 16, 19, 20

o Strongly Agree = 5 o Agree = 4 o Sometimes = 3 o Disagree = 2 o Strongly Disagree = 1

The higher the score (maximum 100) on the scale the more dogmatic (i.e. closeminded) the person is, and the more their beliefs are "set in stone". As people get older they usually become more dogmatic (set in their ways). Also, people who are dogmatic tend to hold more prejudice views about different social groups.

1. I have a purpose in mind when I read Japanese text.

2. I take notes while reading to help me understand what I'm reading.

3. I think about what I know to help me understand what I'm reading.

4. I preview the text to see what it's about before reading it.

5. When text becomes difficult, I read aloud to help me understand what I'm reading.

6. I think about whether the content of the text fits my purpose.

7. I read slowly but carefully to be sure I understand what I'm reading.

8. I discuss my reading with others to check my understanding.

9. I try to get back on track when I lose concentration.

10. I underline or circle information in the text to help me remember it.

11. I adjust my reading speed according to what I'm reading.

12. I decide what to read closely and what to ignore.

13. I use reference materials such as dictionaries (App) to help me understand what I'm reading.

14. When text becomes difficult, I begin to pay closer attention to what I'm reading.

15. I use tables, figures, and pictures in text to increase my understanding.

16. I stop from time to time to think about what I'm reading.

17. I use context clues to help me better understand what I'm reading.

18.	I paraphrase (restate ideas in my own words) to better understand what I'm reading.
19.	I try to picture or visualize information to help me remember what I'm reading.
20.	I use typographical aids like boldface type and italics to identify key information.

21.	I go back and forth in the text to find relationships among ideas in it.
22.	I check my understanding when I come across conflicting information.
23.	I try to guess what the text is about when reading.
24.	When text becomes difficult, I reread to increase my understanding.
25.	I ask myself questions I like to have answered in the text.
26.	I check to see if my guesses about the text are right or wrong.
27.	I try to guess the meaning of unknown words or phrases.

Scale of attitude toward reading

Attitude toward reading

No. 1 to 37 are problems of attitude toward reading

Objective	Question Item detail
Ss are not motivated	1) I am not motivated to read articles
Ss are not positive thinking in reading	2) I worried when the teacher asks me questions about what I read.
No motivation	3) I do not understand why I study Japanese and it means nothing to me.
Ss know the importance of reading,	4) I think reading many books enables

but do not want to spend time on Japanese reading. The motivation is not strong	us to acquire depth of knowledge and sophistication. But I have no time to read Japanese article
Ss recognize their lacks in reading	5) I do not think my reading comprehension skill is advanced.
Students have no confidence to master reading skills	6) I will not have made much progress in Japanese reading skills in the next year.
Ss have panic about new words	7) I get panic when I read new words in sentences
Ss are anxious when they do not understand the meaning of sentences	8) I feel anxious if I do not know all the words.
Ss do not have a correct understanding of the reading class	9) I will be shy to ask reading questions in class
Ss do not have long essay training and reading methods improper	10) I feel tired when I am presented with a long text.
Ss are not positive thinking in reading	11) I am unhappy when reading Japanese articles
Ss not interested in academic reading	12) I like reading Japanese articles if the contents interested me
Ss do not like academic reading	13) I am not interested in academic reading
The textbook is not proper	14) I do not like reading, because the content of the textbook is not attractive
One reason why reading attitude is not positive	15) I do not like reading because there are too many new words
One reason why reading attitude is not positive	16) I do not like reading because I do not understand sentence structure
teaching methods are not good	17) I do not like teachers' teaching method
Identify methods for students to	18) I like to read the Japanese culture

expand cultural background knowledge	introduced in Chinese.
Identify classroom activities for reading lessons	19) I like to learn about Japanese culture because I have a positive attitude toward Japanese popular culture, such as cartoons, drama.
Determine the content of extracurricular supplementary materials that students need	20) The content of 'Japanese society and culture' in the textbook is not attractive
Active reading requires additional vocabulary support	21) I do not read Japanese of 'Japanese society and culture' in the textbook because there are too many new words
Determine that the original classroom activities are not suitable	22) I do not like activities in reading class
Determine students need appropriate classroom activities	23) Activities before reading can mobilize my interest in learning
When there is a solution to the problem, there is motivation to learn	24) I experience the enjoyment when I grasp a difficult construct in Japanese.
Students are biased in understanding sentences Students believe that the appearance of new words seriously affects the understanding of sentences	25) I cannot understand the meaning of the whole sentence if there are new words.
no patience	26) I am impatient when reading
cannot concentrate on reading	27) I cannot concentrate when I am reading
Reading purpose is unclear	28) I have no clear purpose of reading
Panic when reading	29) I avoid reading the original text when Japanese text has Chinese translation
reading attitude is not positive	30) I do not take the initiative to read Japanese articles

negative reading attitude	31) I resist reading Japanese articles
not enthusiastic about reading, and don't have appropriate reading materials	32) I have not read Japanese articles except for textbooks
teaching methods are not good	33) I have no reading skills because teachers only teach grammar
no motivation	34) After reading the article, I do not want to answer questions asked by teachers
Make sure that students' reading questions are not answered	35) After reading an article, I have too many questions that I wish someone may help me solve them.
Determine students need reading culture	36) I do not read because there is no cultural environment for reading
Do not be motivated. Affecting reading attitude	37) I have a negative attitude toward Japanese culture or society. That cause me do not want to study Japanese

Analyzed by SPSS

Scale after reliability analysis

1) I am not motivated to read articles
2) I worried when the teacher asks me questions about what I read.
4) I think reading many books enables us to acquire a depth of knowledge and sophistication. But I have no time to read a Japanese article
5) I do not think my reading comprehension skill is advanced.
7) I get panic when I read new words in sentences
8) I feel anxious if I do not know all the words.
9) I will be shy to ask reading questions in class

10) I feel tired when I am presented with a long text.
11) I am unhappy when reading Japanese articles
13) I am not interested in academic reading
14) I do not like reading, because the content of the textbook is not attractive
15) I do not like reading because there are too many new words
16) I do not like reading because I do not understand sentence structure
21) I do not read Japanese of 'Japanese society and culture' in the textbook because there are too many new words
22) I do not like activities in reading class
25) I cannot understand the meaning of the whole sentence if there are new words.
26) I am impatient when reading
27) I cannot concentrate when I am reading
28) I have no clear purpose for reading
29) I avoid reading the original text when Japanese text has a Chinese translation
30) I do not take the initiative to read Japanese articles
31) I resist reading Japanese articles
32) I have not read Japanese articles except for textbooks
33) I have no reading skills because teachers only teach grammar
34) After reading the article, I do not want to answer questions asked by teachers
36) I do not read because there is no cultural environment for reading

Scale of attitude toward reading

The cognitive aspects

1) I am not motivated to read articles

4) I think reading many books enables us to acquire a depth of knowledge and sophistication. But I have no time to read a Japanese article
5) I do not think my reading comprehension skill is advanced.
6) I will not have made much progress in Japanese reading skills in the next year.
25) I cannot understand the meaning of the whole sentence if there are new words.
28) I have no clear purpose for reading
33) I have no reading skills because teachers only teach grammar

Emotional aspects

2) I worried when the teacher asks me questions about what I read.
7) I get panic when I read new words in sentences
8) I feel anxious if I do not know all the words.
11) I am unhappy when reading Japanese articles
13) I am not interested in academic reading
14) I do not like reading, because the content of the textbook is not attractive
15) I do not like reading because there are too many new words
16) I do not like reading because I do not understand sentence structure
22) I do not like activities in reading class
26) I am impatient when reading
27) I cannot concentrate when I am reading

Behavior aspects

9) I will be shy to ask reading questions in class
10) I feel tired when I am presented with a long text.
21) I do not read Japanese of 'Japanese society and culture' in the textbook because

there are too many new words
29) I avoid reading the original text when Japanese text has a Chinese translation
30) I do not take the initiative to read Japanese articles
31) I resist reading Japanese articles
32) I have not read Japanese articles except for textbooks
34) After reading the article, I do not want to answer questions asked by teachers
36) I do not read because there is no cultural environment for reading

2.   Interview

Assessment form 2 for interview questions

No. 1 to 9 are interview questions for teachers

Component	Objective	Question Item detail	IOC		
			+1	0	-1
1. Linguistics knowledge	To check if the students lack of linguistics knowledge. And if the students have strategies to remember the linguistics knowledge.	1) Do your students lack linguistic knowledge when reading Japanese articles? For example, words and grammar.	✓		
		2) Are your students not good at memorizing words and grammar?	✓		
2. Background knowledge	To check if the students lack of background knowledge.	3) Do your students lack background knowledge when reading Japanese articles?	✓		
		4) Do they get the background knowledge from reading Japanese article?	✓		
3. Reading strategies	To check if the students lack of	5) What reading strategies do your	✓		

	reading strategies. If the students could use the reading strategies.	students often use when reading Japanese articles?　6)　Are they good at inferring and predict?	✓		
4.Reading attitude	To check the attitude toward reading of the students.	7)　Are your students' attitudes positive when reading Japanese articles?　8)　Are they interested in the text?	✓ ✓		
5.Classroom activities	To check if the students like the classroom activities.	9)　What classroom activities do you use to promote active reading?　10)　Such as role-playing, group discussions, and presentations.	✓ ✓		

4.2 PHASE 2

Phase 2 is Construct tentative model. The objective in this phase is to develop an instructional model to enhance Japanese reading comprehension skills and attitude toward reading among university students.

Table 45Table of research question and results in Phase 2.

Question 2	Results
Q2. What are the components of the instructional model to enhance Japanese reading comprehension skills and attitude toward reading among university students?	Set 1 Intervention Tentative instructional model lesson plan Set 2 Instruments for collecting data test paper, attitude questionnaire,

	observation form
	Significance of the Tentative IM

The results are described below.

Ask experts to analyze and confirm the tentative instructional model, lesson plan, Japanese reading comprehension test paper, attitude questionnaire and interview sheet for students, observation form (attitude toward reading, reading comprehension skill)

Test in a class and modify the model according to the actual teaching effect (test paper, attitude questionnaire, observation table). Analyze the significance of the Tentative IM

Set 1 Intervention

1.Instructional model

Chart 3 The components of instructional model

Component	Content
Focus	Enhance reading comprehension skills
Syntax	concentration, learning new knowledge, application, Summary and assignment
Rational	The interaction environment
Social System	Teacher as a guide. Students as cooperators
Support system	Well-organized materials. Multimedia.
Application and effects	Reading comprehension skills. Positive attitude toward reading

Chart 4 The tentative CLAS model

Focus	Rational	Syntax	Social system	Support system	Application and effects
To enhance Japanese reading comprehension skill of university students	Peaceful activities	Step 1 concentration	T: Guider S: Meditator	Peaceful environment slide	Habit of concentration
	Natural social process	Step 2 learning new knowledge	T: Instructor S: Follower	Well-organized materials. Multimedia Learning software	Conceptual structure
	The interaction environment	Step 3 application	S: Follower T: Encourager	Small-scale group discussions	Reading strategy of sentence
	Learning environment	Step 4 Summary and assignment	T: Reminder S: Cooperator	Peer cooperation Variety of media resources	Interesting of reading.

Significance of the Tentative IM

Expert meeting to make suggestions.

Ask an expert to rate the model.

In the trial class, the teacher teaches according to the content of the model, and the students conduct activities and study very seriously in accordance with the requirements of the model.

The teacher felt that the classroom effect was very good. Including students studying seriously, active classroom activities, and generally high scores on quizzes.

The reading performance of students is higher in the post-test than in the pre-test.

Students have a positive attitude. Attending the lectures earnestly, showing a very high motivation to acquire knowledge. The correct rate of homework after class is high.

Implementation and confirmation of the effectiveness of the teaching model.

The traditional instructional model

The traditional lesson plan follows the same textbooks

The textbook suggests teaching each lesson in 6 periods (4.5 hours).

Each lesson following five steps: warm up, presentation, practice, production, wrap-up.

Step 1 Warm-up.

Quiz. And review the knowledge in the last class.

Step 2 Presentation.

Learning new vocabulary while listening to the recording.

And read the text loudly.

Learning the new sentence pattern.

Step 3 Practice.

Write down the answer to the practice and check the correction of the answer.

Use the pen-paper and also do oral practices.

Step 4 Production.

To do reading comprehension and answer the questions after reading.

Step 5 Wrap-up.

Review the new vocabulary, grammar, and the meanings of the texts. Reading text loudly.

The traditional lesson plan focuses on vocabulary and grammar in each lesson, students and teachers treat the text in the textbook as the practice of using the linguistics knowledge.

2. Lesson plan

Lesson plan was used in 12 weeks, during September to December 2020. Each week has 3 hours teaching.

Relearning table

The number in the table of review cycle is elapsed time since learning.

It is from 5 mins, to 12hours, to 1day, until 6 months.

Ebbinghaus forgetting curve review schedule

Item：

N o.	Study date	Learning Content	Short-term memory review cycle			Long-term memory review cycle (tick after review)							
			5 mins	30 mins	12 hours	1d ay	2da ys	4 da ys	7 da ys	15 da ys	1 mo nth	3 mo nths	6 mo nths
1	(Month) (Day)		1	1	1	-	-	-	-	-	-	-	-
2	(Month) (Day)		2	2	2	1	-	-	-	-	-	-	-
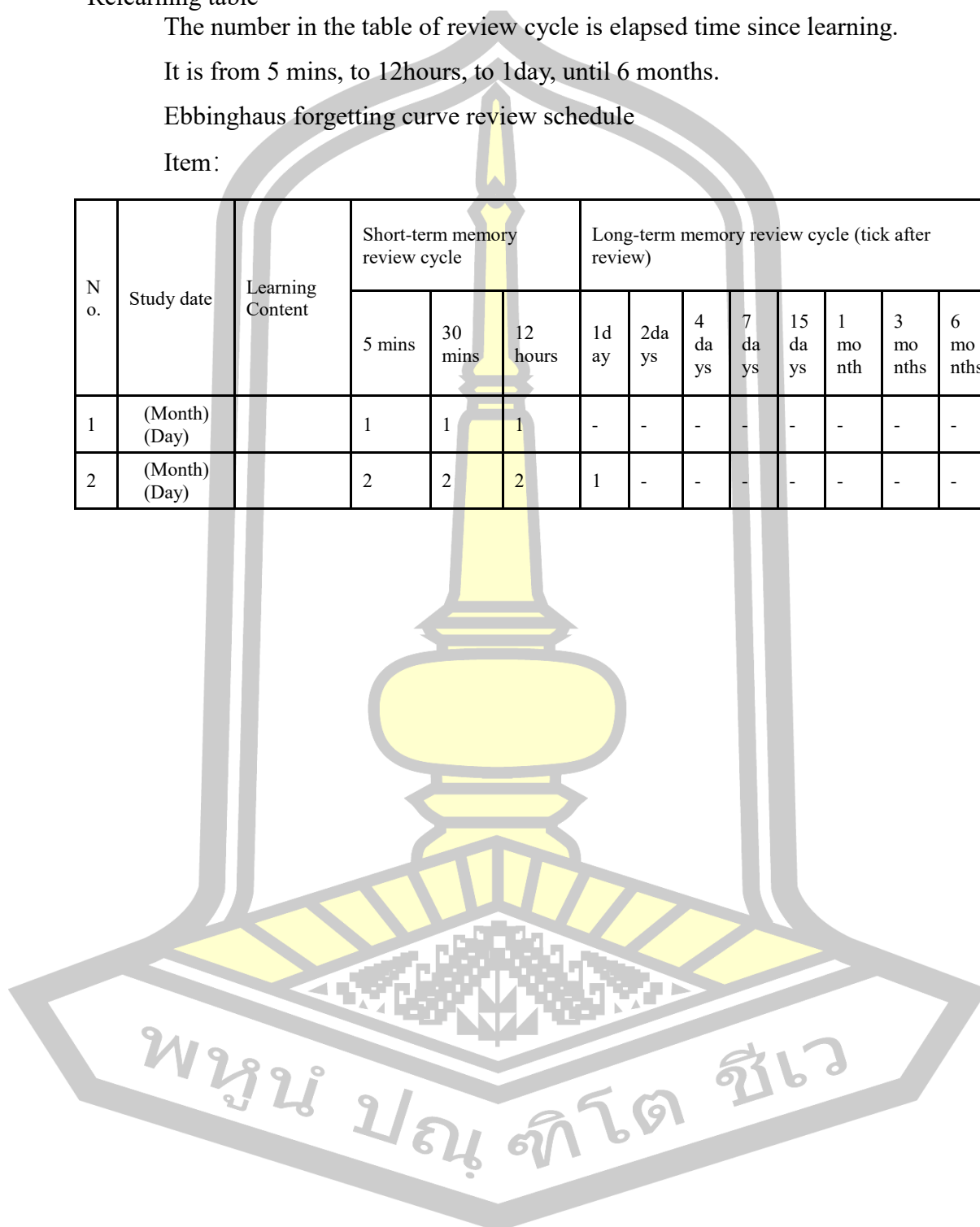
Relearning table for EG

Table 46Relearning table

Item:

No.	Date	Learning Content		Long-term memory review cycle (tick after review)					
---	---	Class 3	Class 4	1day	2days	4 days	7 days	15 days	1 month
1	1105	**Vocabulary learning (Lesson 28)**		-	-	-	-	-	-
2	1106	Reading vocabulary (AI Japanese, app)		**1**	-	-	-	-	-
3	1107	Zuizui Japanese, app			**1**	-	-	-	-
4	1108					-	-	-	-
5	1109	**Grammar learning-Command form, Expression of command (Lesson 29)**				1 The seventh unit test (grammar and Japanese-Chinese translation), students review by themselves;	-	-	-
6	1110	**Command form**	Command form, the expression of commands Lesson 29	5		The seventh unit test (words and Chinese-Japanese translation), learn to pass			
7	1111	**Command form**- inflection practice		6	5	Review Unit 7			

#	Code	Description								
8	1112	Vocabulary Quiz 28, not done			7	6	Review Unit 7	1	-	-
9	1113	Imperative sentence deformation	Imperative sentence deformation			7	5		-	-
10	1114	Lesson 28-Practice	Lesson 28 exercises				6 Review Unit 7		-	-
11	1115						7		-	-
12	1116	Command expression						5	-	-
13	1117	28 application text	28 application text					6 Review U7	-	-
14	1118							7	-	-
15	1119	Vocabulary lesson 28, classes 3. Recite 25-29 in class, all sent out							-	-
16	1120		Will form	15					1	-
17	1121			16	15					-
18	1122				16					-
19	1123					15				-
20	1124	Command expression				16			5	-
21	1125								6 Review U7	-

22	1126			15	7	-
23	1127			16		-
30	1204				15	-
31	1205	Vocabulary 28 Class 3			16	1
35	1209	Command expression				5 Review U7
36	1210					6
37	1211					7

Testing Tool - Quiz in class

There is a quiz in each class.

EG does not recite a word, but presents it in the form of a sentence. Try to use the original text in the book or the new words that appear in this lesson to form a sentence.

Example: phrases in Lesson 27

1. バスケットボール	1．basketball
2. ダンス	2．dance
3. スポーツセンター	3．Sports center
4. アルバイト	4．Work study
5. スピーチ	5．speech
6. グラフ	6．chart

1) 日本の経済	1. Japan's economy
2) 高校の教師	2. High school teachers
3) お年寄りの日記	3. Old man's diary
4) 入園料を払う	4. Pay the entrance fee
5) 明るい曲を聞く	5. Listen to bright music
6) 詩を書く	6. Write poetry
7) 信号が青だ	7. The traffic light is green
8) はさみを使う	8. Use scissors
9) アルバイトをする	9. Part-time work
10)　　ご飯を食べる	10. Take meal
11)　　スポーツセンターに通う	11. Go (round trip) to the sports center
12)　　大勢の人が集まる	12. Many people get together
	13. Dancing ballroom dance
	14. Need (No) Passport
	15. Clapping

13) 社交ダンスを踊る	16.Put in granulated sugar
14) パスポートがい	17. Quarrel with friends
る・	18.Talk to your parents
パスポートがいらない	19. So to speak
15) 手を叩く	20. Perception
16) 砂糖を入れる	21. Long time no see
17) 友達と喧嘩する	22. Flights to Shanghai
18) 両親に相談する	
19) そう言えば	
20) 気がつく	
21) しばらくです	
22) 上海行きの便	

Set 2 Instruments for collecting data

The results are reading test paper and reading attitude scale.

1. Test paper

Pre-test all students. Obtain the students' true mastery of Japanese.

The content of the exam is based on the knowledge of the textbook's students learned last semester.

Students use their mobile phones to participate in online tests in the classroom and complete the questions within a limited time. Teachers supervise in the classroom to prevent students from cheating. At the same time, the software controls students to not jump out of the test paper page during the answer to prevent students from cheating.

"Japanese (3)" Course Test Paper (A Volume)

This test paper is for undergraduate English majors in the 2018 grade of the School of Foreign Languages

Exam hours: 120 Total score: 100

1. Write the foreign language, "Chinese character" and pronunciation corresponding to the underlined word (1 point for each, 15 points in total)

2. Multiple-choice questions (1 point for each sub-question, 10 points in total)

3. Read the article and answer the questions (2 points for each question, 50 points in total)

Four reading essays, short essays, all within 250 words,

The content of the article involves: social status survey (2 articles, text, pictures and text combined), historical stories, daily dialogues

Evaluation methods include: selecting appropriate vocabulary to fill in the blanks (word meaning, grammar), filling in the blanks based on the content of the article, and judging whether the title is consistent with the original text

4. Translate the following sentences into Chinese (2 points for each, 10 points in total)

Sentence examples in the textbook

5. Translate the following sentences into Japanese (3 points for each, 15 points in total)

Sentence examples in the textbook

There is a Japanese prompt.

2. Attitude questionnaire

The attitude questionnaire is same with phase 1.

3. Observation form

When using the CLAS model in the experimental group, students concentrated on learning in class, actively answered questions, and enthusiastically participated in classroom activities. Interested in the content of the lecture, not negative when reading.

In the trial class, the teacher teaches according to the content of the model, and the students conduct activities and study very seriously in accordance with the requirements of the model. The teacher felt that the classroom effect was very good. Including students studying seriously, active classroom activities, and generally high scores on quizzes. The reading performance of students is higher in the post-test than in the pre-test. Students have a positive attitude. Attending the lectures earnestly, showing a very high motivation to acquire knowledge. The correct rate of homework after class is high.

But during the initial use of the new instructional model, many unexpected situations were encountered.

When the teacher was in the trial class, he found that students who should have reached the N5 level, because of the epidemic, used a computer at home to receive Japanese teaching for several months. The students were not used to this online learning, and their Japanese proficiency had not reached N5.

In accordance with the new instructional model for teaching, the trial class has a high degree of cooperation, high reading motivation in the classroom, and a high score for linguistic knowledge in the weekday quizzes.

However, when the experimental group was used, the students were unwilling to cooperate, and the teacher kept making changes according to the actual situation until the end of the semester.

With the use of the CLAS model, teachers observe the situation that is not conducive to the implementation of the model. Teachers use Action research to solve the actual problems encountered. The following is a partial record.
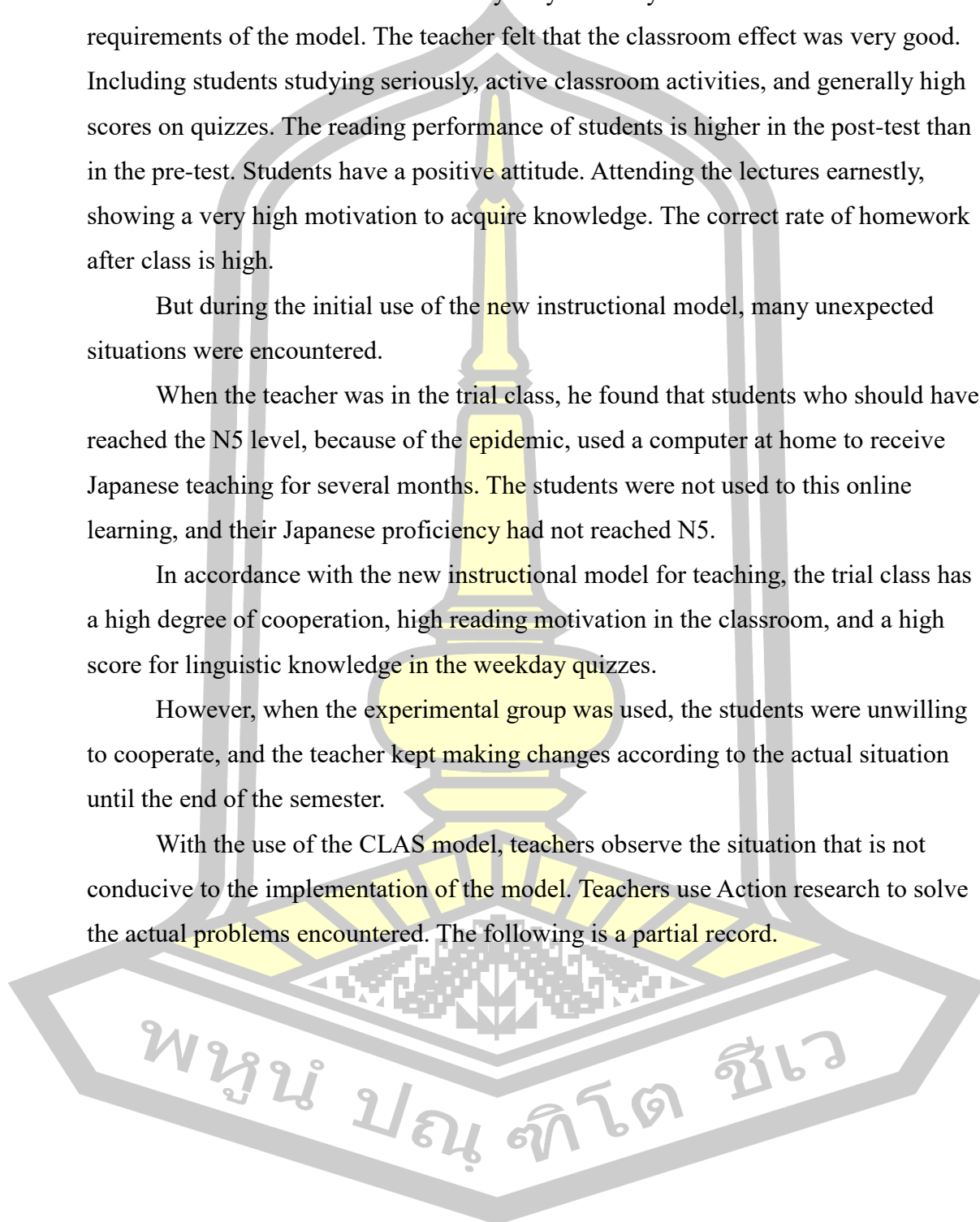
Table 47 Problems with model using

	Problems	Solution	New problems
Plan	Using model to enhance the achievement	Promote non-teacher-centered IM	Teachers give students time to adjust.
Action	To use the new model	The teacher does not change the syntax, only adjusts classroom activities	Give students help. Guide students to adapt to the new model.
Observe	Students do not cooperate with the new teaching model	Some classes cooperate. Some classes do not cooperate.	In the learning activities, students have achieved as much as in the old instruction model. And have a positive attitude
Reflect	Students are accustomed to the teacher-centered teaching method. It is difficult to change the students' perspectives.	The implementation of the model needs to be changed according to the characteristics of the specific class members. If it cannot be implemented, the teacher should seek a solution through communication with the students.	The teacher's class score reward policy plays a positive role.

Table 48 Strategies for reading long sentences.

	Problems	Solutions / New problems	New solution	
Plan	Read long sentences	1 Students master the method of reading long sentences. 2 Reduce panic	Let students have meta-cognition to analyze sentence components	1 Promote students to analyze the main body by reciting long sentences 2 Students remember the pronunciation of words

Action	Students practice reading long sentences	Lead the student to find out the key word. Find out the structure. For example, to find out the SVO. 2. Practice guessing the meaning of sentences.	Let students do translation exercises and share their own methods.	1 Ask Students to speak the sentences out again and again 2 (1) To remember a sentence instead of one word (2) During the test, students are required to write the pronunciation of Chinese characters in addition to Chinese characters. (3) Ask students to correct errors in the test. Failure to correct will be punished.
Observe	The student's ability to read long sentences is not strong, especially complex long sentences. 1. The way students read sentences, they are accustomed to translating the whole sentence from front to back in word order. 2. When there are unrecognized words, students will panic,	1 Under the guidance of the teacher, students can analyze the main body of long sentences and translate them into their native language. When students analyze sentences on their own, they do not believe in the role of the backbone. I think the solution is to memorize the words and remember the grammar, instead of grasping the meaning of the sentence as a whole.	1. Some students guess the meaning of the sentence without a basis. Some students translate all the words into their native language and then mix them into one sentence. If it is not logical, they will give up the translation. 2. Ss just remembered the forms of the words but do not know the sounds	1. Students can recite fluently. 2 (1) The students think that the memorized sentences have no practical use value, and they did not play a guiding role when doing the questions. (2) It is difficult for students to remember. Once I remember it wrong, I always write it

	thinking in a state of confusion, and unable to understand the whole sentence.	2 The students guessed the meaning of the sentence while ignoring the meaning of some words. The students are very happy in the practice activities.		wrong and it is difficult to correct it. (3) Students do not modify the wrong test answers and make mistakes of the same content many times. Punishment also has no initiative.
Reflect	Students are affected by new words and cannot continue reading. No sense of analysis,	Scaffolding takes effect. Students feel the joy of learning.	It takes time to change habits. Students firmly believe that they must know all the words to be able to recognize the meaning of the sentence. When students see that there are many new words in the reading comprehension article during the exam, they just give up reading.	Not paying attention. Hard to make Ss change habit Students have a lot of resistance.。

Table 49Lesson plan

Students have Linguistics knowledge problems.

This solution is

1. Teachers and students find the corresponding mnemonic. Vocabulary explained by students and supplemented by teachers.

2. Do not remember individual words, but phrases and sentences. Teachers do not test individual vocabulary, but pass test phrases, sentences and recite example sentences.

The following table lists the steps to solve the problem.

Table 50

	Problem 1	Solution 1 Problem 2	Solution 2 Problem 3	Solution 3 Problem 4	Solution 4 Problem 5	Solution 5
Plan	Recite 25 lessons of linguistics	1. A responsible group is responsible for explaining the words of each lesson and suggesting mnemonics. 2. Students remember phrases and sentences	1 (1) Add mnemonics. 1 (2) Classes that refuse to explain words will be explained by the teacher. 2 (1) Teachers provide phrases (2) Just be familiar with the sentence	1. Frequent use of mnemonics 2 (1) Review with scientific memory method. (2) Let students with low ability levels participate in learning	1. Diversified assessment 2. Set up people who remind students to review	1. Students have moderate freedom
Action	Assessment of linguistic	1. Demonstration in the class of the	1 (1) The teacher	1. Teachers often mention mnemonics	1. Recite the vocabulary app,	1. Students do not need to

knowledge	responsible group 2. The responsibility group composes newly learned words and grammar into phrases and releases them. Use the example sentences in the book to memorize words.	positively evaluates the responsible persons with rich mnemonic methods. The students encourage the active presenter with applause. 1 (2) Teachers share interesting methods of memorizing new words in the form of lectures. 2 (1) The teacher publishes each lesson phrase on the learning app. (2) Students can't memorize sentences, use proficient reading instead	corresponding to linguistic knowledge. In Q&A, when students don't know, they repeatedly mention it to deepen the impression. 2 (1) Students review according to the relearning table (2) As long as students read or answer questions, teachers actively encourage them regardless of fluency, right or wrong. Those who have failed the test, enter the group, check in and recite four sentences every day	recite in class, dictate, send recitation audio. Tell the students that in the final review, they will examine the pronunciation of Chinese characters to increase motivation. 2. The teacher and the person in charge of each lesson remind the review according to the timetable, and announce the specific test time. The teacher contacts the class leader to find out the situation.	participate in all projects according to their actual needs

| Observe -Old & New Problems Unresolved problems | The student's problems are 1. Unable to memorize a large number of words at once. It is easy to forget after remembering. 2. Memorized the words and grammar and can't use it. | 1 (1) During the presentation, students listened carefully and thought that the effect of memorizing words was good. The students in the responsible group only read a few words they are responsible for, which is not very helpful for memorizing the words. 1 (2) Some experimental classes directly refused to explain and asked the teacher to explain. 2 (1) The phrase released by the responsible group uses a large number of extracurricular words, which creates a burden on students. (2) There will always be students who fail | 1. Students choose the memory method that suits them. But there are still difficulties. 2 (1) Students actively ask teachers to publish phrases. Some students memorized phrases before the assessment, but they did not form a long-term memory. (2) Some students can't do it if they are familiar with it. High level Students not good at speaking. | 1. The pass rate is very high in the paper and pencil assessment of phrases. For students with high test scores, when remembering phrases, they only remember Chinese characters, not pronunciation. 2 (1) The teacher does not know whether the student has reviewed. (2) Some students are very positive when answering questions. Some students don't care. | 1. The students are very busy. 2. Students show a positive learning attitude. | In the Final test, students scored high in vocabulary and translation. Some classes did not improve. |

Reflect the cause of the result	1. The efficiency of mechanical memory is low. The vocabulary is in working memory, and it is forgotten after a long time. 2. No words or grammar are used.	1 (1) The students themselves cannot remember words, nor can they share useful mnemonics. 1 (2) Students are accustomed to lecture-based learning and are unwilling to actively think. And I don't pay much attention to Japanese, and I don't want to spend time preparing in advance and looking for mnemonics. Students do not approve of the "students speak words" method. 2 (1) Students in the responsible group use translation software and cannot control their vocabulary	1. Students believe in mechanical memory and have no habit of using mnemonics. 2 (1) I don't know the scientific method, or have not reviewed the method according to the method. (2) The students have poor language foundation. High-level students have strong test abilities but poor other abilities.	1. relearning table, revised from Ebbinghaus's forgetting curve review schedule, Students believe in the scientific method. Different memorizing methods will increase the efficiency and accuracy of memorizing words. Paper and pen assessment has shortcomings. 2 (1) Students lack feedback channels. (2) Students have no learning needs.	1. There are many assessment tasks. There are many exams in the school, and students don't have time to study Japanese.	To provide students with the support they need, whether students need to improve their Japanese performance should be considered in combination with their actual situation. Some students are busy completing learning tasks and do not store the learning content in long-term memory.
	the sentence recitation test.					

Table 51Make a sentence

| | | (2) The students have poor foundation or poor memory. | |

	Problem 1	Solution 1 / Problem 2	Solution 2
Plan	Students use the newly learned grammar to make sentences	Not completely let students make sentences by themselves	Ask Ss by different level
Action	Ask students to make sentences. Written and oral.	The teacher prepares some sentences in advance. When students cannot make a sentence, or make a similar sentence, use the words and grammar in the textbook provided by the teacher to make a new sentence.	When asking questions, the questions are graded according to the students' pre-test results. 1. Question the content in the question book for students with poor grades, and the practical content that is not written in the question book for students with good grades. 2 For students with good grades, make complex sentences and extra-curricular sentences. For students with poor grades, make simple sentences.
Observe	1.When oral and written answers, students have made the same simple sentences. 2.In written assignments, few students have created very complex sentences, which are not	Students can make complete sentences. Students play freely within the framework. Some students are still unable to make sentences and are very embarrassed.	Students can complete their own sentence-making tasks. And listen carefully to the complicated sentences made by high-level students.

	suitable for most students to understand.	The students have completed tasks within their abilities. Get a sense of accomplishment. Students can also get different degrees of improvement.
Reflect	1.Student life is not colorful. The sentences that can be made are similar in content. 2.There are not many sentence patterns that students master, and the sentence types they can make are the same. 3 It is not conducive for students to think about themselves.	Some students have a high level of Japanese, while others have a particularly poor foundation.

Table 52Learning activities toward attitude

Attitudes are divided into Awareness, Emotional, and Behavior. Through the test, it was found that the students did not

particularly dislike Japanese. There is no particular hatred for Japanese reading emotionally. I don't think that learning Japanese is

useless. But no action was taken in behavior.

The control group encountered problems with vocabulary and structure during reading.

The experimental group tended to read articles without too many obstacles in vocabulary structure.

Table 53

Solutions	New solution

	Problems	New problems	
Plan	Through dubbing to alleviate students' resistance to Japanese, learning becomes interesting and students have the awareness that reading more is helpful to improve their grades.	Give students more options for dubbing content. Encourage students to dub more.	Encourage high-quality dubbing activities.
Action	Students use the dubbing app to dub texts and interesting extracurricular content.	Students choose low-level content dubbing. Teachers give students extra points rewards.	Teachers play excellent dubbing works in class.
Observe	Good students can do it perfectly. Students who read poorly spent a lot of time, and the final result was still not satisfactory.	Students choose too simple dubbing files for dubbing, which has no effect on the improvement of Japanese proficiency.	The students have great interest. Even if the content is simple, the exaggerated dubbing is also popular with students. Students admire fluent, high-quality dubbing. The picture is unattractive, and the dubbed content is dull, and the students are not interested.
Reflect	The student base is different. The teacher's requirements need to give students more choices based on the actual situation.	Students are too pursuing assessment scores.	Students are interested in different directions. The teacher stipulates some dubbing content. After repeated practice, the students upload the dubbing file. The effect is better than letting the students read the text.

Table 54 Learning environment

	Problem 1	Solution 1 Problem 2	Solution 2 Problem 3	Solution 3
Plan	Q&A	Change the silent environment to form an active learning environment in the classroom.	1 Form the atmosphere of discussion. 2 Promote the completion of the task	One-on-one questioning
Action	The teacher asks students to ask questions, or volunteer to answer questions	1 The teacher allows students to discuss in groups. 2 The teacher leaves the students with post-class tasks.	1Peer discussion 2 Let the class leader arrange the responsibility group to do the task.	1 When the teacher asks a question, choose a student to answer the question. 2 If you make a mistake or can't answer, ask the team members to help.
Observe	The students are too quiet in class. Look down at your book more and listen to the teacher's explanation. Students do not ask questions in class, and do not take the initiative to answer teachers' questions.	1 There is a lively discussion in the class, and the duration is long. In some classes, students are unwilling to discuss in groups, and tend to ask teachers to speak, and students only listen and remember. 2 Students in the class responded positively and completed the task. Some classes refuse to do tasks, thinking it is a waste of time.	1 After the teacher's question was raised, the students refused to discuss it, thinking that there was no need for discussion. 2 The student has done the task, which is helpful to the study.	The questioned student bowed his head and did not answer, or looked around, or had a particularly low voice. The grades of the marked class answering questions were mostly X (failed). The group usually selects members of the Japanese high level to answer the questions.
Reflect	Students do not master the	1 The seats of the group	1 It is difficult for teachers to	Students without any learning

corresponding knowledge. Can't ask questions. Students are accustomed to a quiet classroom environment. Teachers often require students to keep quiet in class. According to the questionnaire survey, the ranking of students' problem-solving methods is as follows: firstly, they read books by themselves, secondly ask their classmates, and finally ask the teacher.	members are not together, and the students are unwilling to adjust their positions for discussion. 2 It is related to the active coordination of the class leader (student cadre). It is also related to the characteristics of the class and the character of the students.	change the classroom environment. In the class that refuses to discuss, they can only comply with the requirements of students. The teacher asks questions directly to the students. 2 When facing the resistance of students, teachers should consider the actual situation of the students on the one hand, and ensure the learning effect on the other hand. Some beliefs must be kept.	needs will not participate in and support classroom activities. But there will be members in the same group who can play a role as a support. Teachers need to obtain feedback from students in a variety of ways. What is obtained solely through observation may be an illusion, and students should be tested frequently for horizontal comparison of several classes.

4.3 PHASE 3

Phase 3 is Implementation. The two objectives in this phase are to study the results of using the instructional model by mean of reading comprehension skills, and to study the results of using the instructional model by mean of attitude toward reading.

Table of research questions and results in Phase 3.

Table 55

Question 3 & 4	Results
Q3. How does the instructional model enhance Japanese reading comprehension skills among university students works? Q4. How does the instructional model enhance attitude toward reading among university students works?	Result 3 Improved reading comprehension skills. Result 4 Reading attitude is positive.

The result of the third stage is that the new teaching method is remarkable.

Compared with the CG using the traditional method, the EG using the new teaching method has improved reading comprehension skills and a positive reading attitude.

Through specific analysis, EG has a better grasp of the basic knowledge than CG. CG spends more energy on the memory of vocabulary and language points, while EG is more inclined to grasp the entire chapter.

The following are the specific results.
Significance of the CLAS Model

The significance of the new teaching method is described from two aspects: reading comprehension skills and reading attitude.

Compare the improvement of Result 3 reading comprehension skills through the scores of the students' reading comprehension test papers.

Result 4 Positive reading attitude.

The conclusions come from two aspects:

(1) Results of student attitude questionnaires and interviews

(2) The teacher's observation of students' attitudes in the classroom

Result 3 Improved reading comprehension skills

The CG under the reading comprehension score TIM is higher in the post-test than in the pre-test, and the result is significant.

Reading comprehension scores for EG under JRCS Model, the post-test scores are higher than the pre-test scores, and the results are significant.

The overall scores of EG and CG are the same. Comparing the four individual scores of vocabulary, grammar, reading, and translation, it is found that the average score of the EG group is higher than that of the CG group, and the percentage of EG high scores is also higher than that of CG.

It proves that the new model is helpful to the improvement of reading comprehension skills and is significant.

Students' Japanese reading comprehension tests include pre-test, post-test and third test.

Pretest (Test 1) In order to obtain the true level of students, Posttest (Test 2, Jan. 8th, 2021) is used to compare whether students' reading ability has improved. 3rd Test (Test 3), March 1, 2021 is used to test whether students have forgotten the linguistic knowledge learned after one month, the result is that the correct rate of EG is greater than that of CG

The comparison content is the mean, percentage, and standard deviation. The formula is:

MEAN	$\bar{x} = \dfrac{x_1 + x_2 + \cdots + x_n}{n}$	$\bar{x} = \dfrac{1}{n} \sum_{i=1}^{n} x_i$

Standard Deviation	$\sigma = \sqrt{\dfrac{1}{N}\sum_{i=1}^{N}(x_i - \mu)^2}$	
Sample standard deviation:	$S = \sqrt{\dfrac{\sum_{i=1}^{n}(x_i - \bar{x})^2}{n-1}}$	

Test 2 Post-test

The original final scores of CG and EG are listed in Appendix. Analyze the reading test results of the four classes through Excel.

Analyze the reading test results of the four classes through Excel.

The total score of the Test 2 is 100 points. The five sub-items are Vocabulary (15 points), Grammar (10 points), Reading Comprehension (50 points), Translation (Ja-CN, Japanese to Chinese, 10 points), and Translation (CN-Ja, Chinese to Japanese, 15 points).

The number of students in the four classes is different. According to interviews, some students have learned Japanese and have reached the intermediate or advanced level of Japanese (passed the N2 exam), while the difficulty of the test paper is beginner (between N5-N4). Therefore, when performing data analysis, the performance of these people is not analyzed. There were originally 38 people in the first class, but 6 people were removed (level N2), and now there are 32 people.

Comparison of the total scores of the four classes

Here are the average scores, standard deviations, and excellent ratios of the four classes.

Table of average scores and standard deviations of test papers for each class

Table 56

Class	S.D.	Mean(point)
1	12.2	70.6

2	14.3	68.7
3	13.8	74.8
4	12.4	74.2

(The total score of the Test 2 is 100 points.)

The average score of the whole test paper is higher in the EG group than in the CG group. But it is not significant. S.D. is basically the same.

Divide students' scores into five levels, Five-level (five-level performance), further analyze the excellent rate, and find that A in EG is higher than CG and is significant.

A ($\geq$90) means the score is greater than or equal to 90 point.

B [80-90) means the score is greater than or equal to 80 point, and also less than or equal to 90 points.

C [70-80) means the score is greater than or equal to 70 point, and also less than or equal to 80 points.

D [60-70) means the score is greater than or equal to 60 point, and also less than or equal to 70 points.

E (<60) means the score is less than 60 points.

Excellent ratio of test papers for each class

Table 57

Class	Total (person)	A (>90)	B [80-90)	C [70-80)	D [60-70)	E (<60)
1	32	3.1%	21.9%	37.5%	18.8%	18.8%
2	36	2.8%	16.7%	25.0%	41.7%	13.9%
3	36	13.9%	25%	30.6%	11.1%	19.4%
4	43	11.6%	25.6%	25.6%	25.6%	11.6%

In general, the number of people with a total score higher than 90 points, EG is significantly more than CG.

The total score is higher than 80 points, and the number of people with less than 90 points is more EG than CG. But not significant.

Levels C, D, E are not significant.

Further comparing the scores of the sub-items.

Comparison of sub-items of the four classes

Here is a comparison of the individual average scores and excellence rates of the four classes.

The average scores of vocabularies and reading comprehension are higher in the EG group than in the CG group.

The excellent rate of EG for vocabulary questions is significantly higher than that of CG. And the failing rate, EG is lower than CG.

The grammar questions in the EG group have an excellent ratio higher than the CG. Pass rate, EG<CG

For reading comprehension questions, the excellent rate of EG is significantly higher than that of CG. D, EG<CG

Mean of sub-item of four classes (point)

Table 58

Class	Vocabulary	Grammar	Reading Comprehension	Translation (Ja-CN)	Translation (CN-Ja)
1	7.7	6.0	33.9	9.6	13.4
2	6.7	5.7	34.1	9.5	12.8
3	9.4	6.0	36.4	9.6	13.4
4	9.6	5.8	36.2	9.8	12.8
Subtotal	15	10	50	10	15

Comparing the average scores of individual items, the scores of vocabularies and reading comprehension, the EG group is higher than the CG group. Grammar and reading scores are not significant.

To further compare the excellent rate of individual items, for the convenience of comparison, the scores of each individual item are divided into three level. They are Good, Passed and Failed. Those with a score higher than 80% are Good (including 80%), those with a score less than 60% are Failed, and the rest are Passed.

Here is an explanation of the classification criteria for excellent, passing, and failing, as well as the scores for individual items that meet these criteria.

Good [80-100) means the score is greater than or equal to 80 point. Failed (<60) means the score is less than 60 points. Passed means the score is greater than or equal to 60 point, and also less than 80 points.

In sub-item, the subtotal of Vocabulary is 15 points, Good is greater than or equal to 12 points. Failed is less than 9 points. Passed is less than 12 and greater than or equal to 9 points. Translation (CN-Ja) is same. The subtotal of Grammar is 10 points, Good is greater than or equal to 8 points. Failed is less than 6 points. Passed is less than 8 and greater than or equal to 6 points. Translation (Ja-CN) is same. The subtotal of Reading Comprehension is 50 points, Good is greater than or equal to 40 points. Failed is less than 30 points. Passed is less than 40 and greater than or equal to 30 points.

Individual subtotal, excellent, passing, and failing score table （point）

Table 59

Sub-item	Subtotal	Good (≥80%)	Passed	Failed (<60%)
Vocabulary and translation (Chinese to Japanese)	15	≥12	[9,12)	<9
Grammar and translation (Japanese to Chinese)	10	≥8	[6,8)	<6
Reading	50	≥40	[30,40)	<30

The following is the percentage of the number of excellent, passed, and failed people to the total number of people.

Table 60Percentage of good, passed, and failed vocabulary questions
Vocabulary (%)

Class	Good (≥80%)	Passed [60~80%)	Failed (<60%)
1	18.8	34.4	46.9
2	13.9	22.2	63.9
3	36.1	25	38.9
4	30.2	30.2	39.5

The excellent rate of EG is higher than that of CG, which is significant. The

percentage of FAILED people, EG is significantly lower than CG.

Table 61Percentage of Excellent, Passed, and Failed on Grammar

Class	Good (100-80]	Passed (80-60]	Failed (60-0]
1	18.8	50	31.3
2	11.1	41.7	47.2
3	19.4	36.1	44.4
4	20.9	37.2	41.9

The excellent ratio of EG group is higher than CG

Passed，EG<CG

Table 62Reading Comprehension

Class	Good (100-80]	Passed (80-60]	Failed (60-0]
1	21.9	56.3	21.9
2	22.2	61.1	16.7
3	36.1	47.2	16.7
4	32.6	48.8	18.6

For reading comprehension questions, the excellent rate of EG is higher than

that of CG. Significant.

Passed，EG<CG

Table 63Translation (Ja-CN)

Class	Good (100-80]	Passed (80-60]	Failed (60-0]
1	96.9	3.1	0

2	94.4	2.8	2.8
3	94.4	5.6	0
4	100	0	0

Insignificant

Table 64Translation (CN-Ja)

Class	Good (100-80]	Passed (80-60]	Failed (60-0]
1	87.5	9.4	3.1
2	83.3	5.6	11.1
3	91.7	0	8.3
4	76.7	14.0	9.3

Insignificant

In summary, by comparing the total average score of the whole set of test papers, the average score of each individual item, and the excellent rate, it is found that EG is significantly higher than CG in terms of vocabulary and reading. In terms of grammar, EG is higher than CG, but it is not significant. Translation is flat.

Class 2 and Class 3

Randomly select two classes from the four classes, and use SPSS to analyze the total score and sub-item score (Vocabulary, Grammar, Reading comprehension, Translation) on the Test 2 reading paper

It was found that the vocabulary question EG-C3 was significantly higher than CG-C2.

C2 used model 1 (Traditional Model), C3 used model 2 (CALS Model)

The value of Shapiro is less than .05 (.001) and more than .05 (.261), it is not normal distribution.

Tests of Normality

	Model	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
		Statistic	df	Sig.	Statistic	df	Sig.
Score	1	.133	36	.109	.871	36	.001
	2	.099	36	.200[*]	.963	36	.261

*. This is a lower bound of the true significance.

a. Lilliefors Significance Correction

The value of Mann-Whitney U test is more than .05 (.069), the mean of two population are same.

Test Statistics[a]

	Score
Mann-Whitney U	486.500
Wilcoxon W	1152.500
Z	-1.819
Asymp. Sig. (2-tailed)	.069

a. Grouping Variable: Model

The results of the comparison of the five levels of performance ratios,

At level A ($\geq$90 point), the proportion of EG-C3 people is significantly higher than that of CG-C2.

level A ($\geq$90 point), The proportion of EG-C3 people is significantly higher than that of CG-C2.

level B ($\geq$80, <90 point), EG-C3 is significantly higher than CG-C2.

level C ($\geq$70, <80 point), EG-C3 is higher than CG-C2.

level D ($\geq$60, <70 point), EG-C3 is obviously lower than CG-C2.

level E (<60 point), EG-C3 is higher than CG-C2.

Table 65

Total score ratio	Level	C2	C3	Sig.
(100-90]	A	2.80%	13.90%	Large number, significant
(90-80]	B	16.70%	25.00%	Large number, significant
(80-70]	C	25.00%	30.60%	Large number
(70-60]	D	41.70%	11.10%	Small number, significant
(60-0]	E	13.90%	19.40%	Large number , significant
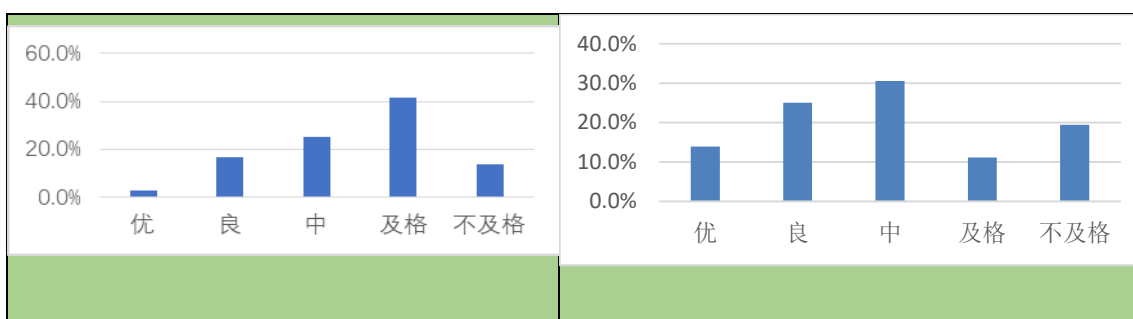
Average individual score

The average score of Test 2 paper, EG is significantly higher than CG. The difference in S.D. is not significant.

The average score of sub-item items, EG for vocabulary questions is higher than CG, which is significant.

Grammar, reading, and translation EG are higher than CG, but not significant.

Compare mean of sub score (point)

Table 66

| | Total (S.D.) | Vocabulary | Grammar | Reading comprehension | Translation | |
					Ja-CN	CN-Ja
CG-C2	68.7(14.33)	6.7	5.7	34.1	9.5	12.8
EG-C3	74.8(13.8)	9.4	6	36.4	9.6	13.4
	Average test score	Average vocabulary score	Average grammar score	Average reading score	Average translation score	

Compare individual vocabulary, grammar, reading, translation, and translation results.

From GOOD, PASSED, FAILED three levels to see the ratio of the number of people to the total number of people,

In vocabulary questions, the ratio of good people in EG is significantly higher than that of CG, and the ratio of failed people is significantly lower than CG.

For grammar questions, EG has no significant advantage.

For reading questions, the number of good is significantly higher than that of EG than CG.

Japanese-Chinese translation, the ratio of failed people, EG is less than CG.

In Chinese-to-Japanese translation, the number of good people is higher than that of EG and CG. The ratio of failed people, EG is less than CG。

a Vocabulary

Good, the proportion of EG-C3 people is significantly higher than that of CG-C2

Passed, the proportion of EG-C3 is higher than that of CG-C2

Failed, the proportion of EG-C3 people is significantly lower than that of CG-C2

Table 67

Vocabulary	Level	C2	C3	Sig.
(100-80]	GOOD	13.90%	36.10%	Large number, significant
(80-60]	PASSED	22.20%	25.00%	
(60-0]	FAILED	63.90%	38.90%	Large number, significant

b Syntax

Good, EG-C3 has a higher proportion of people than CG-C2

Passed, the proportion of EG-C3 is higher than that of CG-C2

Failed, the proportion of EG-C3 people is lower than that of CG-C2

Table 68

Grammar		2	3	
(100-80]	GOOD	11.10%	19.40%	Small number
(80-60]	PASSED	41.70%	36.10%	Small number
(60-0]	FAILED	47.20%	44.40%	

c Reading

Good, the proportion of EG-C3 people is significantly higher than that of CG-C2

Passed, the number of EG-C3 is significantly less than that of CG-C2

Failed, the proportion of EG-C3 is the same as that of CG-C2

Table 69

Reading		2	3	

(100-80]	GOOD	22.20%	36.10%	Large number, significant
(80-60]	PASSED	61.10%	47.20%	Small number, significant
(60-0]	FAILED	16.70%	16.70%	

d Translation (JP-CN)

Good, the proportion of EG-C3 people is the same as that of CG-C2

Passed, EG-C3 has more people than CG-C2

Failed, EG-C3 accounts for less than CG-C2

Table 70

Translation -JP-CN		2	3	
(100-80]	GOOD	94.40%	94.40%	
(80-60]	PASSED	2.80%	5.60%	many
(60-0]	FAILED	2.80%	0.00%	few

e Translation (CN-JP)

Good, EG-C3 has a higher proportion of people than CG-C2

Passed, EG-C3 has fewer people than CG-C2

Failed, EG-C3 accounts for less than CG-C2

Table 71

Translation -CN-JP		2	3	
(100-80]	GOOD	83.30%	91.70%	many
(80-60]	PASSED	5.60%	0.00%	few
(60-0]	FAILED	11.10%	8.30%	few

In summary,

In vocabulary questions, the ratio of good people in EG is significantly higher than that of CG, and the ratio of failed people is significantly lower than CG

For reading questions, the number of good is significantly higher than that of EG than CG.

The remaining items are not significant.

Table 72

Percentage of CG-C2 achievement distribution	Percentage of EG-C3 achievement distribution
The examination is conducted in the form of closed books. There are 36 students in the whole class. The average score on paper is 68.7 points, which is lower than other classes. The reason is that one student has a low profile, only 15 points. After removing extreme scores, the class average score is 70.3 points. Calculated by SPSS, the overall data is normally distributed. The standard deviation is 11.1. The highest score for the volume is 92.5 points, and the lowest score is 34.5 points. The median is 69.5. Only one student is excellent, which is the least in the four non-teaching classes. Good accounted for 16.7%, medium accounted for 25%, and passed 41.7. There are a large number of people with 60-69 points in this class, which is too large. There were 5 people who failed, accounting for 13.9%.	The examination is conducted in the form of closed books, with 36 students in the class, and an average score of 74.8 on the paper. Calculated by SPSS, the overall data is normally distributed. The standard deviation is 13.8. The highest score for the roll noodles is 96 points, and the lowest score is 43 points. The median is 75.5. There are 5 excellent students, 25% and 30.6% respectively for good and medium, 4 passers, and 19.4% passers, which are more in the four non-teaching classes.
The first question of the test paper, the vocabulary question, 15 points for this question, 15 words are examined, the average score of this question in this class is 6.7 points, and 36% of the	The first question of the test paper, the vocabulary question, 15 points for this question and 15 words for the examination, the average score of this question in this class is 9.4 points, and the results are better

students have an accuracy rate of more than 60%. There are 2 people with a perfect score of 15, and 5 people with a score of 0-1. The polarization is serious.	in the four non-teaching classes. 61% of students have a correct rate of more than 60%. There are 5 people who scored a perfect score of 15, and 1 person who scored a full score of 0. The polarization is serious.
The second question is a multiple-choice grammar question. The total score is 10 points. It examines 10 grammars. The average score of this question in this class is 5.7 points, the highest score is 8 points, and the lowest score is 3 points. 53% of students have an accuracy rate of more than 60%. Judging from the scores of the first and second questions, the scores are the lowest among the four non-teaching classes. The students in this class have a weak grasp of vocabulary and grammar and need to be improved.	The second question, grammar multiple-choice question, with a total score of 10, examines 10 grammars, the average score of this question in this class is 6 points, and one person gets a perfect score. 55% of students have an accuracy rate of more than 60%. Judging from the scores of the first and second questions, the students in this class have a solid grasp of vocabulary and their grammar still needs to be improved.
The third question, reading comprehension question, with a total score of 50 points, consists of four short essays, covering daily life, customs, etc., to examine the comprehensive ability of students. The average score of this question in this class is 34.1 points, the highest score is 48 points, and the lowest is 10 points for 1 person. 83% of students have a correct rate of more than 60%.	The third question, reading comprehension question, with a total score of 50 points, consists of four short essays, covering daily life, customs, etc., to examine the comprehensive ability of students. The average score of this question in this class is 36.4. Among the four non-teaching classes, the results are better. 83% of students have a correct rate of more than 60%. Three people made only one wrong question and got the highest score of 48

This question seems to have a large amount of questions, but in fact it is less difficult. Through careful reading, students can find intact answers in the text, and most of the questions do not require speculation or analysis. However, if the students have a weak foundation, they are likely to be unconfident, and the length of the article, new words and other reasons will affect the reading effect.	points in the class. The lowest score is 21 points, and the score is less than half. This question seems to have a large amount of questions, but in fact it is less difficult. Through careful reading, students can find intact answers in the text, and most of the questions do not require speculation or analysis. However, if the students have a weak foundation, they are likely to be unconfident, and the length of the article, new words and other reasons will affect the reading effect.
The fourth question, translation question, is to translate five Japanese sentences into Chinese. The average score of this question is 9.5, and the minimum is 2 points. The fifth question, translation question, translated five Chinese into Japanese. The average score of this question was 12.8, and the two got 0-1. The translation question is the original sentence of the text in the book, and students who are familiar with the book knowledge have achieved good results.	The fourth question, translation question, is to translate five Japanese sentences into Chinese. The average score of this question is 9.6 points, and the minimum is 6 points. The fifth question, translation question, is to translate five Chinese into Japanese. The average score of this question is 13.4, and the minimum is 0. The translation question is the original sentence of the text in the book, and students who are familiar with the book knowledge have achieved good results.

The coverage of the test questions and the analysis of scientificity and rationality.

The scope of the test questions is from the 25th to the 30th lesson of the "New Edition of Standard Japanese for Communication between China and Japan" Elementary Volume II. The test paper covers the words, grammar, sentence patterns and texts in the book, and has comprehensive extracurricular content. There are multiple-choice questions, fill-in-the-blank questions, reading comprehension

questions, translation questions, etc. The test paper focuses on the basic knowledge of the textbook, whether the students have memorized words and sentence patterns by heart, and whether they can recognize and use the knowledge learned from the textbook in actual situations. The questions are consistent with the requirements of the examination and the syllabus, which effectively examines the students' mastery of the knowledge they have learned.

Test 3 One month after the final exam

One month after the final exam, a mobile phone online test was conducted. Show students the words, grammar and translation questions in Test 2 on the learning platform. The reading questions were not retested. Students compare the correct answer and choose according to their actual situation.

The teacher supervises the students in the classroom, and the students provide their own class and student number to prevent sloppy, cookie-cutter answers. Answer within a limited time.

Students compare the correct answer provided by the teacher with the actual answer made by themselves, and choose their own level of knowledge:

A is completely correct, B is mostly correct (I remembered some things incorrectly), and C is partially correct (I remembered, but now forgot). D is completely incorrect (I don't know this knowledge at all)

Table 73Test content table

Word test.	Grammar questions.	Translation questions.
Complete the five loan words in the sentence according to the Chinese prompts. Write five kanji characters according to the kana prompt in the sentence.	Five auxiliary word questions that choose one of two. Three-word meanings and usages, two sentence pattern questions	Five Japanese sentences are translated into Chinese. Five Chinese sentences are translated into Japanese. Ask students to write their answers first, and then compare them with the

Write five pseudonyms based on the kanji hints in the sentence.		correct answers.

Test 3 post-test, the difference between the correct rate of EG and CG questions

Item	C3 Correct rate	C2 Correct rate	C3-C2
Vocabulary 1.メールを_____する(査邮件)	81.08%	56.76%	24%
2.葉子さんは_____(打工，副业，工读)をしますよ。	56.76%	40.54%	16%
3.部屋の中を歩きながら、_____(演说，演讲)の練習をします。	83.78%	62.16%	22%
4.すてきな_____(围巾)ですね。	70.27%	51.35%	19%
5. _____(速度)を出すな!	78.38%	62.16%	16%
6.田中さんが あんない(　　　)してくれた近所のお店で、しんせんな野菜をたべました。	78.38%	67.57%	11%
7.田中さんがあんないしてくれた　近所(　　　)のお店で、しんせんな野菜をたべました。	40.54%	32.43%	8%
8.田中さんがあんないしてくれた　近所のお店で、しんせん(　　　)な野菜をたべました。	75.68%	56.76%	19%
9.市街(　　　)のどうろはよく渋滞します。	72.97%	51.35%	22%
10.市街のどうろはよく　渋滞(　　　)します。	64.86%	37.84%	27%
11.まいあさ、　大勢(　　　)の人が公園にあつまって、ラジオたいそうをしたり、　おど　ったりします。	75.68%	37.84%	38%
12.まいあさ、　大勢の人が公園にあつまって、ラジオたいそうをしたり、　おど(　　　)ったりします。	32.43%	16.22%	16%
13.あねは　こうこう(　　　)の時、すうがくが得意でした。	51.35%	48.65%	3%
14.あねはこうこう　の時、すうがくが　得意(　　　)でした。	45.95%	18.92%	27%
15.私の国には　ゆた(　　　)かな自然があります。	56.76%	32.43%	24%
			19%
Grammar 16. 昨日小川さん　(Aと・Bを)　会ったでしょう?	64.86%	56.76%	8%
17. これは森さん　(Aが・Bは)　書いた本です。	81.08%	81.08%	0%
18. (A 疲れる、B 疲れた)　とき、熱いおふろに入って、早く寝ます。	45.95%	29.73%	16%
19. きのうの夜　(A 寝る、B 寝た)　とき、少しお酒を飲みました。	59.46%	48.65%	11%

20. 私は　テレサちゃんに　花を　(Ａあげました、Ｂくれました)。	54.05%	54.05%	0%
21. けがで(　　)に行きました。Ａ病院　Ｂ学校　Ｃ会社　Ｄ駅	67.57%	43.24%	24%
22. この道路は東京で交通量が一番(　　)道路です。Ａ大きな　Ｂ多い　Ｃたくさん　Ｄおおぜい	40.54%	29.73%	11%
23. まだ時間がありますから、(　　)休んでくださいＡすぐに　Ｂつい　Ｃゆっくり　Ｄうまく	40.54%	27.03%	14%
24. 姉は小学校の教師(　　)。ＡにしていますｂがしていますＣをしていますＤでしています	27.03%	35.14%	8%
25. 田中さんは毎週中国語教室(　　)Ａを行っていますＢを通っていますＣで行っていますＤに通っています	32.43%	43.24%	11%
日译汉。先将自己的答案写出来，再与正确答案对比。26. もう11時だから寝よう。	83.78%	78.38%	5%
27. 明日，病院へ行こうと思っています。	81.08%	78.38%	3%
28. 荷物が重いので，宅配便で送ります。	78.38%	75.68%	3%
29. 電気を消せ。	94.59%	89.19%	5%
30. 次の文章を読んで、質問に答えなさい。	86.49%	70.27%	16%
			6%
汉译日。先将自己的答案写出来，再与正确答案对比。31. 这是明天会议要用的资料。これは明日_____。	48.65%	29.73%	19%
32. (我)想要操作简单的个人电脑。_____欲しいです。	37.84%	29.73%	8%
33. 骑自行车带人很危险。自転車に２人で_____。	32.43%	24.32%	8%
34. 明天早晨会下大雨吧。明日の朝は_____でしょう。	35.14%	27.03%	8%
35. 不要在这停车！ここに_____な。	56.76%	24.32%	32%
			15%

Result 4 has a positive reading attitude

(1) Results of student attitude questionnaires and interviews

(2) The teacher's observation of students' attitudes in the classroom

The CG reading attitude under TIM, the interviews are consistent with the observed results, and the students have not improved significantly.

The EG reading attitude under the JRCS Model has improved scores in the post-test than in the pre-test, and the results are significant. It is observed in the classroom that students are more motivated to learn, and students are willing to learn.

Students in some classes responded in class, and some classes remained silent as a whole.

(1) Results of student attitude questionnaires and interviews

Comparing the attitudes of the students, it is found that more people in the EG group love reading under the new mode

(2) Attitudes observed by teachers in the classroom of students

Comparing the attitudes of the students, it is found that more people in the EG group love reading under the new mode

In the CG class, teachers observed that when the class started, it was difficult for students to put down their mobile phones, or to do other paper and pen tasks, or to chat.

Starting a course in the form of a test or a question can make students concentrate, but the student is nervous and after a period of time, the concentration becomes lax.

In the second class, the test can no longer be used to concentrate.

In the EG class, students must sit quietly with their eyes closed, and enter Japanese reading learning in a calm state.

Not all students pay attention to the video or like the content, but students will follow it unconsciously. Repeat

In some classes, students do not cooperate with cooperative learning and do not engage in classroom discussions.

In the group activities of the class, some groups do not meet the requirements of cooperative learning, but only one or two people do the task, and the others do not participate.

After interviews, students believe that the efficiency of group cooperation is not high, and they are more inclined to complete tasks individually. It is believed that teachers should refine the tasks to people.

Table 74

1 Knowledge.	Through the final test, I know that the students in Class 3 are good

	at learning and have a good grasp of basic knowledge. Observations in the classroom cannot tell whether they understand this knowledge. Because the students are silent, they don't speak even if they know it. In terms of knowledge, I can't tell how much they know, and the effect of asking questions is average. Less knowledge- ——When you ask questions about old content, you will not answer, indicating that you have not mastered the previous knowledge. -Test vocabulary. The score is low. -Do not make sentences when asking questions about the application of new knowledge.
2 Attitude.	Motivation. The students are reading books seriously and look very motivated. The student looks at the mobile phone. chat. The student stared at a page without moving. The students sit in the back row, the first few rows are empty. The students as a whole remain silent. The student responded positively. Students discuss actively. The student refused to discuss. Students work hard to beautify their written assignments after class. The students ignored the teacher's request and just completed the written assignments. The students earnestly do the word tasks left by the teacher, and the students directly refuse or complete the oral explanation assignments perfunctorily. The students did memorization exercises before class, and the students did not memorize them in advance. The students carefully read aloud and completed the dubbing assignments. The student completed it perfunctorily.

3 Practice.	The vocabulary is sufficient, and the correct answer can be answered by reciting questions or saying examples.

Reading comprehension test results

Sampling designs

Using the Max Min Con Principle for experimental research.

Computing using SPSS for windows

The results are

Post (traditional) is greater than pre (traditional)

Post (new model) is greater than pre (new model)

Post (new model) is same with post (traditional model)

SPSS Results after analysis

Sampling designs

Using the Max Min Con Principle for experimental research.

Computing using SPSS for windows

The results are

Post (traditional) is greater than pre (traditional)

Post (new model) is greater than pre (new model)

Post (new model) is same with post (traditional model)

Outcome of student's learning attitude

Table 75 Students' interest in learning Japanese as a second foreign language

Learning interest	interested	Coping learning	Not interested
Number of people (people)	59	49	18
percentage	46.8%	38.9%	14.3%

Table shows that 46.8% of the students are interested in the interest in learning Japanese as a second foreign language class.

38.9% of students have low interest in learning, which belongs to coping style learning. In addition, 14.3% of students have no interest. This data shows that nearly half of the students are more interested in learning Japanese as a second foreign

language, and nearly 40% of the students are less interested in learning, but for this part of the students, teachers can help find motivation, change teaching methods and learning methods, etc. Ways to stimulate students' interest in learning.
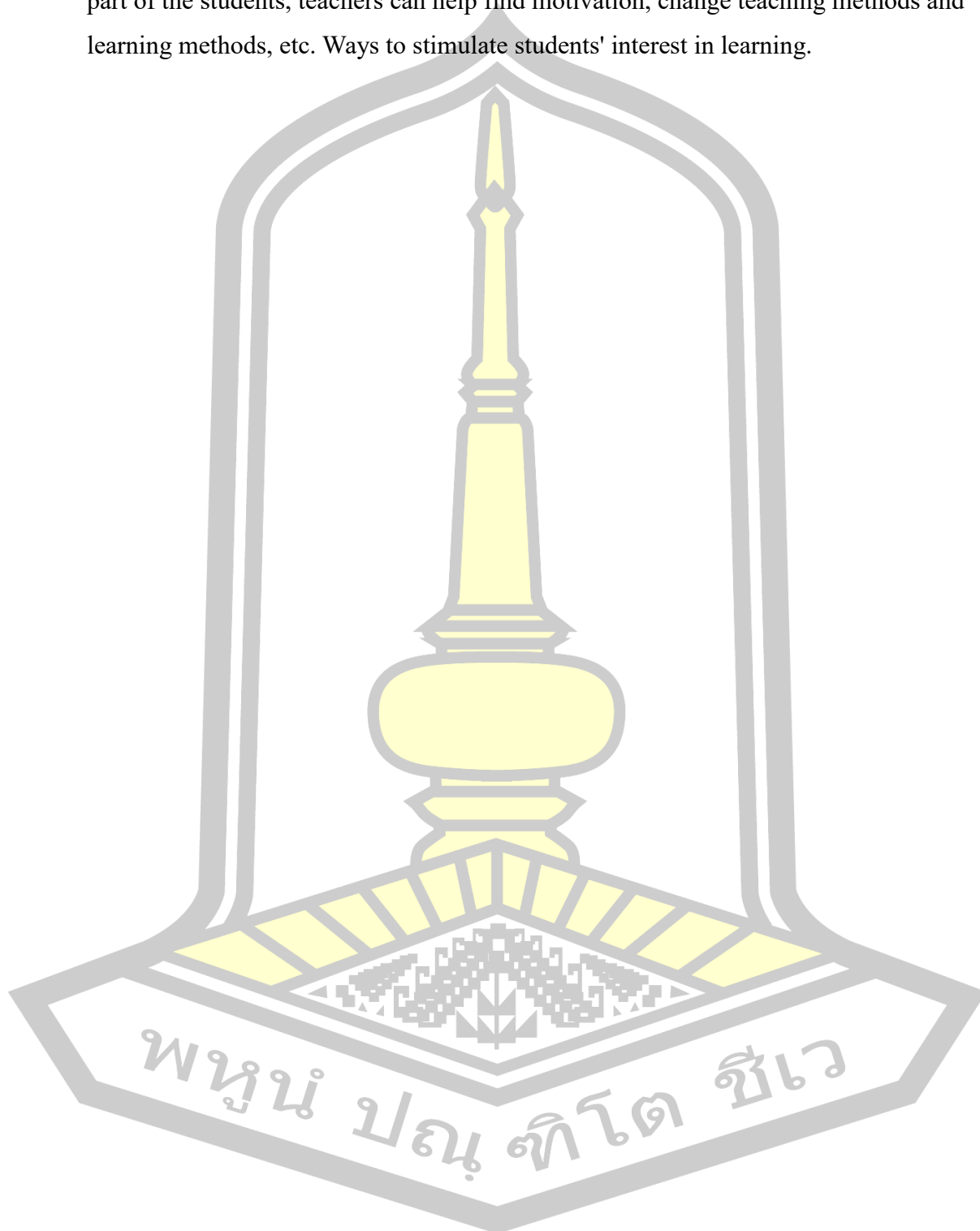
CHAPTER V
CONCLUSION AND DISCUSSION

The purpose of this chapter is to discuss the conclusions in chapter our and discussion. This chapter has been divided into four sections. Section one is conclusion, answered the research questions. Section two is discussion, give perspectives about the reason, evidence situation, theory or principle, and researches related to the answers. Section three are suggestions for implication and further research

5.1 CONCLUSION

This part is the conclusion of the research questions.

1. To investigate the current problems in reading comprehension and attitude toward reading for Japanese language in context of university students.

The current problems are students cannot read long sentences in Japanese. Students lack knowledge of vocabulary and grammar, as well as the awareness of understanding sentences. Students' attitude towards Japanese reading is negative.

2. To develop an instructional model to enhance Japanese reading comprehension skills and attitude toward reading among university students.

The CLAS model including focus, rational, syntax, social system, support system, and application and effects.

3. To study the results of using the instructional model by mean of reading comprehension skills.

The CLAS model enhanced Japanese reading skills among university students.

3.1 To compare pretest and posttest score in both control and experimental groups.

The posttest score in control groups is more than pretest score.

The posttest score in experimental groups is more than pretest score.

3.2 To compare the posttest score of experimental group and control group.

The posttest score of experimental groups is more than control group.

4. To study the results of using the instructional model by mean of attitude toward reading.

The CLAS model enhanced attitude toward reading among university students.

Conclusion, the CLAS model aims at students' actual problems, through teaching steps and teaching activities, allows students to find the reasons for their lack of linguistic knowledge, and leads students to solve problems.

5.2 DISCUSSION

This part discussed the result of objectives, reasons of the results in chapter four, discuss the related theories and principles, and researches related to the research objectives.

The following are the results to the first stage research objectives, reasons of the situation, and related theories or principles and researches.

Result of Objective 1

Due to the impact of the COVID-19, the actual level of students is worse than in the previous third semester, and their basic knowledge is lacking.

In this article, students' low reading comprehension ability mainly refers to the inability to read long sentences, mainly due to lack of linguistic knowledge and failure to use appropriate analytical methods.

The reason why students lack knowledge of vocabulary and grammar is that they do not realize the memorization method that suits them.

Students' attitude towards Japanese reading is negative. This also results in students not having enough time to study. The problem with reading comprehension is that students lack linguistic knowledge, cannot read texts, and their attitude towards reading is negative. **Reason of the result.** The reasons for these answers are students

cannot understand the text when reading and comprehension. The main problems are unclear meaning of words, incomprehension of sentence patterns and usage, and lack of knowledge of cultural background. Students hope to solve their lack of linguistic knowledge, but they are unable to implement effective methods.

Students use the method of understanding Chinese (mother tongue) and English (first foreign language) articles to read Japanese (second foreign language) articles, but the method is not applicable. This further affects students' inactive reading attitudes.

Related theory/principle of research objective 1

The corresponding theories are: **Information process theory.** Students acquire linguistic knowledge through mechanical memory. Knowledge does not enter long-term memory. When reading an article, when encountering new words, it is impossible to understand the general meaning through reading strategies, and it is impossible to transfer the learned knowledge to working memory. **Metacognition.**

Students did not pay special attention to cultural background knowledge, and did not realize the similarities between culture and language use.

Students don't realize the reading strategy corresponding to the language when reading. **Related research of RO1.** The traditional vocabulary teaching method proves to be more beneficial to long-term memory than the teaching method assisted with multimedia overhead projector (Zhao P.,2007). Students believe that the most effective way to remember vocabulary is mechanical memory. However, students think that mechanical memory methods are inefficient and time-consuming. Students know that there are some memory methods that can improve efficiency, but they cannot be implemented. The three presentation models, pictures/comics/videos, produce no different effects on the short-term memory of the target words, but significant on the long-term retention (Liu L & Qin X.2014). The students ask the teacher to explain the words and held a negative attitude towards the pictures related to the words shown by the teacher. They thought it was a waste of time because it did not have a positive effect on the memory of words.

The following are the results to the second stage research objectives, reasons of the situation, and related theories or principles and researches.

Result of Objective 2 The components of the instructional model to enhance Japanese reading comprehension skills and attitude toward reading among university students. The new model to improve reading comprehension and reading attitude helps students to establish clues for new knowledge in working memory, and remind students to store the new knowledge in working memory in long-term memory in time for efficient memory. Instruct students to quickly grasp the subject matter when reading sentences, so as to directly improve reading ability and indirectly improve reading attitude. **Reason of the result: (1) Uniqueness of the CLAS model**

The difference of the CLAS model and the traditional model is how to deal with contents that students do not know. In the CLAS model, teachers give students a framework, a specific method to put what they have learned into long-term memory.

To improve reading attitude, students need to have the ability to read articles, and they need to improve their linguistic knowledge. The teacher asks the students to memorize words, and the students explore the memory method by themselves. Most of the students use mechanical memory, which is time-consuming and inefficient, and the students cannot arrange a lot of time for Japanese.

Teachers teach linguistics knowledge in class, which takes up too much class time. Students do not actually use it. When reading articles, they think of not acquiring sentence meaning, but analyzing grammar and words. When unrecognized words appear in the sentence, students will have frustration and give up understanding the meaning of the sentence. The difference of the CLAS model is how to deal with contents that students do not know. In the CLAS model, what the teacher gives students is a framework, a specific method to put what they have learned into long-term memory. **(2) Lesson Plan-Relearning table for EG;** The teacher lists the content to be reviewed for each review time, most of which are done through the mobile phone app. The content includes reading words, texts, quizzes, memorizing texts, Grammatical inflection practice, etc. -In the relearning table, the short-term memory review cycle is deleted. Because after 5 minutes and 30 minutes of learning new knowledge, students are still in class, teachers will deliberately repeatedly mention new knowledge. And 12 hours is sleep time. Only keep long-term memory review cycles. Students have many courses in the school that cannot be reviewed according to the schedule. The corresponding person in charge or the responsible

group will remind students when they need to review, through groups in instant messaging software, or announcements in the class.

-the responsible group choose a charging person to remind to review by the date.

-the teacher makes notification in group or notify the class responsible person; the students make feedback in the group.

Related theory/principle of research objective 2

Neurolinguistics: IPT – attention, working memory, long term memory

Metacognition – Autonoetic consciousness (self-awareness), meta-reasoning, consciousness (awareness), Metamemory

Scaffolding – Technical scaffolding, Reciprocal scaffolding, Metacognitive/Strategic scaffolding, Hard/soft scaffolding

Neurolinguistics

Mindfulness meditation is a form of attention control training. After a brief mindfulness training (MT) for initially naïve participants underwent an fMRI experiment. The MT caused increased activation in areas involved in sustaining and monitoring the focus of attention (dorsolateral PFC), consistent with the aim of mindfulness that is exercising focused attention mechanisms, and in the left caudate/anterior insula involved in attention and corporeal awareness and decreased activation in areas part of the "default mode" network and is involved in mentalizing (rostral PFC), consistent with the ability trained by mindfulness of reducing spontaneous mind wandering (Tomasino & Fabbro, 2016).

Related research of research objective 2: CLAS model to improve reading comprehension and reading attitude, help students build clues for new knowledge in working memory, students to store the new knowledge in working memory into long-term memory in time for efficient memory. Instruct students to quickly grasp the subject matter when reading sentences, so as to directly improve reading ability and indirectly improve reading attitude.

(1) Activities: Activities include mindfulness, cooperative learning, word presentation, voice acting etc.

A. **Mindfulness** One class has two sessions, each session has 45mins. Between

the two sessions have a 10 mins' break. The first session uses mindfulness to focus students' attention and the second session start with video watching. Video content is the student's Voice acting works (dialogs in textbook and animation), or songs related to vocabulary, etc.

The learning of mindfulness meditation is associated with decreased stress and anxiety (Kostanski & Hassed, 2008; Burgstahler & Stenson, 2020). The content of the videos is students' works, or songs related to the vocabulary, etc. Voice acting, animation, song to improve students' Japanese ability and attitude.

B. **Cooperation:** Teacher chooses group discussion as activity, but some classes of EG refuse to discuss in class. In the process of preparing vocabulary before class, students also reject group cooperation. Researchers have found that Asian learners are resistant to cooperative learning, and the effects of activities are not satisfactory (Mangelsdorf, 1992; Nelson & Carson, 1998, etc.). Reiko Ikeda (2002/2004) pointed out that the current cooperative learning does not take into account the characteristics of Asian learners, and Asian learners should have their own ways of developing cooperative learning.

Yoko Tateoka (2005) observed in the Japanese reading class that learners learned knowledge and problem-solving strategies directly from others in the process of cooperative learning, exposed to different perspectives, and triggered in-depth thinking. But Pang Jixian and Wu Weiwei (2000) found that Chinese learners made fewer interactive corrections in group activities, and some learners would not ask questions even if they did not understand what others said. In the group discussion of the experimental group of this thesis, low-level students know too little about linguistics to ask questions, while high-level students think that questions are not worth discussing. Wang Liyuan (2013) compared the differences between Chinese students and non-Chinese students in group discussions, and found that non-Chinese students continue to introduce new information on the basis of the previous steps to promote the discussion, while Chinese students are less concerned about other group members. Responding to answer or develop, they understand the group discussion as an activity to collect different answers, thinking that only teachers are qualified to

judge their views (Wang L, 2013: 598). In this regard, Pang Jixian and Wu Weiwei (2000) pointed out that part of the reason is that Chinese learners are accustomed to listening carefully, their sense of participation in the classroom is weak, and they never ask questions during the course, and passive acceptance is greater than active exploration (Pang J., Wu W., 2000: 428). Learners generally think that after the group discussion is over, teachers need to explain, so as to truly consolidate language and knowledge (Yang J., 2008b). Foreign language teaching theory and empirical research have proved that traditional classroom teaching methods-teacher explanations, recitations, and mechanical language training-not only play an important role in consolidating students' language knowledge, but also have a great effect on the cultivation of various language skills in listening, speaking, reading, and writing. Benefits (Shu D., 2012). Some scholars pointed out that unreasonable grouping will directly affect learners' participation in activities and cause group learning to be ineffective; learners who do not understand the meaning of cooperative learning will cause anxiety in group activities, fail to properly handle interpersonal relationships, and lead to failure of activities. The solution strategy is to allow learners to fully understand the meaning of cooperative learning before the cooperative learning activities, group size, seating arrangements, differences between learners (such as personality, learning level, cultural background) should be considered when grouping. However, some students in the experimental group of this thesis refused to sit in other places. Therefore, the CLAS model finally uses two people to discuss, whether students are willing to discuss, when students are unable to answer the questions raised by the teacher, please help from the same group of high-level students to help answer the questions. Then the whole class and the teacher judge the correctness of the answer.

C. Vocabulary presentation

In English vocabulary teaching with the assistance of multimedia overhead projector, presenting a sample sentence or not makes no difference in terms of short-term and long-term memory of vocabulary (Zhao P.,2007). Students explained the easy ways to remember the words. Whether there is context or not, researchers have different attitudes, and teachers teach according to their own habits. Some researchers think learning new words in context is an important means of classroom vocabulary

teaching (Lu Q.,2001). But in Latin Square Design experiment the incidental acquisition context has no significantly different effects on the memory and retention of words (Liu L & Qin X.2014). Therefore, in the CLAS model, phrases are displayed as clues to remember words.

According to the elements of the target word contained in the second language vocabulary knowledge framework proposed by Wesche and Paribakht (1996: 13-40), students present vocabulary knowledge, including orthographical knowledge (correct spelling. The correct connection of sound and form), morphological knowledge (how the word is formed, which affixes can be added to it, and which affixes are added in what context), semantic knowledge (commonly used word meanings), mother tongue knowledge (the corresponding native words of the word), collocation knowledge (which words are often used together with the word), syntactic knowledge (grammatical function in a sentence), Vocabulary strategy knowledge (including vocabulary learning strategy knowledge and vocabulary communication strategy knowledge. Vocabulary learning strategy refers to the actions, steps, plans, practices, etc. taken by learners in order to promote vocabulary acquisition, memory, retrieval and use. Vocabulary communication strategies Refers to the remedy adopted by learners when they encounter vocabulary barriers in the process of using vocabulary.) (Ma G., 2007), then the teacher reminds and supplements.

D. Voice acting works

In summary and assignment, students do voice acting and share works that could improve their linguistics knowledge.

Assignment is to do voice acting or dubbing. Dubbing as a language learning tool, any learner can dub the lines of any video (Wakefield, 2014). The app of dubbing allows learners to make all of the choices regarding vocabulary, proficiency level, because they can select from among the virtually limitless number of easily accessible online videos. Dubbing allows a learner to act out his part, while the audience focus on the screen rather than on the language learner. It provides a boost to learner's confidence (Wakefield, 2014). Watching videos with captions increase the acquisition of word meaning and the recognition of written vocabulary (Syodorenko, 2010).

(2) Technology

There are three ways for people to acquire knowledge-doing, observing and symbolizing (Dale, E, 1946). With the aid of context-based audio-visual and demonstration, the memory retention rate is higher than that of traditional teaching.

The vocabulary teaching videos of the experimental group help learners to enhance their understanding and lasting memory with the help of well-designed teaching situations, various forms of audio-visual and demonstration learning materials (Liu Y., 2016).

The following are the results to the third stage research objectives, reasons of the situation, and related theories or principles and researches. To test whether JRC Skills has been improved, three tests were conducted before and after the CLAS mode, and the awareness of reading strategies related to reading comprehension was tested.

1.Reading comprehension skill

Test1 is pre-tested before the implementation of the CLAS model. The tool is an online test on a mobile phone. Test 2 post-tested one month after the implementation of the CLAS model, and the post-test was a paper-and-pencil test.

Results of Objective 3 (Test 1&2)

The post-test results of CG & EG are higher than the pre-test.

Post-test EG>CG, the result is significant.

CG using the traditional model, post-test>pre-test

EG using CLAS model, post-test>pre-test

Reason of the result: Different motivations for language learning, different speeds of acceptance of foreign languages, and different basic skills and different Japanese skills affect the students' Japanese reading comprehension scores. It takes time for students to improve their Japanese reading ability. In two or three months, students can develop the habit of analyzing sentences and increasing the volume of words. Vocabulary, grammar, and translation will affect reading comprehension skill. Students need to improve word score if they want to have a high reading comprehension score. The pre-test was taken on the mobile phone when the teacher teaches for the first time. The teacher and the students do not know each other, and the students maintain a sense of tension under the supervision of the teacher and do not

discuss with each other. The real JRC level of the students was found in the previous test. During the period of COVID-19, the students studied online at home for three months. The students did not adapt to the changes in learning styles. The real JRC skills were very low and they lacked linguistic knowledge.

Test 2 Post-test is carried out by students under the strict supervision of teachers. It excludes students from referencing books and discussing with each other, and examines the real JRC level of students. After studying in the school classroom for 3 months, the students did not take the exam immediately. Instead, they took the final exam held by the school one month after the lecture.

(3) Related theory/principle of research

(3.1) Scaffolding

Although using SPSS to analyze the results, the results of students who have achieved high levels in the class are removed, but they affect the attitude and enthusiasm of the surrounding students in Japanese language learning, and their "scaffolding" function is reflected in easily answering the same group of students' difficult problems have a profound impact on the improvement of the overall performance of the class.

(3.2) Neurolinguistics

The structure of the brain is very complex, and there are many uncertain working principles, but some substances produced by the brain are known to have a positive effect on learning.

A Sharing

Such as endorphins. Sharing can make humans feel happy. In the process of learning linguistics knowledge, teachers will use discussion as a classroom activity, allowing students to raise and solve problems.

But students are reluctant to discuss.

1. Students report that there is no content to be discussed in the learning content. It may be that the learning content is too simple, it may be that the student did not think deeply, or it may be that the student has questions but is embarrassed to say it.

2. When the teacher asks the students to discuss in groups, the students cannot discuss with their group members because of the seat. In some classes, all of them were silent, and the teacher allowed the two students to discuss, and the students still only stared at their books and did not speak.

3. When students encounter difficult problems, they like to look through the books to find the answers.

4. For the questions raised by the students, I hope the teacher will give the correct answers directly.

5. The discussion in the trial class has always been very positive, but the students' reading comprehension scores are not high. The students say that the "positive" they present is an illusion, and in fact they did not study seriously.

B **Concentrate**

Improve concentration. The teacher introduced the mindfulness to the students by using the facts of the American hospital to promote mindfulness practice

Do 1-minute mindfulness exercises before class to improve concentration.

Concentration in class usually uses word tests and mindfulness exercises.

The vocabulary test forces students to concentrate highly. This is passive concentration and there is a sense of tension. Some students will cheat and may feel guilty. Some students will feel unfair when they see it. This concentration is accompanied by the production of other substances.

Mindfulness practice involves closing your eyes, thinking, calm and not oppressive, with well-balanced brain waves. With the brain in a relaxed state, students put all their energy in Japanese learning.

And students will think of such a relief method when they are nervous in activities such as tests. Know how to deal with your panic problems, and concentrate on the content you want to read.

(4) Related research: The reason that EG students concentrate better than CG is because of the effect of mindfulness practice. Mindfulness meditators demonstrated superior performance on the test of sustained attention (Wilkins counting test) in comparison with non-meditators (Valentine & Sweet, 1999).

2.Long-term memory

Test 3 was performed after the students took a 50-day vacation after the second test. The test scores are carried out by students without reviewing Japanese, which can reflect the effect of students' long-term memory. Due to the confidentiality of the school's final test, students cannot obtain the content and answers of the final test. The teacher provided the vocabulary, grammar, and translation questions of the test paper online. The reading question was not tested again due to the long content. The teacher asks the students to refer to the correct answer to determine the reason for their own right or wrong.

(1) The result of Result of Objective 3(Test 3)

The results showed that the ratio of the number of people who chose Always and Frequently in EG was higher than that in CG group, and the score of EG was higher than that of CG.

CG chose Seldom and Never more than EG.

(2) Reason of the result

The better the questionnaire score, the better the Metacognitive Awareness of Reading Strategies.

It shows that teachers use the CLAS model to improve students' metacognition, and EG students use corresponding strategies when reading Japanese sentences.

CG students use the traditional model, and the questionnaire score is low, indicating that Metacognitive Awareness of Reading Strategies is low.

(3) Related theory/principle of research objective 3

CLAS model is based on NT, IPT, meta-cognition, scaffolding,

The components of these theories support the syntax of the model.

Information Process Theory
A Memory method

Students do not have the motivation to learn Japanese, and their attitude towards Japanese reading is not positive.

Regarding the linguistic knowledge that affects their reading ability, they are unwilling to accept the scientific method of reciting vocabulary, do not like to share

vocabulary memorization methods, and blindly attach importance to mechanical memory.

B Working memory

In addition, because the value of learning Japanese is not high, students are unwilling to spend time memorizing vocabulary repeatedly after class.

In class, teachers lead students to learn and memorize linguistic knowledge. After class, teachers remind students to review according to the time of forgetting curve. However, most students do not spend time in Japanese and cannot transfer the knowledge stored in working memory into long-term memory.

C Retrieval of long-term memory

Once the student remembers the newly learned word, after repeated review, the content enters the long-term memory. However, the number of words that students learn is not many, there is no commonality, and they cannot be classified. When students want to use these words, there are fewer links to call out the words into working memory, which increases the difficulty for students to use words freely.

When students make sentences, they can't retrieve vocabulary to organize sentences. The scenes that often appear in life are similar, so the sentence is the same.

There is no corresponding word reserve for the sentence you want to make. Students use translation software to translate the entire sentence, but it is not the sentence pattern being practiced. Need further guidance from teachers.

(4) Related research of research objective 3

Stable neural reflexes can transform short-term memory into long-term memory (Hebb & Gerard, 1949: 26-35). The learners' vocabulary knowledge has undergone several exposures such as video learning, mobile phone app testing, vocabulary presentation, etc. and stable nerve stimulation, which improves the retention rate of vocabulary in the brain.

3.Awareness of Reading Strategies

After the third test, one week after 1st March, 2021, a Metacognitive Awareness of Reading Strategies questionnaire was conducted on CG and EG.

Students did the final test questions of last semester first, and then did the questionnaire. Finished in about ten minutes.

(1) Result of Objective 3

Students judge whether they have the awareness of using reading strategies. The results showed that the ratio of the number of people choosing Always and Frequently in EG is higher than that in CG group. CG chosen Seldom and Never more than EG. Explain that they have little awareness of using strategies. The questionnaire score of EG is higher than CG, and EG has better awareness of using reading strategies.

(2) Reason of the result

It shows that teachers use the CLAS model to improve students' metacognition, and EG students use corresponding strategies when reading Japanese sentences.

CG used the traditional model, and the questionnaire score is low, indicating that Metacognitive Awareness of Reading Strategies is low.

(3) Related theory/principle of research objective 3

CLAS model is based on NT, IPT, meta-cognition, scaffolding,

The components of these theories support the syntax of the model.

Metacognition

When students read Japanese articles, they cannot analyze sentence components as a whole, but assemble words into sentences from front to back according to Chinese habits.

Don't know other methods and insist on the original method

When reading Japanese articles, students pay too much attention to linguistic knowledge, unconsciously analyze sentence patterns and use reasons, and are not used to guessing the meaning of words.

The teacher reminds students to grasp the importance of sentences as a whole, guide them to analyze long sentences, find subject, predicate, and object through marker words, and then add modifiers. But when students see long sentences by themselves, they still tend to go from front to back, and immediately translate words into Chinese and form sentences when they see them. Since the Chinese can recognize

the meaning of Japanese characters and most of the sentence meaning can be understood correctly, students tend to choose this simple method.

When Japanese kanji is a vocabulary that China does not have or appears in the form of a pseudonym, students will get stuck and the translation cannot proceed. Or when the sentence structure is complex, students cannot simply assemble the translated words into sentences, and students cannot understand the meaning of the text, and usually choose to give up, and do not have the consciousness of grasping the main sentence as a whole.

Students do not like to divide the sentence into sentence sections and analyze the components of the sentence section in the sentence.

According to Chinese habits, students regard the words that appear in the front of the sentence as the subject. In long sentences, there are complicated sentences in front of the subject as modifiers. Students forget to look for the subject through auxiliary signs or because of poor linguistic knowledge. Confused the sign word.

Students are not used to analyzing predicates from the end of sentences. Sometimes it is thought that finding the backbone will not be of any substantial help in understanding the meaning of the sentence, and therefore refuses to spend time analyzing.

(4) Related research of research objective 3

In-depth analysis of a certain stimulus will maximize the activation of the language processing area of the brain, leaving a lasting memory trace (Craik,F. I. M. & R. S. Lockhart,1972:671-684). Students often analysis the long sentences in class, that formed awareness of using reading strategies.

The following are the results to the fourth stage research objectives, reasons of the situation, and related theories or principles and researches.

Result of Objective 4

A questionnaire was used to test the students' reading attitude. The reading attitude questionnaire was conducted on 4th March, 2021. The result is: the average value of CG and EG are similar. Analyzed by the three aspects of attitude, the average

value is roughly the same. In CG, the score of one class is higher than that of the other classes, and the attitude is the worst.

Reason of the result. When trying the CLAS model, one class is enthusiastic about all classroom activities, actively preparing vocabulary and discussing, but in applications, some experimental groups are always reluctant to participate in any classroom activities. Teachers can only improve continuously through action research.

It is difficult for students to change their attitude towards JRC in the short term.

However, the teacher compared the performance of CG and EG in the classroom, and observed that CG students showed a negative attitude in classroom activities. EG students have better attitudes and effects than the CG group when doing assignments to improve their linguistic knowledge after class.

Some students have high first foreign language proficiency, they have motivation and enthusiasm for learning. However, because the master's major to be taken in the future has nothing to do with the second foreign language, the motivation to learn Japanese is extremely low, and it is limited to the final exam "pass". Their negative influence on the motivation of people around to learn Japanese is also huge. Therefore, there is a phenomenon of low learning motivation in class and low Japanese reading performance. Such students have proficient foreign language reading skills, but they are unwilling to spend time on Japanese learning, have a negative reading attitude, and have low reading scores. **Related theory/principle.** CLAS model is based on NT, IPT, meta-cognition, scaffolding. The components of these theories support the syntax of the model. **Related research.** Wang Y. (2013) compared four grades and found that the learning engagement of sophomores and juniors is lower than that of freshmen and seniors, especially in the "metacognitive strategies", "deep learning strategies", and "teacher-student interaction". The interaction between teachers and students in Chinese universities is low (Zhu H., Wen D. & Xu R., 2011). The biggest difference in the performance of students in research universities between China and the United States is the "student-teacher interaction" indicator, and the performance of Chinese students is not as good as that of American students (Shi J.etc, 2011).

The experimental groups are third-year university students, the year with the least interaction with teachers in four years at university (Tang Q., Yu G., 2003) and it is difficult to change the overall environment with the power of one teacher alone.

Students think the classroom atmosphere is boring, but teachers think their classroom atmosphere is harmonious (Tang Q., Yu G., 2003). In the previous interviews of this thesis, it was also found that the teachers believed that the course was progressing smoothly, but the students actually had great learning difficulties. The teacher believes that the teaching speed cannot be slowed down according to the requirements of the students. When the CLAS model was implemented, students also emphasized not to care for low-level students. This contradiction occurs to students of different levels in the same class. It is difficult for teachers to consider both high-level students (N2) and low-level students.

The degree of students' acceptance is related to the character of the class members (Tang Q., Yu G., 2003) and the learning atmosphere of the class.

Conclusion

CLAS model aims at students' actual problems, through teaching steps and teaching activities, allows students to find the reasons for their lack of linguistic knowledge, and leads students to solve problems. It takes time for students to improve their Japanese reading ability. In two or three months, students can develop the habit of analyzing sentences and increasing the volume of words. Reading achievement will affect students' reading attitudes, and positive attitudes make students work hard to learn reading comprehension.

5.3 Suggestion

This part are suggestions for implication and further research.

(1) Suggestion for Implication

When applying the teaching model, teachers need to take into account the students' learning habits for many years, as well as the students' methods and

achievements in learning the first foreign language, as well as the influence of the students' mother tongue rules on the second foreign language.

Students are very accustomed to lecture-style teaching methods and firmly believe in mechanical memory. Some students reject new teaching methods

Students have strong reading strategies, but their lack of linguistic knowledge makes them unable to use these strategies, so they are unconsciously negatively affected by the language characteristics of their mother tongue and the first foreign language, or negative transfer.

Students are not aware of the characteristics of Japanese culture, and are accustomed to analyzing Chinese (mother tongue) and English (first foreign language) when analyzing sentences.

(1.1) Fixed model and changeable classroom activities

When implementing instructional models in the classroom, action research is required. Because the learning atmosphere of each class is different, the students' personalities are different, the students' previous Japanese foundation is different, and their ability to accept foreign languages is different.

When the same model is implemented in different classes, it produces completely different classroom effects. Some classes are carried out completely in accordance with the classroom activities arranged by the teacher, and some classes do not cooperate with the activities at all. The student's Japanese reading score did not change due to whether or not they performed classroom activities. However, the atmosphere of the class for corresponding classroom activities is active and relaxed, which is different from the traditional classroom, which is quiet and only cares about their own learning environment.

Teachers must prepare a large number of classroom activities, and make changes in the classroom according to the preferences of students, otherwise there will be situations where students do not cooperate, resulting in the result that the teaching model cannot be implemented.

The most accepted by students is still lecture-based learning, as well as Q&A-based Q&A. They don't like discussions or take the initiative to answer teachers'

questions. Usually bow your head, stay silent, read your own book, and don't communicate with other people.

Teachers are susceptible to the influence of students, and in the end, they unconsciously return to the traditional teaching methods, that is, teachers explain and students listen to lessons.

Therefore, when the teaching mode is fixed, teachers need to carry out flexible classroom activities according to the actual classroom situation.

(1.2)   Students' self-control and teachers' management and control

When a teacher manages a large class of forty or fifty people, sometimes it is impossible to judge whether the students are discussing topics related to classroom learning. The school also requires students to place their mobile phones on the side of the classroom before class to prevent students from looking at their phones in class.

Students rely on mobile phone dictionary software to look up the vocabulary they need to make sentences, as well as some of the meanings they want to express, but students are also watching movies and TV dramas and using chat software. Perhaps the teacher's constant assignment of small tasks can force students to stay away from the attraction of mobile phones.

However, when students are doing some electronic practice test questions, due to different foundations, the time spent is different. Some students have entered the next stage of learning, and some students are still holding mobile phones. It is not easy for teachers to control the progress of the class.

(1.3)   Teacher's Persistence and Concession

Teachers must adhere to their basic point of view, that active learning is better than passive learning.

When students hope to get the correct answer directly, they are given guidance and search for the answer through books or the Internet.

Teachers must firmly believe that the scientific education model can achieve the desired purpose and solve the practical problems of students.

Intervene when group members do not support the activity.

Students are accustomed to mechanical memory, and are unwilling to use other methods to memorize words. They think that the process of learning and memory methods will delay time, or they will not actually use memory methods, such as memory palaces. If the teacher does not instruct, the students still memorize by rote. Teachers need to help students memorize vocabulary in a variety of ways, so that students can find a method that suits them. It is helpful for students who are not large in vocabulary and cannot be classified to master more vocabulary.

(2) Suggestion for further research

In the trial class, the students said that there was an illusion of studying hard. In the classroom, students listened to the class very seriously, actively participated in class activities, worked hard to do exercises, and got good test results. However, when testing the students' Japanese reading ability, the overall results of the class were not high. Will the teaching model create the illusion of improved grades and a good reading attitude? This kind of classroom teaching model is implemented smoothly. What are the reasons for the low final grades?

What are the other factors that affect the implementation of the teaching model?

Under the influence of the teaching mode, how long will the positive reading attitude of students last?

After the mode is used, the excellent rate of EG is greater than that of CG, but the failure rate of EG is also greater than that of CG.

There are many learning resources on the Internet, MOOC is popular, and some students have reached a high level of language ability before they study in the classroom. How to teach in the classroom when students' language proficiency levels vary high? This thesis tries to make high-level students compose complex sentences in class, help students answer difficult questions, and dub difficult extracurricular videos after class. But most of the class time, high-level students are doing things that have no connection with the textbook, such as reading high-level Japanese textbooks or books for other subjects. If the teacher assigns tasks according to the actual level of the students, it will take a lot of time to prepare and assess.

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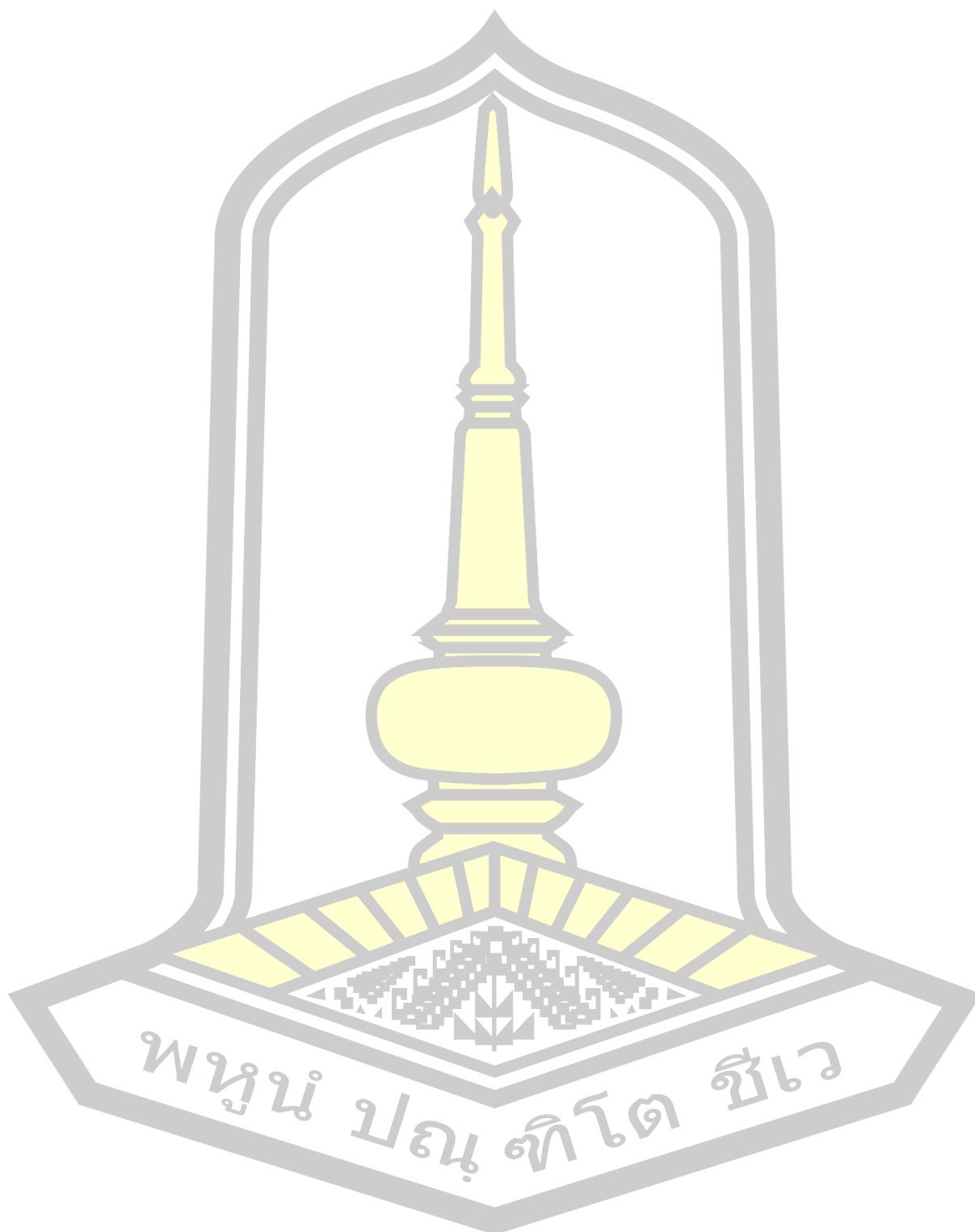
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APPENDIX

1. Questionnaires for students

For reading problems and attitude toward reading (Students)

Background Information About Yourself
Please provide information about yourself by ticking the appropriate box:
    1. Gender: male ¬ female ¬
     2.Age: 18-19 ¬ 20-21 ¬ 22 or over ¬
    3. Learning stage 1 term- 2 term
    4. Japanese Proficiency JLPT 5- 4-
    5. Have you ever been to Japan? Yes ¬ No ¬
    6. If in 3. above you ticked YES, please estimate the total amount of time you
have spent there: less than 1 week ¬ 2-3 weeks ¬ 1 months ¬ _____months
_____year

Section A Linguistic knowledge

Please indicate the extent to which you agree or disagree with the following statements. Strongly agree---5 Agree---4 Neutral---3 Disagree---2 Strongly disagree---1	
1. There are many new words when reading an article	5 4 3 2 1
2. The vocabulary I knew cannot support me in Japanese reading practice	5 4 3 2 1
3. I cannot expand my vocabulary through extensive reading	5 4 3 2 1
4. The way to expand my vocabulary is to memorize new words in textbooks	5 4 3 2 1
5. My main method of memorizing words is rote memorization	5 4 3 2 1
6. I have the impression of wasting my time to remember Japanese vocabulary because very easy to forget.	5 4 3 2 1
7. I do not understand the sentence structure when I read	5 4 3 2 1
8. When I read an article, I always pay attention to the meaning of words, and do not infer the meaning of the whole sentence through the context.	5 4 3 2 1
9. When I read an article, I always focus on the grammar, and do not infer the meaning of the whole sentence through the context.	5 4 3 2 1
10. When I read, I cannot infer the meaning of the new words from the context	5 4 3 2 1
11. I cannot infer the meaning of grammar from the context when I read	5 4 3 2 1
12. I use a dictionary when I face new words.	5 4 3 2 1
13. I cannot predict the content of the following text	5 4 3 2 1

because I lack linguistic knowledge, such as vocabulary and grammar	
14. My reading speed is slow because there are a lot of new words and complicated grammar in the text	5 4 3 2 1
15. Understanding Japanese sentence is difficult because the sentence pattern is too different with Chinese.	5 4 3 2 1

Section B General knowledge

Please indicate the extent to which you agree or disagree with the following statements. Strongly agree---5 Agree---4 Neutral---3 Disagree---2 Strongly disagree---1	
1. When I read an article, I always use the bottom-up reading method	5 4 3 2 1
2. I read one word at a time, I cannot read the sentence by phrase.	5 4 3 2 1
3. When I read an article, I do not judge the topic of the article first	5 4 3 2 1
4. I do not know how to infer the meaning of a sentence from the context.	5 4 3 2 1
5. I do not use reading strategies, such as skimming, when I read an article	5 4 3 2 1
6. I do not note something when I read article.	5 4 3 2 1
7. I do not know the keywords when I read an article	5 4 3 2 1
8. I do not understand the unique culture of Japan	5 4 3 2 1
9. Lack of cultural background knowledge affects my understanding of articles	5 4 3 2 1
10. Before reading, I will not study the relevant background of the text	5 4 3 2 1
11. I do not know how to focus on reading when I do reading comprehension	5 4 3 2 1

Section C Methods to improve reading skills

Please indicate the extent to which you agree or disagree with the following statements. Strongly agree---5 Agree---4 Neutral---3 Disagree---2 Strongly disagree---1	
1. Learning Japanese is difficult because it is too different from the Chinese language.	5 4 3 2 1
2. I think mother tongue has a great influence on Japanese learning.	5 4 3 2 1
3. Reading strategies of mother tongue and English have a great influence on Japanese reading	5 4 3 2 1
4. Before reading, I will actively understand the relevant knowledge background of the text and predict the main content of the article	5 4 3 2 1
5. Activities before reading can mobilize my interest in learning Japanese	5 4 3 2 1
6. During the reading process, I predict the main content of the article based on the title and the topic sentence of each paragraph	5 4 3 2 1
7. In Japanese reading, I use different reading strategies depending on the type of reading materials and reading questions	5 4 3 2 1
8. During the Japanese reading process, vocabulary has a great influence on my reading effect	5 4 3 2 1
9. During the reading process, I can ask my own questions about	5 4 3 2 1

the content of the article	
10. After reading, I summarize the articles again	5 4 3 2 1
11. When reading text, teacher asks questions and interact	5 4 3 2 1
12. Teacher explains different reading strategies according to different reading materials	5 4 3 2 1
13. In class, teacher introduces extracurricular knowledge related to the reading materials (ethnicity, religion, culture, humanistic spirit and customs)	5 4 3 2 1
14. I am satisfied with the teacher's teaching method	5 4 3 2 1

15. Your motivation for Japanese reading* multiple choices
University academic requirements (complete homework or exam)
Personal hobbies-Postgraduate needs-Level test needs
To improve reading ability or deepen understanding of Japanese culture

16. What do you think is most important in Japanese reading? * Sort
Word meaning-grammar-Sentence pattern-Word pronunciation-
Fluency-background knowledge-Reading strategy

17. What is the main difficulty when reading?
Limited vocabulary-Grammar is too complicated-Sentence structure disorder
Word pronunciation is troublesome-Low reading motivation-Reading speed is not ideal

18. Do not understand the subject matter of the reading material, resulting in incomplete understanding or deviation of the text
Unfamiliar with the genre of reading text (representation of text)
Lack of effective reading methods and skills
What other factors do you think will affect reading? _____

19. When you encounter reading problems, you will choose * multiple choices
Access information (books, Internet)-Discuss with classmates-
Consult teacher-Consult other professionals-ignore

20. What method do you use to improve Japanese reading comprehension? *
Multiple choices
Recite words-Reading strategy-Speculate-Sentence pattern, grammar-
Learn cultural background-There is no specific method.

21. Which kind of reading do you prefer to import before class? * Multiple choice
Import of video, audio, pictures, etc.
Cultural background knowledge introduction-Topic discussion import-other

22. What preparations will you do before reading class * multiple choices
Preview new words only-Read through words and reading materials
Browse the full text to understand the general content and article structure
Check background information related to reading materials
No preview

23. When you do a reading comprehension question, will you read the article first or look at the question *

Read word by word, sentence by sentence, and get the idea of the article, then look at the problem

Look at the problem first, judge the general idea of the article by the keywords in the title, and then read the material

Not necessarily, there is no fixed method

Look at the title first, and then skim each topic sentence or the first and last sentences to guess the general idea of the article

24. Your habits in Japanese reading * multiple choices

Finger pointing at word reading-Circle with a pen-Read only, don't write-

Recognize one word at a time-Look at one phrase or sentence at a time

25. In Japanese reading, if you encounter new words or cultural knowledge that you do not understand * multiple choices

Regardless of it

Stop immediately to check the dictionary or related materials

Ignore it for the time being, wait until you have read the entire text and then check the dictionary and related materials

Guess meaning in context

Use the reading skills or problem-solving methods taught by the teacher to judge for yourself

26. What will you do after reading class * multiple choice

do nothing

Complete the homework assigned by the teacher

Review new words and grammar knowledge

In addition to the tasks assigned by the teacher, you will also do some self-test questions

Actively read relevant extracurricular materials to expand your knowledge

27. What kind of "post-reading activities" do you like the most?

Retell the text-cosplay-group discussion-

View film and television materials related to the text-other

28. What are your main Japanese reading materials * multiple choices

Japanese text

Reading comprehension in the test paper

Japanese newspapers and magazines

Original Japanese

American language pushed by Japanese learning software

29. What are the cultural teaching forms of teachers in Japanese reading class * multiple choices

Group discussion, cooperation and presentation

Provide relevant audio and video materials

Comparison of Japanese and Chinese culture

cosplay

Explain

30. Help you want * multiple choices

Teacher guidance-Information supports self-study-Memory method-Read the text-Background learning

31. Your access to Japanese cultural knowledge
＊multiple choices
What the teacher explains during class
Extracurricular reading (including novels, newspapers, magazines, etc.)
Communication between classmates
Movies, TV, radio, Internet, etc.
Hearsay

Questionnaire of Metacognitive Awareness of Reading Strategies (post-test)

This questionnaire is designed to assess readers' metacognitive awareness and perceived use of reading strategies while reading academic materials.
There are 27 questions in total, and it takes about 10 minutes to answer.
Please fill in your actual situation, not your ideal state.

乗り方も上手で、友達がたくさんいました。一度に 10 人の人の話を聞くことができました。

判断正误：聖徳太子は友達が 10 人いました。（ 错误 ）

questions is ... ing Japanese

Your gender: [multiple choice] ＊○male   ○female
Japanese learning time： [blank filling] ＊
Write "three semesters" only for students who follow the school curriculum.
Outside the school curriculum, those who have participated in extracurricular tutors write "XX" hours of extracurricular training, such as: 40.
_____

When reading Japanese essays, dialogues, and sentences, I often do this (please choose according to your actual use):
Options：From 'I always do this' to 'I never do this'.[Matrix Multiple Choice Questions] ＊
5 read aloud, contrast with ``silent reading''。

	Always	Frequently	Sometimes	Seldom	Never
1. I have a purpose in mind when I read Japanese text.	○	○	○	○	○
2. I take notes while reading to help me understand what I'm reading.	○	○	○	○	○

3. I think about what I know to help me understand what I'm reading.	○	○	○	○	○
4. I preview the text to see what it's about before reading it.	○	○	○	○	○
5. When text becomes difficult, I read aloud to help me understand what I'm reading.	○	○	○	○	○
6. I think about whether the content of the text fits my purpose.	○	○	○	○	○
7. I read slowly but carefully to be sure I understand what I'm reading.	○	○	○	○	○
8. I discuss my reading with others to check my understanding.	○	○	○	○	○
9. I try to get back on track when I lose concentration.	○	○	○	○	○
10. I underline or circle information in the text to help me remember it.	○	○	○	○	○

	Always	Frequently	Sometimes	Seldom	Never
11. I adjust my reading speed according to what I'm reading.	○	○	○	○	○
12. I decide what to read closely and what to ignore.	○	○	○	○	○
13. I use reference materials such as dictionaries (App) to help me understand what I'm reading.	○	○	○	○	○
14. When text becomes difficult, I begin to pay closer attention to what I'm reading.	○	○	○	○	○

	Always	Frequently	Sometimes	Seldom	Never
15. I use tables, figures, and pictures in text to increase my understanding.	○	○	○	○	○
16. I stop from time to time to think about what I'm reading.	○	○	○	○	○
17. I use context clues to help me better understand what I'm reading.	○	○	○	○	○
18. I paraphrase (restate ideas in my own words) to better understand what I'm reading.	○	○	○	○	○
19. I try to picture or visualize information to help me remember what I'm reading.	○	○	○	○	○
20. I use typographical aids like boldface type and italics to identify key information.	○	○	○	○	○

	Always	Frequently	Sometimes	Seldom	Never
21. I go back and forth in the text to find relationships among ideas in it.	○	○	○	○	○
22. I check my understanding when I come across conflicting information.	○	○	○	○	○
23. I try to guess what the text is about when reading.	○	○	○	○	○
24. When text becomes difficult, I reread to increase my understanding.	○	○	○	○	○
25. I ask myself questions I like to have answered in the text.	○	○	○	○	○
26. I check to see if my guesses about the text are right or wrong.	○	○	○	○	○

27. I try to guess the meaning of unknown words or phrases.	○	○	○	○	○

Attitude toward reading

Section A Affective Reactions to Academic Reading

Please indicate the extent to which you agree or disagree with the following statements. Strongly agree---5 Agree---4 Neutral---3 Disagree---2 Strongly disagree---1	
1. I feel anxious if I don't know all the words.	5 4 3 2 1
2. I feel anxious if I'm not sure whether I understood what I read.	5 4 3 2 1
3. Even if I cannot understand what I read completely, I don't care.	5 4 3 2 1
4. If it is not necessary, I prefer to avoid reading as much as possible.	5 4 3 2 1
5. Reading is enjoyable. I feel happy when I read Japanese text.	5 4 3 2 1
6. Reading is my hobby.	5 4 3 2 1
7. I feel tired when I am presented with a long text.	5 4 3 2 1

Section B Cognitive Reactions to Academic Reading

Please indicate the extent to which you agree or disagree with the following statements. Strongly agree---5 Agree---4 Neutral---3 Disagree---2 Strongly disagree---1	
1. I think reading many books is advantageous for getting a job.	5 4 3 2 1
2. I think reading many books is advantageous to the study of my major.	5 4 3 2 1
3. I think reading many books is advantageous for getting qualifications.	5 4 3 2 1
4. I think reading many books enables us to acquire depth of knowledge and sophistication.	5 4 3 2 1
5. I think reading is useful to shape personality.	5 4 3 2 1
6. I think I can read quickly.	5 4 3 2 1
7. I think my reading ability is advanced.	5 4 3 2 1
8. I think I read a lot.	5 4 3 2 1

Section C Your Current Attitudes to Japanese

Please indicate the extent to which you agree or disagree with the following statements. Strongly agree---5 Agree---4 Neutral---3 Disagree---2 Strongly disagree---1	
1. Learning Japanese is difficult because it is too different from the Chinese language.	5 4 3 2 1
2. I experience the enjoyment when I grasp a difficult construct in Japanese.	5 4 3 2 1
3. Geographical isolation makes it difficult to contact Japanese culture and people.	5 4 3 2 1
4. Japanese cultural distance from the West makes it difficult for us to understand people from Western cultures, even when a Japanese person has reasonably good English.	5 4 3 2 1
5. Japanese cultural distance from China makes it difficult for us to	5 4 3 2 1

understand people from Japanese cultures.	
6. I have a negative attitude toward Japanese culture and society.	5 4 3 2 1
7. The languages of neighboring countries (e.g. Korean) should be learned before Japanese.	5 4 3 2 1
8. My parents will be happy if I become proficient in Japanese because they encourage me to learn Japanese for the future.	5 4 3 2 1
9. I find Japanese interesting because it gives me insight into my own language, Chinese.	5 4 3 2 1
10. I experience 'high' feeling while reading in Japanese.	5 4 3 2 1
11. I have the impression of wasting my time in studying Japanese.	5 4 3 2 1
12. I will not have made much progress in Japanese reading skills in the next year.	5 4 3 2 1
13. I will be able to reach the level of Japanese proficiency at which I am aiming.	5 4 3 2 1
14. When I enter the Japanese class, I feel very relaxed and confident.	5 4 3 2 1
15. I use dictionary when I face new words.	5 4 3 2 1
16. I cannot see why I study Japanese and it means nothing to me.	5 4 3 2 1
17. I worried when the teacher asks me questions about what I read.	5 4 3 2 1

2. Interview sheet for teachers

1) Do your students lack linguistic knowledge when reading Japanese articles? For example, words and grammar.
Are your students not good at memorizing words and grammar?

2) Do your students lack background knowledge when reading Japanese articles?
Do they get the background knowledge from reading Japanese article?

3) What reading strategies do your students often use when reading Japanese articles? Are they good at inferring and predict?

4) Are your students' attitudes positive when reading Japanese articles? Are they interested in the text?

5) What classroom activities do you use to promote active reading? Such as role-playing, group discussions, and presentations.

3. Lesson plan

The following are lesson plans of each week and each lesson, and the lesson plan displayed in the learning platform.

Table 3 is Lesson plan (CLAS Model) in 12 weeks

This lesson plan has 1.5 units that each unit focus one topic and make a whole story together.
U7 Mr. Mori went to Peking. L25-L28. This unit focus on daily life in Peking.
U8 Spare time. L29-L30. This unit described the recreation after work.

Topic	Concept	Indicator	Activity	Media	Evaluation tool	Hour
1. Go to the center of Beijing (L25)	1.Inflected word/clause modify nouns. 2.Complex sentence components-modified nouns act as various components in a sentence. 3.Review literary form- impolite speech た体 (with sentences ending in "da") and polite speech ます体 (with sentences ending in "desu" and verbs ending in "masu"). 4.Reading- Highway. Guess the meaning of new words.	1.To determine the composition of Bunsetsu (phrases) in a sentence. 2.To know the sentence structure. First abbreviated sentence via auxiliary words (particle) to find the subject, predicate, object. Then extended sentence. To determine the modifiers of nouns in a sentence. 3.Changing literary forms freely to familiar impolite speech. 4.To know knowledge of social background. To know the way to consider general meanings of the unknown words through the context-looking for explanations of unknown words in context. To know when to skip unknown words and continue reading.	Practice changing shapes. Group discussion, Practice List topic sentence, 5 keywords -explain reasons Recording accomplishments -set goals Lesson word walls	PPT PC	Online quiz, filling form for changing shapes	6
2.Shaking hands and bowing (L26)	1.Nominalization of verb (formal noun or dummy noun) 2.Complex sentence components- Nominalized verbs act as various	1.To determine the composition of Bunsetsu (phrases) in a sentence. 2.To find the subject of the	Group discussion -Drawing composition. Answer in limit time	PPT Movie	Quiz	6

Lesson	Content	Objectives	Activities	Media	Evaluation	Hours
	components in a sentence 3.Expression of guess. 4.Reading-Greetings. Guess the meaning of new words.	action by locating the auxiliary words (particle) that prompt the subject and object. First abbreviated sentence to find the subject, predicate, object. Then extended sentence. To determine the composition of the nominalized verbs in a sentence. 3.To obtain the author's view by expression of guess. 4.Same with Indicator No.4 in L25.	List keywords			
3.Morning park (L27)	1.Usage of sentence pattern and auxiliary words. 2.Reading-The silver hair. Guess the meaning of new words.	1.Determine the composition of Bunsetsu (phrases) in a sentence by auxiliary words (particle). To know the meanings by analyzing complex sentences. 2.Same with Indicator No.4 in L25.	-Group discussion -Drawing composition. Phase card- -Verb-object collocation. List keywords.	Multimedia	Peer evaluation	6
4.Mr. Mori's new apartment (L28)	1.Verbs of give and accept 2.Expression of give and accept 3.Reading-Moving Services. Guess the meaning of new words. 4.Reading comprehension I - Beijing Branch. The theme of the article. 5.Reading Comprehension II -	1.To know the subject of an action via verbs of give and accept. 2.To determine the expression of give and accept by locating auxiliary words (particle). Obtain information quickly.	Group discussion- -Retrieve information game, -Highlight the important parts in passage. -Draw Mind mapping for the text	Multimedia. White board	Q&A Reading comprehension test Peer evaluation	6

Lesson	Content	Objectives	Activities	Media	Assessment	Hours
Rent an apartment 6. Vocabulary - Convenient store		3.Same with Indicator No.4 in L25. 4.To master methods of skipping and focus on information needed in long text reading (570 words) to improve reading speed. To analyze the structure of the article and the relationship between paragraphs to obtain the theme of the article. 5.Information retrieving. To locate writing purpose and topic in text. 6.To make link between Chinese and Japanese words and form system of vocabulary	Role play -give and accept present Mnemonic -Memory palace -Fill words in picture -make a vocabulary story -line drawings List keywords Voting production (unit summary and publish online with figure, words or drawing etc.)- -peers add 'like' -choose the most supporting production Recording accomplishments			
5.Karaoke (L29)	1.Verb conjugation-Commands. Rules and usages of commands form. 2.Sentence pattern (commands) 3.Reading- Karaoke. Guess the meaning of new words.	1.To identify commands form in sentence 2.To know expression of commands and polite request. 3.Same with Indicator No.4 in L25.	Role playing. Line drawing game Group competition- Ask each other List keywords	Movie	Self-evaluation, peer evaluation, Online quiz	6
6.Spring picnic (L30)	1.Verb conjugation- will 2.Sentence pattern-will 3.Auxiliary words- Cause and effect	1.To identify will form in sentence. 2.To get the author's view by	Electric game Group competition Cherry blossom	Image PC	Online quiz, single choice. Self-evaluation	6

4.Reading-Cherry blossom viewing. Guess the meaning of new words.	identify sentence pattern of will. 3.To know the author's view via auxiliary words (Cause and effect). 4.Same with Indicator No.4 in L25.	pictures/video viewing List keywords Practice Mind mapping Phase card- -Modifiers

Table 4 Lesson plan (traditional) in 12 weeks

No.	Topic	Concept	Indicator	Activity	Media	Evaluation tool	Hour
1	Sentence pattern (existing sentence)	1. The usage and position of quantifiers. 2. The pattern of existing sentence 3. Usage of auxiliary words	1. To know position of quantifiers. The pronunciation changing. 2. The usage of existing sentence 3. The position of auxiliary words	Practice	PC, Whiteboard	Quiz, Q&A	3
2	Verb conjugation	1.Usage of auxiliary word (coordinate two verbs) 2. Verb conjugation	To use the auxiliary words	Practice	PC, Whiteboard	Quiz, Q&A	3
3	Sentence pattern (ongoing tense)	1. Usage of auxiliary words 2 Verb conjugations 3.Usage of ongoing tense	To use ongoing tense	Practice	PC, Whiteboard	Quiz, Q&A	3
4	Auxiliary word (coordination)	1. Usage of auxiliary word (coordinate two adjectives) 2 Adjective conjugation	To use auxiliary word	Practice	PC, Whiteboard	Quiz, Q&A	3
5	Sentence pattern (favor)	1.Sentence pattern (favor) 2. Usage of auxiliary words	To use sentence pattern	Practice	PC, Whiteboard	Quiz, Q&A	3
6	Verb modifiers	1. Usage of adjectives modify verbs 2 Adjective conjugation	To make sentence with modifiers	Practice	PC, Whiteboard	Quiz, Q&A	3

7	Negative forms of verb	1. Verb conjugation 2.Negative forms of verb 3.Sentence pattern (commands)	To make negative sentence	Practice	PC, Whiteboard	Quiz, Q&A	3
8	Formal noun	1. Usage of formal noun 2. Verb conjugation (original form) 3. Sentence pattern (ability)	To use formal noun	Practice	PC, Whiteboard	Quiz, Q&A	3
9	Sentence patterns (experience)	1.Verb conjugation (past form) 2. Formal nouns 3. Sentence patterns (experience)	To use sentence pattern	Practice	PC, Whiteboard	Quiz, Q&A	3
10	Verb conjugation (simplified form)	1.Rule of verb conjugation (simplified form) 2.Usage	To use verbs (simplified form)	Practice	PC, Whiteboard	Quiz, Q&A	3
11	Auxiliary words	1.Usage of auxiliary words (coordination) 2. Verb conjugation (past form)	To use auxiliary words	Practice	PC, Whiteboard,	Quiz, Q&A	3
12	Sentence pattern (personal opinion)	1.Usage of auxiliary words 2. Usage of simplified verbs 3.Sentence patterns 4.Japanese way of expression	To use sentence pattern	Practice	PC, Whiteboard, multimedia	Quiz, Q&A	3

The lesson plans in mobile learning app
Chaoxing Xuexitong is a professional mobile learning platform for mobile terminals. Students can use smartphones and tablets to learn courses, search and download library resources.
Here is the content that students. The content displayed on the student side is as follows.
Chaoxing Learning Pass is a mobile learning platform for mobile terminals. Students can use smartphones and tablets to learn courses, search and download library resources. The content displayed on the student side is as follows.

Index of each lesson

< 　　　　　日语2　　　　　≡

　　　28课

○ 9.1 课前准备

○ 9.2 朗读

○ 9.3 授受关系

○ 9.4 课后练习

○ 9.5 28词组

⑩ 29课　　　　　　　　　＋

○ 10.1 朗读

○ 10.2 命令表达

○ 10.3 29词组

⑪ 30课　　　　　　　　　＋

○ 11.1 课前准备

○ 11.2 课文音频

○ 11.3 活用练习

○ 11.4 词组

Lesson 29

| 1.Preparation before class (review) | 2.Read aloud-Vocabulary and text. |

3.Vocabulary explanation

New Gairaigo (foreign language) word スーツケース(suitcase)
Associate other Gairaigo words
-スーツ(suit)
-ケース(case)
-トランク(trunk)

Mnemonic
Make up a story and remember 13 verbs.

西红柿，炒鸡蛋，放糖。
开始上课，坏了电脑，烧了房。又盖大楼。
停车，关门，关灯。
开窗，挂画，脏衣服，泥裤子。

トマトが落ちる。卵を割る。砂糖を入れる。
授業が始まる。パソコンが壊れる。家が焼ける。新しい家を建てる。
車を止める。ドアを閉める。電気を消す。
窓を開ける。絵をかける。服が汚れる。泥がズボンに付いた。

I scrambled eggs in the kitchen and put sugar in it.
Suddenly the course started, but my computer broke down. I was so anxious that I forgot to turn off the fire and burned the house.
I drove to see the newly built house. I stopped the car, closed the door, and turned off the lights.
I opened the window of the new house and hung a picture. As a result, I soiled my clothes and stuck mud on my pants.

The new word "以降"(ikou) is an ancient Chinese vocabulary, which is not used in the spoken language nowadays.
The meaning of "以降"(ikou) in the "Chinese Dictionary" is "after", which has the same meaning as in Japanese-"later or after a certain time".
Mnemonic:

〈 首页 > 汉语大词典 > 以降 **以降**　　**yǐ jiàng** 1.犹言以后，表示时间在后。 2.犹言以下，表示等第或位置在下。 **国语辞典** **注音** ㄧˇ ㄐㄧ ㄤˋ　**拼音** yǐ jiàng 以下、以後。 ▶《後漢書．卷八三．逸民傳．序》：「自茲以降，風流彌繁。」 ▶《文選．劉琨．勸進表》：「三五以降，靡不由之。」 **扫描版：「以降」在《汉语大词典》 第1089页 第1卷 1089**	"降"(kou) means falling, the sun rises and sets, and time passes.

4.Grammar explanation

でんき　け 電気を消せ ！ 关灯！　Turn off the light!	一类动词 基本形 走ります ⟶ 走る "る"变"れ" 走れ 引っ越します ⟶ 引っ越す "す"变"せ" 引っ越せ 行きます ⟶ 行く "く"变"け" 行け あらいます ⟶ 洗う "う"变"え" 洗え 運びます ⟶ 運ぶ "ぶ"变"べ" 運べ 死にます ⟶ 死ぬ "ぬ"变"ね" 死ね 込みます ⟶ 込む "む"变"め" 込め 把基本型的最后一个音变成相应的「え」段上的音。

Example sentences.	
赤色は「止まれ」 黄色は「注意しろ」 青色は「進め」　　Red light, stop! Yellow light, pay attention! Green light, go!	Form changing

5.Explanation of the dialogue	**6.Word group related to the new words**
应用文 	10.3 29词组 编辑 删除 風邪をひく。 時間を守る。 約束を破る 戦争をする 授業をサボる。 迷惑をかける。 スピードを出す。 言葉を覚える。 乱暴な言い方。 危険な時。 丁寧に言う。

7.Practice

8.Dubbing in each group	
 Popular animation-Working Cell	Dubbing person
 Animation	Dubbing person
 Dialogue in textbook	 Dubbing person

Lesson 30

Here is the lesson plan that used in multimedia classroom.

I Concentration Mindfulness

「今、ここ」に意識を集中する練習
心を強く、やわらかくする
「マインドフルネス」入門

How to Train a Wild Elephant:
And Other Adventures
in Mindfulness

仕事と人生の"パフォーマンス"
が劇的に変わる

Google をはじめ世界の先端企業、ジョコビッチなど
トップアスリートが取り入れ、NHK スペシャルでも話題!!

博士・神指導者 ジャン・チョーズン・ベイリー
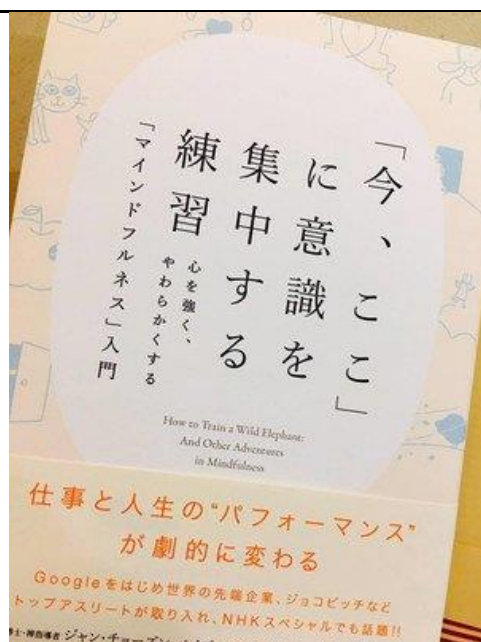
II Learning new knowledge
(1) Key concepts
Mind mapping of Volitional

敬语助动词
ます
ません
う・ようと思っている
う・ようと思う
ませんか
ましょうか
邀请、劝诱
う・よう
ましょう
1劝诱
2意向
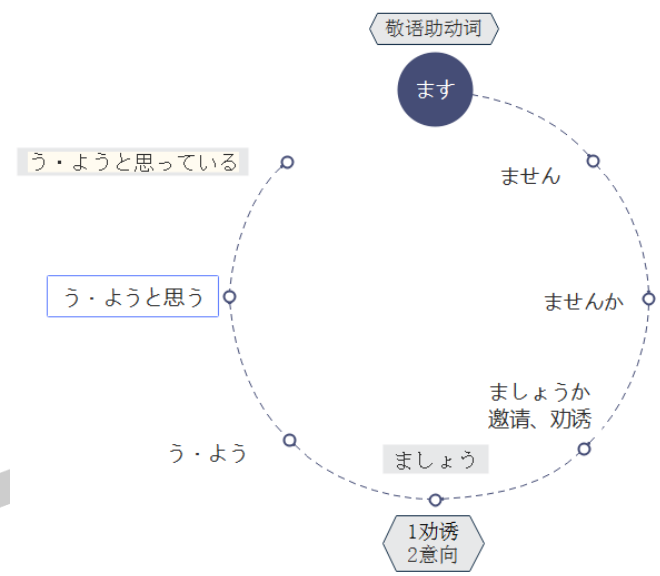
(2) Vocabulary presentation

(3) Details of grammar 1
Volitional- う・よう
1.意义

2 变形规律
（1）规则

いこう形   Ⅰ い→お ＋ う

わ ら や ま は な た さ か あ
~~り~~ ~~り~~ ~~み~~ ~~ひ~~ ~~に~~ ~~ち~~ ~~し~~ ~~き~~ ~~い~~
を る ゆ む ふ ぬ つ く う
れ め へ ね て せ け え
ん ろ よ も ほ の と そ こ お

Ⅱ ます→よう   Ⅲ

食べ~~ます~~よう   勉強~~します~~しよう
き   こ
見~~ます~~ よう   ~~来ます~~   来よう

Ⅰ
あいます   あおう
かきます   かこう
はなします   はなそう
たちます   たとう

Ⅱ
あけます   あけよう
おります   おりよう
います   いよう

Ⅲ
します   しよう
来ます   こよう

区別

う・よう	意志，劝诱
～（よ）うと思う	同上
～（よ）うと思っている	持续

~（よ）うと思う
说话人想表达自己意志的时候，如果只用う,よう的话，就会变成像例句中的那样自言自语。所以要在う，よう后面接と思う。

~と思う represents the judgment made immediately. Thoughts while speaking
~と思っている means you have been thinking about it for a certain period of time. The speaker has been thinking about it for a long time

(1) In the sentence of ~ようと思います, the subject of thinking is limited to the speaker. I use two sentence patterns, and the meaning will not change much.
（私は）海外旅行に行こうと思う。I want to travel overseas.
（私は）海外旅行に行こうと思っている。I want to travel overseas.

(2) If the subject of thinking is a third party, it is more appropriate to use ~と思っている.
（彼は）海外旅行に行こうと思っている。He is going to travel overseas.

区別

う・よう	Will, persuade	First person	? second person
～（よ）うと思う	Will, persuade Polite	First person	? second person

～（よ）うと思っている	Will, persuade lasting	First-person continuous	Third person

(4) Grammatical formula 1
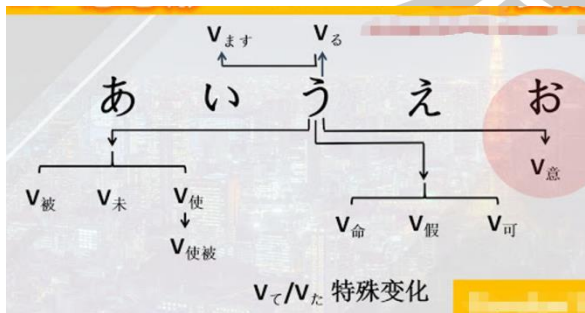
(5) Details of grammar 2

Expressing the reason
1 learned before
仕事で、楊さんと会っていたんですよ。 Particles (lesson 27)
森さんはお酒が好きですから、毎日飲みます。 Particles (lesson 11)
キムサンは野菜が嫌いです。だから、あまり野菜を食べません。 Conjunctions (lesson 11)

Continuation +	Particle		objective	+ command	+ persuade
Verb, form 1 く	て	Weaker than から, ので	O	X	X
Noun, form 2	で				
Simple form だ、 honorific form	から	Oral	X	O	O
Multiple simple form な	ので	formal	O	X	

2 ので indicating the reason
Connect two sentences, the first sentence (clause) + ので, the following sentence (main sentence).
Used to describe the causality of things logically.
It is not connected with the expression of strong will such as commands.

Connection method
The front of ので is usually followed by the ordinary form, but when the adjective 2, the noun+だ is in the non-past tense or affirmative form, it becomes なので. It's easy to make mistakes like 安いなので.

(6) Grammatical formula 2

Noun Class 2 adjectives	なので だったので でないので	私は花が好きなので、楽しみです。P65 昨日休みだったので、サッカーをした。P66T4（10） 日本語が上手ではないので、中国語で話してもいいですか。P68T （1）

	でなかったので		
Class 1 adjectives	いので かったので くないので くなかったので	荷物が重いので、宅配便で送ります P60 もう遅いので、そろそろ帰ろうと思う P60 雨で、外に出たくなかったので、電話して、ピザを届けてもらい した。P68T1 （3）	
verb	ウ　ので タ　ので ないので なかったので	お客さんが来るので、空港へ迎えに行く P60 電車が遅れたんで、遅刻した P62 長島さんには会ったことがないので、写真を見せて ください。P6 （4）	

In broadcast and polite oral expressions, the polite style is used in front of ので. Generally use ますので. ですので.

o ドアが閉まりますので，ご説ください。 The car door is about to close, please be careful.
o 明日辦いますので，よろしくお願いします。 I will visit you tomorrow, so please take care of me.

Notice,
Once several clauses expressing reasons appear in a sentence, you can use て, ために which express the reason. It is not possible to use ので which shows the reason in parallel several times.
Today's Embassy へ行くので，忙しいから，学校へ行きません. Because I am going to the embassy today, I am very busy, so I will not go to school.
お金がなくて，词书が买えないので，過ります。 Because I can't buy a dictionary without money, I feel embarrassed.
There are three forms of から, ので, and て in the clause part. They have a large and small relationship in the "contained, contained" relationship,
から>ので>て.

P66 T4,5

III Application
(1) Make sentence.
(2) Read and analyze.

V Summary and assignment.
(1) Form knowledge framework
(2) Voice acting
(3) Repetition

content	Activity	Purpose	Detail	Note
Summarize	teacher	Form a knowledge frame	The framework of the lesson content	

Task	Dubbing	Improve learning initiative	Read application conversations or articles with knowledge of other languages.	
repetition	review	Into long-term memory	According to the memory curve, remind students to review.	

4.   Test paper

Exams in each lesson（Learning app）

< 　　已发放　试卷库　　+ 满分:20.0分 创建时间: 03-10 20:32　发放	30, Grammar multiple choice questions, Translation-Chinese to Japanese
30语法选择，汉译日 满分:15.0分 创建时间: 03-10 20:32　发放	30 Translation
30翻译 满分:10.0分 创建时间: 03-10 20:32　发放	29 verb command form
29动词命令形 满分:43.0分 创建时间: 03-10 20:32　发放	29 command form translation
29命令形翻译 满分:30.0分 创建时间: 03-10 20:32　发放	28 exercises
28课练习 满分:34.0分 创建时间: 03-10 20:32　发放	29 command form
29命令形 满分:50.0分 创建时间: 03-10 20:32　发放	Test of unit 7 (The answer can upload photos)
第七单元测试（可上传答案照片） 满分:60.0分 创建时间: 03-10 20:32　发放	

Japanese reading test paper (Final)

"Japanese (3)" Course Test Paper (A Volume)

This test paper is for undergraduate English majors in the 2018 grade

of the School of Foreign Languages

Exam hours: 120 Total score: 100

Note: 1) Please check the page number and total number of pages of the test paper. If there are missing or double pages, please raise your hand to report.

2) The answer must be filled in on the answer sheet, and the ones filled in on the test paper are invalid.

3) The answer sheet must indicate the question number and answer the questions in the order of question numbers.

4) After the test, the test paper, answer sheet and draft paper are not allowed to be taken out of the test room.

一、写出划线词对应的外来语、「漢字」、读音（每个1分，共15分）

1. メールを（1）＿＿＿＿＿＿＿＿する（查邮件）

2. 葉子さんは（2）＿＿＿＿＿＿＿＿（打工，副业，工读）をしますよ。

3. 部屋の中を歩きながら、（3）＿＿＿＿＿＿＿＿（演说，演讲）の練習をします。

4. すてきな（4）＿＿＿＿＿＿＿＿（围巾）ですね。

5. （5）＿＿＿＿＿＿＿＿（速度）を出すな！

6. 田中さんが（6）＿あんない（＿＿＿）＿してくれた（7）＿近所（＿＿＿＿）＿のお店で、（8）＿しんせん（＿＿＿）＿な野菜をたべました。

7. （9）＿市街（＿＿＿＿）＿のどうろはよく（10）＿渋滞（＿＿＿）＿します。

8. まいあさ、（11）＿大勢（＿＿＿＿）＿の人が公園にあつまって、ラジオたいそうをしたり、（12）＿おど（＿＿＿＿）＿ったりします。

9. あねは（13）＿こうこう（＿＿＿）＿の時、すうがくが（14）＿得意（＿＿＿）＿でした。

10. 私の国には（15）＿ゆた（＿＿＿）＿かな自然があります。

二、选择题（每小题1分，共10分）

1. 昨日小川さん（Aと・Bを）会ったでしょう？

2. これは森さん（Aが・Bは）書いた本です。

3.（A 疲れる、B 疲れた）とき、熱いおふろに入って、早く寝ます。

4. きのうの夜　（A 寝る、B 寝た）とき、少しお酒を飲みました。

5. 太郎君は　テレサちゃんに　花を　（A あげました、B くれました）。

6. けがで（　　）に行きました。

A 病院　　　　　　　　　　　　B 学校　　　　　　　　　C 会社

　　　　　　D 駅

7. この道路は東京で交通量が一番（　　）道路です。

A 大きな　　　　　　　　　　B 多い　　　　　　　　　C たくさん

　　　　　　D おおぜい

8. まだ時間がありますから、（　　）休んでください

A すぐに　　　　　　　　　　B つい　　　　　　　　　C ゆっくり

　　　　　　D うまく

9. 姉は小学校の教師（　　）。

A にしています　　　　B がしています　　　　　C をしています

　　　　D でしています

10. 田中さんは毎週中国語教室（　　）

A を行っていますB を通っています　C で行っています　D に通っていま
す

三、阅读文章，回答问题（每小题 2 分，共 50 分）

（一）

結婚披露宴

みつこ:わたしは 25 歳。来年結婚します。披露宴はしません。あまりお金をかけたくありませんから。友達は準備がいろいろ大変だと言っていましたよ。

たかし:ぼくは 35 歳。おととし結婚しました。披露宴は家の近くのレストランでしました。親しい友達と家族を呼びました。地味な披露宴でしたが, なかなか経済的でした。地味な披露宴, お勧めですよ。

まさよ:わたしは 63 歳です。去年息子が結婚しました。わたしは親戚や会社の人を呼んで, きちんとした披露宴をしたほうがいいと思いますよ。

关于结婚喜宴有各种各样的看法。阅读文章，请在（　　）中填入年龄。

披露宴について，（　1　）歳の男性は，、地味な披露宴がいいと言いました。（　2　）歳の女性は，親戚や会社の人を呼んで，きちんとした披露宴をしたほうがいいと言いました。しかし、（　3　）歳の女性は，、披露宴をしないと言いました。

(1)　_____　　(2)　_____　　(3)　_____

(二)

聖徳太子

　聖徳太子は　574 年に　奈良で　生まれました。子どもの　とき、勉強が　好きで、馬の　乗り方も　上手で、友達が　たくさん　いました。一度に　10 人の　人の　話を　聞く　ことができました。

　20 歳に　なった　とき、国の　政治の　仕事を　始めました。そしてお寺を　造ったり、日本人を　中国に　送ったり　しました。中国から漢字や　政治の　し方や　町の　造り方などを　習いました。本も　書きました。

　聖徳太子が　造った　法隆寺は　奈良に　あります。世界の　木の建物の　中で　いちばん　古い　建物です。

阅读文章后，判断正误，对的打√，错的画 X。

1. （　　　　）聖徳太子は 600 年ぐらいまえに、生まれました。
2. （　　　　）聖徳太子は友達が 10 人いました。
3. （　　　　）聖徳太子は中国へ行って、漢字や馬の乗り方を習いました。
4. （　　　　）法隆寺は世界の建物の中でいちばん古いです。

(三)

你赞成什么样的结婚喜宴?理由是什么?
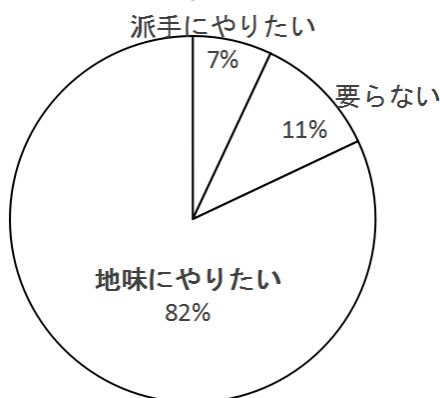
地味にやりたい

知らない人や親しくない人は呼び
たくない。

個性的なパーティーをしたい。

経済的だ。

要らない

形式的なやり方は嫌だ。

お金をかけたくない。

派手にやりたい

人生最大のイベントだ。

たくさんの人を呼びたい。

たくさんの人に見せたい。

　　　根据结婚喜宴的问卷调查结果,在(　　　)中填入适当的词语,完成句子。

（ア）知らない人や親しくない人を（1　　　　）人たちや,個性的な
（2　　　　）人は,（3　　　　）な披露宴がいいと思っています。全体の
（4　　　　）%です。

（イ）たくさんの人を（5　　　　）人や,たくさんの人に（6　　　　）人は,
（7　　　　）な披露宴がいいと思っています。全体の（8　　　　）%です。

（ウ）形式的なやり方が（9　　　　）な人や,お金を（10　　　　）人は,披
露宴は要らないと思っています。全体の11%です。

(四)

佐藤:あっ,王さん,新しいマンションは（　1　）ですか。

王:とてもいいです。引っ越しの時は奥さんにも手伝って
（　2　）,ありがとうこさいました。

佐藤:いいえ,（　3　）。疲れたでしょう?　もう片づきましたか。

王:まだです，友達がくれた CD を（　　4　　）片づけています

佐藤:あの辺は買い物するのに便利ですか。

王:ええ，近くにスーパーやコンビニがあります。（　　5　　），公園もありますよ。

佐藤:じゃあ。休みの時，散歩するのが楽しみでしょう?

王:ええ。今度ぜひ遊びに来てください。

1. 阅读会话，选择最恰当的答案。

（1）①どう　　　　　　　②どこ　　　　　　　③どちら　　　　　　④どれ

（2）①もらったから　　　②あげて　　　　　　③もらって　　　④くれて

（3）①どうですか　　　　②それでも　　　　　③こちらこそ　　　④どういたしまして

（4）①聞いて　　　　　　②聞きながら　　　　③聞こえて　　　④聞いた後

（5）①そして　　　　　　②それに　　　　　　③けれども　　　④だから

2. 根据文章内容将恰当的词语填入（　　）中。

（ア）周さんが引っ越しした時、佐藤さんの奥さんが（　　6　　）くれました。

（イ）友達に CD を（　　7　　）

（ウ）マンションの近くに（　　8　　）や（　　9　　）があるので，買い物に便利です。

四、将下列句子翻译成汉语（每个 2 分，共 10 分）

1. もう 11 時だから寝よう。

2. 明日，病院へ行こうと思っています。

3．荷物が重いので，宅配便で送ります。

4．電気を消せ。

5．次の文章を読んで、質問に答えなさい。

五、将下列句子翻译成日语（每个 3 分，共 15 分）

1．这是明天会议要用的资料。

これは明日＿＿＿＿＿＿＿＿＿＿＿＿＿＿＿＿＿。

2．(我)想要操作简单的个人电脑。

＿＿＿＿＿＿＿＿＿＿＿＿＿＿＿＿＿欲しいです。

3．骑自行车带人很危险。

自転車に 2 人で＿＿＿＿＿＿＿＿＿＿＿＿＿＿＿。

4．明天早晨会下大雨吧。

明日の朝は＿＿＿＿＿＿＿＿＿＿＿＿＿＿＿でしょう。

5．不要在这停车!

ここに＿＿＿＿＿＿＿＿＿＿＿＿＿＿＿＿な。

Answer and grading details

《日语（3）》课程（A 卷）答案及评分细则

I Write the foreign language, "Chinese character" and pronunciation corresponding to the underlined word (1 point for each, 15 points in total)

1-5　チェック　アルバイト　スピーチ　マフラー　スピード

6-10　案内　きんじょ　新鮮　しがい　じゅうたい

11-15　おおぜい　踊　高校　とくい　豊

Grading rules:

If you write a wrong Chinese character, you won't get a score. If you write a false name in a foreign language and hiragana, you will get half a score.

II. Grammar multiple-choice questions (1 point for each quiz, 10 points in total)

1-4 AABA 5 A/B 6-10 ABCCD

III. Read the article and answer the questions (2 points for each question, 50 points in total)

（一）234 words, short article, social status survey, fill in the blanks based on the content of the article

(1)35 (2)63 (3)25

（二）Historical story, 209 words, judge whether the title is consistent with the original text

1-4 Ｘ Ｘ Ｘ Ｘ (F, No)

（三）113 words, social status survey, fill in the blanks based on the content of the article

（ア）１呼びたくない　２パーティーをしたい　３地味（経済的）　（4）　82

（イ）５呼びたい　６見せたい　７派手　(8)　　7

（ウ）９嫌　　１０かけたくない

（四）224 words, daily dialogue, choose appropriate vocabulary to fill in the blanks (word meaning, grammar)

（1-5）13422 (6) 手伝って　(7) もらいました（もらった）

(8) スーパー/コンビニ（1分）(9) コンビニ/スーパー（1分）

Grading rules:

0.5 points will be deducted for false names and clerical errors. One point is deducted for deformation errors and splicing errors.

IV Translate the following sentences into Chinese (2 points for each, 10 points in total)

1.　　（因为）已经 11 点了，睡觉吧。

2.　　明天(我)想去医院。

3.　　（因为）行李很重，所以用送货上门（宅配送）的方式送达。

4.　　关灯！

5.　　读下面的文章，回答问题！

Grading rules:

Partial errors, one point will be deducted; clerical errors, 0.5 point will be deducted. The overall meaning is right.

V Translate the following sentences into Japanese (3 points for each, 15 points in total)

1. これは明日会議で使う資料です。
2. 操作が簡単なパソコンが欲しいです。
3. 自転車に２人で乗るのは危ないです。
4. 明日の朝は大雨になるでしょう。
5. ここに車を止めるな。

Grading rules:

Partial errors, one point will be deducted; clerical errors, 0.5 point will be deducted. The overall meaning is right.

5. Assessment form for experts

The assessment forms for instructional model, lesson plan, test paper, and attitude questionnaire are listed as follow.

Assessment form 1 Questionnaires for students (Details)

Component (variable)	IOC		
	+1	0	-1
(1) General knowledge problems	√		
(2) Linguistics knowledge problems	√		
(3) No motivation			√
(4) No interesting	√		
(5) Negative attitude	√		

Assessment form 2 for interview questions

Component	Objective	IOC		
		+1	0	-1
1 lack linguistic knowledge	To know if students have memorizing problems	√		
2 lack background knowledge	To know if students have cultural problems	√		
3 reading strategies	To check if students reading fast and understand the meanings with the right strategies	√		
4 positive attitudes	To check if students interested in the text	√		
5 classroom activities	To check if active reading was promoted	√		

Checklist 2 for lesson plan

Topic (Traditional Model)	Topic (CLAS Model)	IOC		
1) Sentence pattern (existing sentence)	Go to the center of Beijing (L25)	+1	0	-1
2) Verb conjugation		√		
3) Sentence pattern (ongoing tense)	Shaking hands and bowing (L26)	√		
4) Auxiliary word (coordination)		√		
5) Sentence pattern (favor)	Morning park (L27)	√		
6) Verb modifiers		√		
7) Negative forms of verb	Mr. Mori's new apartment (L28)	√		
8) Formal noun		√		
9) Sentence patterns (experience)	Karaoke (L29)	√		
10) Verb conjugation (simplified form)		√		
11) Auxiliary words	Spring picnic (L30)	√		
12) Sentence pattern (personal opinion)		√		

Assessment form 5 for reading test

Component	Objective	OC		
I Vocabulary	to check the meaning of the words	1		1
II Grammar	to check the structures of the sentences.			
III Reading comprehension	to check the reading strategy, and the understanding of the texts.			
IV Translation	to check the meaning of the words and the structures of the sentences.			
V Translation	to check the meaning of the words.			

6. Test 2 Score

Class 1 (Point) N=32

Student ID	Vocabulary	grammar	Reading Comprehension	Jp-Cn translation	Cn-Jp translation	Total
1840501085	7.0	6.0	41.0	10.0	15.0	79.0
1840501086	12.5	7.0	43.0	9.5	14.0	86.0
1840501087	6.5	7.0	32.0	10.0	14.5	70.0
1840501089	8.0	5.0	35.0	10.0	14.0	72.0
1840501090	3.0	6.0	31.0	10.0	14.5	64.5

1840501091	4.0	3.0	28.0	8.0	13.0	56.0
1840501092	9.5	7.0	32.0	10.0	14.0	72.5
1840501093	9.5	**9.0**	33.0	9.5	15.0	76.0
1840501094	**15.0**	7.0	36.0	10.0	15.0	83.0
1840501095	~~0.0~~	4.0	26.0	9.5	8.0	47.5
1840501097	10.0	5.0	~~6.0~~	10.0	14.0	45.0
1840501098	~~0.0~~	~~2.0~~	29.0	10.0	8.5	49.5
1840501096	6.0	6.0	28.0	10.0	12.0	62.0
1840501099	10.0	6.0	35.0	9.5	14.5	75.0
1840501100	3.5	7.0	27.0	9.5	14.5	61.5
1840501102	12.0	6.0	38.0	10.0	15.0	81.0
1840501103	~~1.0~~	7.0	33.0	~~7.5~~	13.0	61.5
1840501107	9.5	7.0	43.0	10.0	14.0	83.5
1840501109	10.0	8.0	40.0	10.0	12.0	80.0
1840501110	9.5	8.0	30.0	9.0	14.0	70.5
1840501111	7.5	7.0	29.0	10.0	15.0	68.5
1840501112	5.0	8.0	40.0	10.0	14.5	77.5
1840501113	9.5	8.0	37.0	10.0	14.0	78.5
1840501115	13.5	4.0	35.0	10.0	12.5	75.0
1840501116	10.0	6.0	35.0	9.5	14.5	75.0
1840501117	~~1.0~~	3.0	39.0	10.0	14.0	67.0
1840501118	14.5	6.0	46.0	10.0	15.0	91.5
1840501119	11.5	6.0	38.0	10.0	15.0	80.5
1840501120	3.5	4.0	31.0	8.0	10.5	57.0
1840501121	14.0	8.0	42.0	10.0	14.0	88.0
1840501122	9.5	4.0	37.0	10.0	14.5	75.0
1840501114	~~1.0~~	4.0	31.0	9.0	~~6.0~~	51.0

Class 2 （Point） N=36

Student ID	Vocabulary	grammar	Reading Comprehension	Jp-Cn translation	Cn-Jp translation	Total
1840501125	4.5	6.0	30.0	9.5	5.0	55.0
1840501126	**14.5**	6.0	**48.0**	9.5	14.5	92.5
1840501127	6.0	5.0	38.0	9.5	8.0	66.5
1840501129	~~0.0~~	5.0	~~23.0~~	6.0	~~0.5~~	34.5
1840501130	9.5	5.0	38.0	10.0	14.0	76.5
1840501131	10.0	5.0	43.0	9.5	14.5	82.0
1840501132	6.5	8.0	37.0	9.5	14.5	75.5
1840501133	2.0	6.0	38.0	9.5	14.0	69.5
1840501134	3.5	6.0	31.0	9.5	14.0	64.0
1840501135	9.5	6.0	43.0	10.0	14.5	83.0
1840501136	6.0	5.0	33.0	9.5	14.5	68.0
1840501137	10.0	7.0	39.0	10.0	12.5	78.5

1840501138	12.0	8.0	40.0	10.0	15.0	85.0
1840501139	6.0	6.0	31.0	10.0	14.5	67.5
1840501140	4.0	7.0	36.0	10.0	14.5	71.5
1840501141	2.5	6.0	25.0	10.0	13.0	56.5
1840501142	6.5	4.0	36.0	10.0	14.0	70.5
1840501143	7.5	8.0	40.0	10.0	15.0	80.5
1840501144	8.0	4.0	32.0	10.0	14.0	68.0
1840501145	2.5	4.0	30.0	10.0	13.5	60.0
1840501146	5.5	7.0	31.0	10.0	15.0	68.5
1840501147	0.5	5.0	34.0	10.0	12.0	61.5
1840501148	14.5	7.0	40.0	10.0	15.0	86.5
1840501149	5.5	5.0	37.0	10.0	14.5	72.0
1840501150	0.0	4.0	33.0	9.5	11.5	58.0
1840501151	9.5	4.0	26.0	10.0	13.0	62.5
1840501152	9.0	4.0	31.0	10.0	15.0	69.0
1840501153	7.0	7.0	40.0	10.0	13.0	77.0
1840501155	6.0	7.0	36.0	9.5	11.0	69.5
1840501156	12.0	**8.0**	44.0	9.5	13.5	87.0
1840501157	9.5	4.0	36.0	10.0	15.0	74.5
1840501158	12.5	6.0	26.0	9.5	14.5	68.5
1840501159	0.0	3.0	10.0	2.0	0.0	15.0
1840501160	0.0	4.0	32.0	10.0	14.5	60.5
1840501161	8.0	5.0	27.0	10.0	13.0	63.0
1840501162	11.5	7.0	33.0	10.0	14.5	76.0

Class 3 （Point） N=36

Student ID	Vocabulary	grammar	Reading Comprehension	Jp-Cn translation	Cn-Jp translation	Total
1840501163	5.0	6.0	31.0	10.0	14.0	66.0
1840501164	10.5	5.0	39.0	7.0	12.5	74.0
1840501165	6.0	4.0	33.0	10.0	5.0	58.0
1840501166	8.0	5.0	22.0	10.0	12.5	57.5
1840501167	9.0	5.0	40.0	10.0	13.0	77.0
1840501168	**15.0**	4.0	38.0	9.0	15.0	81.0
1840501170	9.0	5.0	28.0	10.0	15.0	67.0
1840501171	11.5	7.0	38.0	10.0	15.0	81.5
1840501172	11.0	7.0	32.0	9.5	14.5	74.0
1840501173	7.5	7.0	33.0	9.5	14.5	71.5
1840501174	**15.0**	5.0	38.0	9.5	15.0	82.5
1840501175	10.5	5.0	33.0	10.0	14.0	72.5
1840501176	14.5	6.0	35.0	10.0	14.0	79.5
1840501179	5.5	4.0	38.0	10.0	14.0	71.5
1840501180	**15.0**	6.0	**48.0**	10.0	13.5	92.5

1840501181	4.0	6.0	34.0	9.5	14.0	67.5
1840501182	3.5	4.0	33.0	10.0	14.0	64.5
1840501183	12.0	5.0	38.0	9.5	13.5	78.0
1840501185	14.5	8.0	42.0	10.0	15.0	89.5
1840501186	3.5	5.0	25.0	10.0	13.0	56.5
1840501187	14.5	**10.0**	45.0	10.0	15.0	94.5
1840501188	6.0	9.0	35.0	9.5	14.0	73.5
1840501189	14.0	8.0	**48.0**	9.5	13.0	92.5
1840501190	**15.0**	8.0	40.0	10.0	14.5	87.5
1840501191	**15.0**	8.0	**48.0**	10.0	15.0	96.0
1840501193	9.0	7.0	41.0	10.0	15.0	82.0
1840501196	6.5	6.0	40.0	10.0	15.0	77.5
1840501197	12.5	6.0	45.0	10.0	15.0	88.5
1840501198	9.5	4.0	36.0	8.5	14.5	72.5
1840501199	11.0	6.0	43.0	10.0	14.5	84.5
1840501200	14.0	6.0	44.0	10.0	15.0	89.0
1840501178	0.0	5.0	32.0	6.0	0.0	43.0
1840501202	2.0	6.0	22.0	10.0	13.5	53.5
1840501169	4.0	4.0	21.0	9.5	14.5	53.0
1840501184	2.0	5.0	26.0	9.5	8.5	51.0
1840501201	14.0	9.0	47.0	9.5	14.0	93.5

Class 4 （Point） N=43

Student ID	Vocabulary	Grammar	Reading Comprehension	Jp-Cn translation	Cn-Jp translation	Total
1840501203	11.0	8.0	38.0	10.0	10.0	77.0
1840501204	12.5	8.0	36.0	10.0	15.0	81.5
1840501205	8.5	5.0	38.0	10.0	12.5	74.0
1840501206	13.5	8.0	28.0	10.0	15.0	74.5
1840501208	5.5	2.0	33.0	10.0	9.5	60.0
1840501209	1.0	6.0	26.0	10.0	14.5	57.5
1840501210	11.0	5.0	27.0	9.5	14.0	66.5
1840501211	14.0	6.0	41.0	9.5	15.0	85.5
1840501212	5.5	5.0	30.0	10.0	13.5	64.0
1840501213	10.0	7.0	**48.0**	10.0	14.0	89.0
1840501214	13.0	6.0	**48.0**	9.5	14.0	90.5

1840501215	9.0	7.0	37.0	8.5	11.5	73.0
1840501216	4.5	7.0	32.0	10.0	14.5	68.0
1840501217	10.5	6.0	34.0	10.0	13.0	73.5
1840501218	7.5	5.0	38.0	10.0	14.0	74.5
1840501220	14.5	10.0	39.0	9.5	15.0	88.0
1840501221	7.0	8.0	36.0	9.5	12.5	73.0
1840501222	13.5	6.0	46.0	10.0	14.5	90.0
1840501223	11.5	7.0	41.0	9.0	14.5	83.0
1840501224	5.0	5.0	37.0	9.5	10.5	67.0
1840501226	10.5	3.0	33.0	10.0	12.5	69.0
1840501227	7.0	3.0	29.0	10.0	13.5	62.5
1840501228	15.0	10.0	44.0	10.0	15.0	94.0
1840501229	10.0	4.0	39.0	10.0	11.0	74.0
1840501230	8.0	6.0	29.0	9.5	15.0	67.5
1840501231	9.5	6.0	46.0	10.0	13.0	84.5
1840501232	15.0	7.0	44.0	10.0	15.0	91.0
1840501233	15.0	8.0	41.0	10.0	14.0	88.0
1840501234	9.5	6.0	34.0	10.0	14.0	73.5
1840501235	13.5	8.0	44.0	9.5	15.0	90.0
1840501236	8.0	5.0	32.0	10.0	8.0	63.0
1840501238	11.5	5.0	34.0	9.5	15.0	75.0
1840501239	11.0	6.0	37.0	10.0	14.5	78.5
1840501240	11.0	6.0	41.0	10.0	13.0	81.0
1840501241	14.5	6.0	43.0	10.0	14.0	87.5
1840501242	7.5	4.0	31.0	9.5	14.0	66.0
1840501243	15.0	4.0	40.0	10.0	15.0	84.0
1840501244	6.0	8.0	32.0	9.5	13.5	69.0
1840501276	15.0	3.0	42.0	10.0	15.0	85.0
1840501225	3.0	2.0	26.0	9.0	5.0	45.0
1840501207	3.0	5.0	25.0	9.5	5.0	47.5

1840501237	5.0	5. 0	27. 0	10. 0	5. 5	52. 5
1840501219	2.0	4. 0	30. 0	9. 5	9. 0	54. 5

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Research grants & awards   No

Research output   No