

## **CHAPTER 2**

### **LITERATURE REVIEW**

#### **2.1 Theoretical Framework**

##### **2.1.1 Language Aptitude**

The term "language aptitude" is a combination of two words, namely "aptitude" and "language." According to the Oxford Dictionary (2022), "aptitude" refers to a natural tendency, ability, capacity, or proficiency to perform a particular task well, which is influenced by innate abilities. Innate abilities are qualities or skills that individuals possess from birth and can impact their capacity to develop certain skills (Loureiro et al., 2013). On the other hand, Rabiah (2018) defines "language" as a means of conveying information and arguments to others. Specifically, it refers to English as a West Germanic language widely used by people worldwide as their first language, second language, or foreign language (Zuliaty Rohmah, 2005). Additionally, language can be employed for knowledge absorption and development (Kasihani, 2001).

Based on the definitions of "aptitude" and "language," it can be inferred that language aptitude entails an individual's innate ability to master English, a globally utilized language that encompasses elements of knowledge. Language aptitude, therefore, denotes a person's capacity to acquire proficiency in English while also utilizing it as a tool for knowledge acquisition. This perspective aligns with the statements made by Carroll (1990) and Wen and Skehan (2011), emphasizing that language aptitude refers to an individual's specific ability to acquire a foreign or second language more effectively and efficiently than others.

This implies that certain students are able to grasp the provided material easily and quickly, while others require more time to understand it, resulting in variations in English proficiency among students. Furthermore, Bialystok (2001), Politzer and Haffield (1969) highlight that aptitude tends to be innate, present in every child, but it needs to be improved and developed through learning, requiring practice, courage, and environmental support. Mastery of language skills in a second language can be predicted through practice, as it is not easily achieved (Kormos and Safar, 2008). Tarigan (2015) asserts that English language training should focus on developing listening, speaking, reading, and writing skills. Moreover, Kasihani (2007) explains that the essential language components to be mastered include grammar, vocabulary, and pronunciation.

### **2.1.2 Modern Language Aptitude Test (MLAT)**

The Modern Language Aptitude Test (MLAT) is a popular and widely used test for measuring language aptitude. Developed by two prominent researchers, John B. Carroll and Stanley M. Sapon (1959), the MLAT has become a standard in measuring and validating new tests related to language aptitude (Grigorenko et al., 2000; Reiterer, 2018). The MLAT has five subtests specifically designed to measure various skills in language learning. These subtests are built upon four fundamental components that form the foundation of foreign language aptitude: phonetic coding ability, grammatical sensitivity, inductive learning ability, and rote memory ability (Carroll & Sapon, 1959 in Reiterer, 2018).

The development of this test focuses on cognitive aspects relevant to language learning ability, and the results provide a deep understanding of one's potential in the early stages of L2 learning (Sasaki, 2012 in Reiterer, 2018; Robinson, 2005). It can help educators gain a deep understanding of an individual's specific abilities and skills in learning a language, identify areas of concern, and develop teaching strategies that suit individual needs.

The MLAT is a test that has gained recognition and is widely used by educational institutions, governments, and language training centers around the world. The accuracy and validity of the MLAT are supported by careful development and robust research methods. The test length and multiple response options on the MLAT are features that tend to increase the reliability of test scores by reducing measurement error. In addition, the MLAT has also demonstrated high predictive validity, meaning that it is able to accurately predict the language abilities that individuals will achieve in the future (Sasaki, 2012 in Reiterer, 2018). Over the course of language aptitude research, the MLAT has consistently produced the highest order of correlation, with a correlation of 0.5, despite the presence of other factors that influence language learning (Stansfield and Reed, 2019). Based on the accuracy, validity, and correlation, it can be concluded that the MLAT has consistency in measuring and predicting an individual's level of language ability.

### **2.1.3 English Learning Achievement**

In this description, the writer will explain about achievement, learning, and learning achievement. According to popular dictionaries, achievement refers to

something that has been accomplished through skill, effort, and bravery. This aligns with the perspective of Dweck (2006), who says that achievement is the outcome of what individuals have learned from several educational experiences. These viewpoints indicate that achievement is the result of learning experiences encompassing knowledge, skills, and attitudes. The Dictionary of Psychology, proposed by Chaplin (1985), defines learning as the acquisition of relatively permanent changes in behavior resulting from practice and experience. These changes encompass cognitive, affective, and psychomotor aspects (Bloom, 1977; Harrow, 2012; Anderson & Krathwohl, 2010). Additionally, Sardiman (2005) states that learning involves demonstrating changes in behavior through a series of activities such as observing, reading, initiating, listening, and following instructions.

Based on the above opinions, it can be inferred that achievement is the outcome of learning, while learning represents the process of behavioral change. Both contribute to the attainment of knowledge, skills, and attitudes by students. Consequently, learning achievement refers to the outcomes students attain through the learning process, which, in this context, refers to the planned instructional activities implemented by teachers in the classroom to foster mastery of knowledge, skills, and attitudes. This aligns with the views of Biggs (2011) and Hattie (2009). Learning achievement is the extent to which the results have been achieved by students in mastering the tasks or subject matter received within a certain period of time. The material that must be mastered by students refers to the material prepared by the teacher.

#### **2.1.4 The Relationship between Language Aptitude and English Learning**

##### **Achievement**

Based on previous views, language aptitude is the high ability that individuals have in mastering English or other foreign languages that can be observed from listening, speaking, reading, and writing skills. To assess individual variations and determine proficiency in these four skills, the development of a test becomes necessary. (Carroll and Sapon's description) The most widely used and accepted test is the Modern Language Aptitude Test (MLAT), developed by Carroll and Sapon (1959). This test has been used throughout the world and can be translated into various languages such as French, Japanese, Polish, and Hungarian (Standfield and Reed, 2005). It has been proven: Gardner and Lambert (1960) used the MLAT in French classes in the US and found talent through the test. Horwitz (1987) utilized the MLAT to assess communicative and grammatical competence, while Ranta (2002) applied it in a communicative class involving sixth-grade students. Moreover, Li's (2015) research indicated that the MLAT exhibits a predictive power of approximately 0.34, surpassing the average of all aptitude tests. Based on the reviews, it can be concluded that the MLAT test is a good and reliable tool for predicting aptitude. Carroll and Sapon developed four sub-components of ability that are considered crucial in English learning, including:

1. **Phonetic Coding Ability**

The ability to perceive and remember different sounds associated with symbols.

2. Grammatical sensitivity

The ability to recognize the grammatical functions of words in sentence structures.

3. Inductive learning ability

The ability to infer or induce rules governing the structure of a language.

4. Rote learning memory ability

The ability to learn and maintain the relationship between words in the new language and their meanings in English rapidly and efficiently.

The four sub-components outlined above are subdivided into five parts that will be tested on language aptitude, including:

1. Part One: Number Learning (Memory, Auditory Alertness)

This test is intended to measure auditory and memory skills related to the relationship between sound and meaning. In this part, students learn the names of numbers in the new language (e.g. 'ba' is 'one'). Next, they listen to the names spoken aloud, and they are asked to write down the numbers into English numerals.

2. Part Two: Phonetic Script (Association of Sounds and Symbols)

This test is intended to measure phonetic coding ability. Students will first learn the association between several phonetic symbols (e.g. 'buk') and sounds (e.g. the sound of /buk/). and select a symbol corresponding to a sound they hear.

3. Part Three: Spelling Clues (English Vocabulary, Association of Sounds and Symbols)

This test is intended to measure English vocabulary knowledge as well as phonetic coding ability. The test requires the students to recognize English words written in a reduced form instead of using the conventional spelling system (e.g. 'restrnt' for 'restraint') and choose from four options the one that is closest to the word in meaning (e.g. 'self-control' for 'restrnt (restraint)').

4. Part Four: Words in Sentences (Grammatical structure in English)

This test is intended to measure grammatical sensitivity. In this test, the students are given a pair of English sentences, with the first sentence having one word underlined. The students are then required to select one word with the same grammatical function as that of the underlined word in the first sentence, as in the following the example:

For example: **John** took a long walk in the woods.

Children in the blue jeans were singing and dancing in the park.

A B C D E

You would select "A." because the key sentence is about "John" and the second sentence is about "Children."

5. Part Five: Paired Associates (Memorizing words)

This test is intended to measure 'rote learning ability for foreign language materials.' The test requires the students to memorize the Indonesian-English vocabulary (e.g. Gagah = Gutsy). Then they were



given five choices for each question to test their short-term memory. (The students learn a written Indonesian-English vocabulary list, practice the visible stimulus-response pairs, and then are tested with multiple-choice items.)

The application of the language aptitude test involves two main stages: the pretest and the treatment stage. The pretest is administered before the commencement of the learning process and serves to obtain an initial score, which can be used to predict the impact on the final achievement in foreign language learning. Subsequently, the second stage entails the implementation of the treatment, which is designed based on the results of the pretest (language aptitude test) and further developed throughout the learning process. During this stage, teachers play a guiding role by instructing and training students using provided materials. The materials are repeatedly taught, taking into account both external and internal factors, and incorporating indicators for English learning encompassing the four skills: listening, reading, writing, and speaking. Additionally, language components such as pronunciation, grammar, and vocabulary are addressed. These skills and components are developed over a predetermined period of six months or one semester.



**Table 2. 1The Suitability of Aptitude Test and Learning Achievement**

No.	Language Aptitude Test (MLAT)	Learning Achievement						
		Listening	Speaking	Reading	Writing	Pronunc	Vocab	Grammar
1.	Number Learning	✓						
2.	Phonetic Script	✓	✓			✓		
3.	Spelling Clues		✓			✓	✓	
4.	Words in Sentences				✓			✓
5.	Paired Associates Learning	✓		✓			✓	

*Source: Modified results from Carroll and Sapon(1959) and Interactive English book XI Class by Intan Pariwara (2022)*

Based on Table 1, it shows that there is a relative compatibility between the components of language aptitude and the learning achievement test developed for English learning materials in school. This compatibility allows for the execution of this research, as it follows a compatible procedure to determine the relationship between language aptitude and students' learning achievement. Consequently, conducting a test becomes necessary. The results of this test are referred to as learning achievement and can be considered as the posttest results. The grades obtained by students in these tests are recorded in their report cards, where the teacher categorizes their learning achievement, leading to the determination of cumulative achievement (average).

Regarding the language aptitude test, the results obtained from this test also yield cumulative results (average). This is done to predict the success of students' English learning achievements. High results in the language aptitude test indicate

a high potential for student learning achievement, while medium or low results correspond to moderate or low levels of learning achievement. Thus, it can be concluded that the outcomes of the aptitude test have an impact on students' learning achievement at school. However, achieving the results in both tests can be influenced by other factors. According to Djaali (2008), the learning process is influenced by internal factors such as intelligence, talent, interest, motivation, and learning style, as well as external factors including the learning environment, school, and society. These factors may affect students' English proficiency if the results are inconsistent with the aptitude test. However, for the purpose of this study, the focus is solely on the effect of language aptitude on learning achievement.

## **2.2 Previous Study**

This research aims to contribute to the development of human resources in English proficiency, which is still relatively low. To assess English language mastery, it is important to evaluate an individual's aptitude for learning the language. Previous literature research has explored the development of language aptitude, with Carroll and Sapon (1959) being the pioneers who developed the Modern Language Aptitude Test (MLAT) as a tool to predict English proficiency. However, Ellis (1986), Brecht, Davidson and Ginsbeg (1995) criticized the MLAT, stating that it was a good predictor for reading and writing skills than for speaking skills.

Further studies have also examined the relationship between language aptitude and English learning achievement. David Rosa Gonzales (2011) also

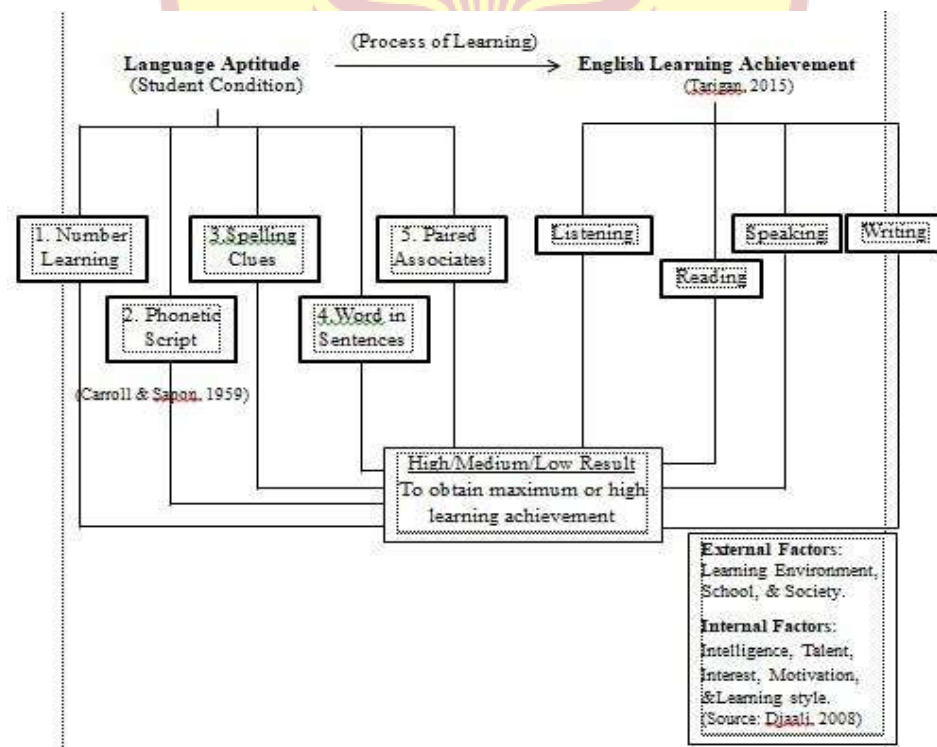
researched the development of language aptitude in *The Effects Of Aptitude And Motivation On The Acquisition Of EFL In Young Learners*, which was conducted at the elementary school level in Barcelona. In this study, the writer focused on the development of language aptitude and student motivation. His research showed that there was a positive relationship between proficiency and aptitude with a coefficient  $r = 0.771$  or 77%, while for motivation was not so strong at  $r = 0.358$  or 36%. Similarly, Ledda Rista (2014) investigated *The Correlation Between Students' Language Aptitude and Their Achievement in Learning English*, conducted at SMA Negeri 3 Pekanbaru. In this study, the writer used Cluster Sampling Technique for the samples and the Pearson Product-Moment Correlation Coefficient ( $r$ ) technique. This technique only measured the closeness of the relationship between two variables. Her research showed that the correlation coefficient ( $r$ ) was 0.792, or 79%, which means that there is a positive relationship between language aptitude and students' English learning achievement at SMA 3 pekanbaru.

Another study, by I Kadek Dony Suantika (2014), also examined the title *The Impact Of Aptitude Toward Performance Of EFL Learners In SMP Negeri 1 Gianyar*. The research conducted in SMP Bali demonstrated that language aptitude played a significant role in the performance of EFL learners, with a positive relationship observed between language aptitude and English learning achievement. Students with high language aptitude scores tended to achieve higher English learning achievement, while those with low aptitude scores had lower achievements.

In line with previous research, the current study also utilizes the MLAT developed by Carroll and Sapon, which has been widely accepted as a reliable tool for predicting language aptitude. This research is being conducted at a senior high school in Papua, using simple random sampling for participant selection. The data analysis technique employed is simple linear regression analysis to predict the relationship between the two variables. Data collection methods include documentation and tests.

### 2.3 Conceptual Framework

In this study, the framework refers to the opinions of Carroll and Sapon along with the researchers in the literature review.



Picture 2. 1Framework: The Relationship between Language Aptitude and English Learning Achievement.

Based on the framework "Picture 1", it shows that the first stage is the initial condition of the students. At this stage, the teacher is unaware of the capacity of the students' mastery of English. Therefore, a language aptitude test (pretest) is administered. This test utilizes the Modern Language Aptitude Test (MLAT) developed by Carroll and Sapon (1959), which consists of five components: Number Learning, Phonetic Script, Spelling Clues, Word In Sentences, and Paired Association. After conducting the aptitude test and the students' capacities are known, the second stage begins, which involves providing treatment.

During the treatment stage, the teacher guides, teaches, and trains students using materials that cover the four English language skills: listening, reading, speaking, and writing. The selection and development of these materials are based on the results of the students' language aptitude. This instruction is delivered consistently over a specified period, typically six months or one semester. After receiving guidance and training for six months, the third stage follows, often referred to as the post-test stage.

In the post-test stage, the students' proficiency in the four English language skills, which have been developed through training, is assessed using tests created by the teacher or school. The outcome of this test is referred to as the students' learning achievement (post-test score). The relationship with language aptitude lies in the fact that the initial aptitude test results can predict the subsequent level of student learning achievement (Carroll, 1990). In other words, high or low scores on the aptitude test at the beginning can indicate high or low levels of

learning achievement. Therefore, it can be concluded that the results of the aptitude test significantly impact the level of student learning achievement at school. However, if there are inconsistencies between the aptitude test results and student learning achievement, it suggests that other internal and external factors might be influencing the achievement (Djaali, 2008).

## **2.4 Hypothesis of the Study**

### **a. The Null Hypothesis (Ho)**

There is no significant relationship between language aptitude and English learning achievement at SMA Negeri 1 Jayapura

### **b. The Alternative Hypothesis (Ha)**

There is a significant relationship between language aptitude and English learning achievement at SMA Negeri 1 Jayapura

Based on the theoretical framework, previous studies, and conceptual framework, the researcher concludes that there is a significant relationship between language aptitude and English learning achievement at SMA Negeri 1 Jayapura. The research hypothesis put forward in this study suggests that students with high language aptitude are likely to achieve higher English learning achievement, whereas those with low language aptitude are expected to have lower English learning achievement. As a result, the Alternative Hypothesis (Ha) is accepted based on the findings.