

The application of language aptitude (grammatical area) in second language acquisition

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Abstract: *Language aptitude, as a crucial aspect in assessing students' potential in second language acquisition, has long been a focal point of attention. This paper focuses on understanding the role of language aptitude in the domain of grammar. By summarizing three studies related to language aptitude in the field of grammar and integrating with my previous teaching experience, it examines the influence of language aptitude on English grammar in Second Language Learners.*

Keywords: *Language aptitude (grammatical area), Second language acquisition, Language teaching*

1. Introduction

Language aptitude, an important direction in the study of second language acquisition, is a key factor in learning foreign languages by adults ^[1]. Several studies have concluded that differences in language aptitude can determine how successful an adult will be in the language field. And current research on language aptitude has focused on two main areas: measures of inductive language learning and grammatical sensitivity sub-test ^[2]. Both directions suggest that aptitude is a central issue in SLA rather than a peripheral one ^[3].

This report will summarize three studies on the grammatical area with language aptitude, look at the impact of language aptitude on language grammar, and give some personal insights in the context of my previous teaching experience.

2. Theory associated with the topic

Language aptitude is the initial ability and readiness of an individual to learn a foreign language and consists of four main aspects: phonological decoding ability, grammatical sensitivity, inductive language learning ability, and rote learning ability ^[4]. Although the concept of learning aptitude has not been unified yet, two representative definitions are from Carroll & Sapon (2002) and Robinson (2005). Carroll & Sapon (2002), the central figures in early academic aptitude research, considered academic aptitude as a set of cognitive abilities that predict the extent to which learners can achieve second language learning in a given context and time frame. Robinson (2005) defines academic aptitude from the perspective of information processing and considers it a set of cognitive abilities used in different stages and contexts of second language learning and information processing, reflecting a dynamic view of academic ability. Based on this concept, experiments on academic ability have introduced two additional components: working memory and implicit learning ^[5]. Although the starting point of the two definitions is different: the former focuses on learning outcomes and the latter on learning processes, they both consider that learning ability includes multiple cognitive abilities.

The research on the relationship between learning aptitude and second language grammar learning is mainly in two aspects. The first one is to explore the influence of learning ability on second language grammar learning in teaching contexts. Some scholars have explored the role of language aptitude in different teaching dispositions. And learners generally receive different levels of explicit and implicit instruction for certain grammatical structures, and the relationship between learning aptitude and grammar learning is explored ^[6]. The second type explores language aptitude and age factors on learners' effectiveness in second language grammar learning ^[7].

Moreover, the analysis in this report is mainly based on Carroll's definition, especially the part of grammatical sensitivity, which is summarized by three empirical studies. For the language proficiency

test, LLAMA (language aptitude test) was used as a unified test. LLAMA is a computerized proficiency test that consists of four areas ^[8]: 1. vocabulary learning task, which measures the ability to learn a relatively large number of words in a short period of time. 2. sound recognition, which refers to testing the participant's ability to recognize the presence of previously known sound segments in a new sequence. 3. sound-symbol correspondence task, which ability was demonstrated by recording 24 syllables, requiring participants to phonetically translate 24 syllables with unfamiliar letters. 4. A grammatical reasoning task. This ability was tested by presenting sentences in an unknown language, during which participants received sentences in a completely unfamiliar language and had to figure out the meaning of the sentences.

3. Current empirical research

3.1. *Research 1: Grammatical sensitivity in early Japanese acquisition (VanPatten & Smith, 2015)*

VanPatten and Smith (2015) argue that language acquisition makes a by-product of the learner's internal mechanisms, i.e., the by-products of language and that the morphological units of the language learner during input will continue to power the internal mechanisms over time. This viewpoint is presented mainly against 1. The idea that language is composed of rules and its corollary 2. That language acquisition requires the learning and internalization of these rules.

To demonstrate this view, VanPatten and Smith (2015) selected 47 undergraduate students and set the language of study to Japanese. The subjects were all members of a fourth-semester Spanish class, all of whom had English as their first language, and no students had been exposed to Japanese prior to the experiment. Japanese was chosen because it is a language with the exact opposite grammatical rules of English, which is uniform and fair to all subjects. The grammatical composition in Japanese is head-final, while in English, it is head-initial ^[2]. For example, "play computer" in English equals "computer play" in Japanese.

In the experiment's parts, the author tested it into three ways, including: (1) to measure the participants' grammatical sensitivity, (2) to understand the basic word order in Japanese, and (3) to understand the students' feedback after the correction. In all three parts, LLAMA was used and analyzed in conjunction with variance, and the results showed that grammatical sensitivity as tested by LLAMA was not related to language aptitude. This result is the same as that argued by Vanpatten (2011) and Vanpatten and Rothman (2013) that proficiency tests should be related only to the surface features of the language that learners can actually gather from the input. However, in that experiment, VanPatten and Smith (2015) performed explicit rule learning on the participants alone, which may have influenced the different performance of the participants' own reflections on the learning process. For example, participants may have been able to conclude through their own reflections that the rule "verbs should be placed last" in Japanese was not reflected in the experiment.

3.2. *Research 2: Language aptitude and grammatical complexity in EFL Classrooms (Yalçın & Spada, 2016)*

Yalçın's and Spada's experiment studied Turkish students who speak English as a second language. The passive voice and the past progressive tense in English were chosen for the study in terms of grammatical structure. This was mainly decided based on the learning level of the participants, as the passive voice is considered to involve more grammatical operations ^[9] and lack of frequency in the input, making EFL learning difficult.

In this experiment, the study was conducted with 66 secondary school students whose English was at an intermediate level, and the passive voice, as a more complex structure in English grammar, was more suitable as the research direction for the experiment. In addition, the past progressive tense is usually associated with verbs and is achieved through free morphemes (was/were) and syllable-bound morphemes (-ing), and this variation is a good representation of phonological competence in language ability.

In studies on the passive voice, it was found that participants' performance on the passive voice was more dependent on language aptitude, especially grammatical inference ability. Although students (participants) can also stimulate grammatical knowledge of the passive voice through explicit instruction from others (e.g., the teacher), the acquisition of grammatical inferencing skills can help learners to grasp difficult points more quickly with other language development. Language aptitude is actually an

additional resource for learning difficult language structures ^[9].

The study of the past progressive tense relied mainly on the study of participants' oral language. After the experiment, Yalçın and Spada (2016) found that almost all learners were able to recognize their errors through speech and make timely corrections. That is, language aptitude was not evident in tasks where the degree of difficulty was not that high.

3.3. Research 3: *language aptitude variation and grammatical collocation learning (Farshi & Tavakoli, 2019)*

Unlike the first two experiments, Farshi and Tavakoli (2019) recognized the development of language aptitude and began to introduce working memory as well as input condition into the experimental study. Eighty-seven Iranian high school students were chosen to carry out the experiment, which focused on the collocations they used in English (second language) in their daily communication. For the part of working memory, the experiment used a time-limited approach to study the memory capacity of the students.

The results of the experiment showed that the more detailed the process of input, the more beneficial it was to improve the students' grammatical performance as well as their working memory capacity (Long Ross, 2009). Although the detailed input required a longer duration of original input and even more complex linguistic texts, it showed higher efficiency in the later output and memory sessions. In addition, timely feedback and review are very important ^[10]. They are even more important than fine-grained input, and in the experimental study, timely feedback (including quizzes, verbal feedback from teachers, etc.) and review can help participants acquire grammar rules and language knowledge authentically and effectively.

The experiment is innovative in its choice of direction and represents the future direction of language proficiency. At the same time, the choice of experimental materials was deliberately made by selecting texts produced by native English speakers for the experiment, effectively avoiding the interference of a second language environment other than the experimental subjects.

4. Evaluation

Although the three pieces of research were conducted with different age groups and in different countries, they all used the LLAMA as one of the test methods. However, it is worth noting that the effect of LLAMA is not suitable for language learners like Chinese students or other non-native English speakers of different native languages ^[11].

For example, in the case of Chinese students, the third part of the LLAMA, the sound-symbol correspondence task, can be particularly difficult for Chinese learners. Because Chinese characters are pictorial rather than alphabetic, Chinese learners are much less sensitive to alphabetic characters than native alphabetic learners, so they are at a distinct disadvantage when taking these types of questions. In addition, the theoretical basis of LLAMA is the phonemic, syntactic, semantic, and lexical systems of English. When testing Chinese learners, the transfer of Chinese script features can interfere with and even mislead the subjects to make wrong judgments. If the original version is used to test Chinese or non-native English speakers, its reliability is affected by the participants' native language factors (Dai, 2006). Those who are proficient in English will show higher linguistic ability on the test (all else are identical), while their linguistic performance may not be high; conversely, those who are less proficient in English may not have poor linguistic performance, despite their scores is not good.

In other words, we need to improve the LLAMA test for different countries and learners' characteristics, rather than to use the original test alone.

4.1. Proposed applications for teaching

All of these three researches shed light on teaching methods. Research 1 showed that language aptitude does not determine the degree of success in the grammar of language learning. It suggests that we should avoid using "you are a gifted language learner" or "you are not fit to learn this language" feedback when teaching languages. Students should avoid thinking that they are deficient or gifted in the language. Second, language aptitude is reflected in language surface reminds us that positive feedback can be used when focusing on language representation and attributing success in expression to students' self-effort. Through this way, it can help students improve their internal language skills and potential.

Research 2, it suggests that we should focus on individual differences in language teaching. The difficulty of the task can address this variability in language aptitude. When issuing classroom tasks, teachers can give different learning tasks for students of different abilities. For example, students of higher ability should read three articles per week when assigning weekly reading tasks, while students of relatively lower ability should only complete one reading. In addition, students can be differentiated according to their strengths and weaknesses so that they can complement their strengths when assigning homework.

Research 3 reminds us that timely feedback and review can compensate for the lack of language skills during grammar teaching. This reminds us that we should set aside time for summarization and feedback during the teaching process, for example, a 45-minute class should set aside 5-10 minutes for classroom knowledge sorting and summarization. In addition to timely feedback in each lesson, teachers should intentionally review and remind in the next lesson for any problems that arise during feedback. The use of recurring tasks creates a closed loop of knowledge that facilitates students' understanding and absorption of classroom knowledge.

4.2. Why and How would my students benefit from this practice

In Research 1, the experimental results showed a little role for language aptitude in adult language learning, and this weakening was also reflected in grammatical sensitivity. If the results of this experiment are indeed valid, then the status about grammatical sensitivity will also change. Grammatical sensitivity would be restricted to (explicit) learning rules rather than a by-product of processing combined with morphological units in the input and internal mechanisms used to organize and create language [2]. This conclusion is encouraging for learners who, like me, do not think they have a talent for language learning. Learners can achieve any purpose of language learning through personal effort without being constrained by language aptitude. For example, my student Kimo, who is an early childhood ELT teacher, was very unsure of her speaking because she could not produce the nasal sounds in the English phonetic alphabet. And she believed this drawback was due to her innate condition, but this was not the case. I believe that once she shifted this perception, nasal sounds would be easy for her. Oftentimes, we should attribute the results of our learning to the method first and foremost, rather than talent or ability.

Research 2 emphasized the complex interplay between several factors in the classroom setting, including language ability, task difficulty, etc. The results suggest that different aptitude components contribute in different ways to learning second language grammatical structures of varying difficulty. Teachers should encourage the learning process through specific teaching methods to promote the growth and demonstration of competence [12]. Although linguistic aptitude does not play the same role in learning different language structures [13], teachers can further stimulate students' linguistic competence by adjusting the difficulty of the task. For example, for Chinese students in grades 5-6, reading materials should be story-based narratives with a word count of about 200 words each (about the same level of difficulty as native English learners in grades 2-3) whenever possible, rather than choosing more difficult learning materials such as Charlotte's Web.

Moreover, research 3 shows that a large number of grammatical collocations embedded in well-designed input is a fruitful approach and that this effect is not firmly related to language aptitude [10]. Also, this research reminds teachers to pay more attention to teaching methods and instructional design in language teaching and give students timely feedback and review their knowledge in teaching. Only timely and cyclical feedback will allow students to maximize their language skills. The results of this study, however, are primarily intended to inspire teachers to think about language teaching and learning rather than the students' perspective.

5. Conclusion

Language aptitude is one of the important research directions in second language acquisition, which particularly evident in the initial stages of learners' learning. And the effects of language aptitude begin to weaken as language learning progresses. This is good news for learners who are not confident in their language talent, and it reminds learners that language ability does not determine the level of language learning outcomes.

In addition, based on these three empirical research, teachers' teaching methods were inspired by the three studies. First, although language ability does not determine the level of learner achievement, teachers should develop different tasks for different learners because learners do not have the same

learning ability. Second, teachers should provide timely feedback on students' performance in the learning process, motivating students of all abilities.

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