
RESEARCH ARTICLE

A Literature Review of the Effect of Individual Differences on Second Language Acquisition

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ABSTRACT

Since the 1950s, the influence of individual differences in second language acquisition has received widespread attention, and each learner's individual differences affect the success of second language acquisition. However, the research on individual differences is very complex. In order to further investigate how individual differences affect the second language acquisition process, this paper starts from three aspects of individual differences influencing factors: (1) the study of general individual factors of second language learners, such as age, gender and cognitive style; (2) the study of second language learners' attitudes and motivation, such as learners' attitudes toward learning the target language, learners' research on second language learners' attitudes and motivations, such as learners' attitudes toward the target language, learners' attitudes toward the social and cultural background of the target language, integration motivation and instrumental motivation (3) research on second language learners' strategies, such as learners' cognitive strategies, learners' meta-cognitive strategies and learners' social strategies, in order to explore the effects of these individual factors in second language acquisition, so as to find countermeasures that can really help improve second language learners' learning efficiency and further improve and develop better. The purpose of this study is to explore the effect of these individual factors on second language acquisition, so as to find out the measures that can really help improve the learning efficiency of second language learners, and further improve and develop a better method of teaching foreign languages according to their abilities.

KEYWORDS

Second language acquisition; individual differences; learner factors

ARTICLE INFORMATION

ACCEPTED: 12 September 2023

PUBLISHED: 01 October 2023

DOI: 10.32996/ijllt.2023.6.10.1

1. Introduction

The relationship between individual differences and second language acquisition is inextricably linked, and in order to investigate what relationships exist between individuals' characteristics and their ability to learn a second language successfully, and how to figure out coping strategies based on these relational features, it is important to understand the origin and connotation of each. Therefore, in this chapter, the definitions of both second language acquisition and individual differences will be explained in detail.

1.1 Definition of Second Language Acquisition

In 1967, Larry Selinker first introduced the theory of mediated language in his book *Language Migration*, and second language acquisition theory gradually began to become an independent discipline with its own field of study.

The simplest definition of second language acquisition can be understood as the process of learning a second language (Wikipedia). A second language is any language other than the first language acquired by the learner, and even if multiple languages are learned, they are all second languages to the native language and can be included in the study of second language acquisition. Second language emphasizes the sequential order of language acquisition, independent of the context in which it is acquired. There is a clear distinction between acquisition and learning; acquisition occurs only in the natural use of a language,

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and acquisition is much more important than learning because learning is a conscious process involving grammatical rules. Consciously learned rules supervise the speaker's output to varying degrees, and this supervision is based on the communication situation and the personality of the speaker. Acquisition is subconscious and enables adults to learn a second language in the same way that children learn their first language (Krashen, 1982). Second language acquisition includes not only language learning in the formal classroom but also learning in a natural setting without any instruction (Ellis, 1997).

In summary, the field of second language acquisition has been studied to systematically explore the nature of second language acquisition and the process of acquisition, with the main goal of describing how learners acquire a second language and explaining why learners are able to acquire a second language. To date, the scope of research on second language acquisition is much broader than it was in the 1970s and 1980s, involving numerous aspects of linguistics, psychology, psycholinguistics, pragmatics, sociolinguistics, and so on.

1.2 Definition of Individual Differences

Research findings over the past decades have consistently shown that the key reason for the failure of many second language learners is that learners differ in various attributes, such as personality traits, motivation, or language ability. In psychology, these attributes are traditionally referred to as individual differences. The concept of individual differences has been defined differently by different scholars. According to Ellis (1994), the general factors that influence individual differences in second language learners can be seen as a continuum of invariant and variable factors. Invariables are those factors that are not controlled by the external environment, such as the age, personality, and linguistic ability of the second language learner; variables are those factors that change due to the influence of external factors, such as the attitude and motivation of the second language learner, among those in between, such as the cognitive style of the second language learner.

Since the 1950s, many researchers have conducted extensive and in-depth research on individual differences in second language acquisition, which refers to the differences in learning rate, learning styles, learning outcomes of second language learners in the process of language acquisition. Individual differences include three factors: 1) research on general individual factors of second language learners, such as age, gender, and cognitive style; 2) research on second language learners' attitudes and motivations, such as learners' attitudes toward learning the target language, learners' attitudes toward the socio-cultural background of the target language, integrative motivation, and instrumental motivation; 3) research on second language learners' strategies, such as learners' cognitive strategies, learners' metacognitive strategies, and learners' social strategies. The study of individual differences can enable a real focus on individual learners and their variations for better second language acquisition and improve second language teaching in China according to the characteristics of learner differences.

2. Literature Review

The individual difference factors affecting second language acquisition include three aspects: 1) research on general individual factors of second language learners, such as age, gender and cognitive style; 2) research on second language learners' attitudes and motivations, such as learners' attitudes toward learning the target language, learners' attitudes toward the socio-cultural background of the target language, integrative motivation and instrumental motivation 3) research on second language learners' strategies, such as learners' cognitive strategies, learners' metacognitive strategies, and learners' social strategies. In the following, the influence of each of these three categories of factors on second language acquisition will be studied and discussed.

2.1 General Individual Factors

The general individual characteristics of learners directly affect second language learning outcomes, which are discussed here in terms of general individual factors of second language learners involving three aspects: age, gender, and cognitive style.

2.1.1 Learners' Age

Age is often easier to define and measure than individual factors such as personality and motivation; however, the relationship between age and second language acquisition in L2 acquisition is more complex and notoriously controversial.

In the 1960s, Lenneberg proposed the critical period hypothesis for L2 acquisition, suggesting that there is a critical period for L2 acquisition, like native language acquisition, during which the human brain is plastic and can easily acquire language, and that once this period is exceeded, most people's brains become lateralized, making language acquisition more difficult. However, a recent study by Hartshorne (2018) et al. using a dataset and computational model to estimate how grammatical learning ability changes with age showed that learning rates begin to decline at 17.4 years of age, thus supporting the idea that there is a clear critical period for language acquisition, which is much later than the commonly believed shift in the critical period for language acquisition.

Age is the beginning of learning. Struys(2015) et al. used the Simon task to examine the effect of age of L2 acquisition on measures of cognitive control, and the experimental results showed that children who acquired two languages from birth had an advantage over early bilingual children in terms of cognitive control, while second language ability remained constant. Overall, the age of onset of L2 acquisition is important in early bilingual children, and the earlier the better.

A well-recognized finding in the AOA effect is that words acquired at an earlier age are processed faster than words acquired at a later age. Dirix(2017) et al. used a combination of eyetracking and megastudy to investigate the AOA effect in L2 by assessing the time course of the AOA effect on second language reading and showed that there was a second language AOA effect in both early and late second language reading measures, and that in second words that were learned earlier in the second language had faster fixation times. This further confirms that early second language learners are better at acquisition than late learners.

There is still much controversy about the critical period hypothesis among the age factors of second language acquisition, however, capturing the critical period is important for acquisition, and the earlier the age of acquisition, the better. However, there is still a lack of explanation for some of the acquisition countertransparent phenomena, which needs to be further explored by considering the combination of age and other influencing factors.

2.1.2 Learner's Gender

In second language acquisition, attention should be paid to considering the influence of gender differences. According to previous studies, male and female students have different learning characteristics in the process of second language acquisition, and such characteristics directly affect their second language acquisition.

Kelsen (2017) investigated the listening and reading performance of 229 EFL students and analyzed the data from a gender perspective by measuring their English proficiency. The results showed that male students with ADHD performed lower in English than female students who also had ADHD, and male students had lower listening, reading, and overall scores. This demonstrates that a student's gender is a potentially important risk factor that may hinder their EFL learning in inattentive, hyperactive, and impulsive student populations.

Chen (2019) examined the effects of captioning and gender on academic performance and motivation when learning in context. The results showed that the effects of captioning and gender on learning achievement were significant, with the male non-captioned group outperforming the male English captioned group, while female learners in both groups performed equally well. From the perspective of active learning and goal achievement, male learners' motivation was more influenced by captioning than female learners.

By investigating the effects of gender differences and learning styles on EFL students' writing ideas, Ningrum(2016) divided the students into a linear note control group and a mind mapping experimental group to test their TOEFL scores, and the results showed no significant differences in the development of students' writing ideas between gender differences and students' learning styles. This indicates that the influence of gender is not significant in second language writing thinking.

Most of the results show that there are gender differences in the effectiveness of second language acquisition, and most female learners learn better than male learners, and there are also individual aspects of language acquisition that do not show significant differences, so further attention needs to be paid to the influence of different characteristics of male and female learners in language acquisition, using a combination with other factors such as motivation or their own interests to further investigate gender in other aspects of learning Whether there is an effect of gender on other aspects of learning.

2.1.3 Learner's Cognitive Style

Cognitive style refers to the typical ways in which individuals perceive, remember, think, problem solve, make decisions, and process information. Known as learning styles when cognitive characteristics are used in educational settings, learning styles can be thought of as cognitive, affective, and physical characteristics that are relatively stable markers of how learners perceive, interact with, and respond to the learning environment. (Keefe 1979) recognizes students' learning styles and preferences, which constitute an important aspect of individual differences in second language learners.

Tsuchiya (2017) investigated the relationship between the listening ability of subjects regarding their field-independent/dependent (FI/D) cognitive styles and their use of listening strategies based on the differences in field orientation of cognitive styles. By testing 153 adult EFL subjects, the results showed that significant differences between field-independent and field-dependent subjects were found in only a few listening strategies, which proves that the use of listening strategies may be influenced more by task content than by individual cognitive styles.

Rassaei (2015) compared the extent to which FD and FI learners benefited from implicit and explicit corrective feedback through a survey, and the results showed that field-independent learners benefited better than field-dependent learners in reduplication. This study also has strong practical implications, clarifying that knowledge of learners' cognitive styles can help teachers use more appropriate feedback strategies that match students' learning preferences and styles.

Mina Haghghi (2015) studied the impact of learners with both impulsive and reflective traits on EFL success, measuring participants' second language proficiency based on tests, and found no statistically significant relationship between performance and learners with different traits, and data analysis showed no difference in English proficiency between impulsive and reflective learners, suggesting that in the process of second language acquisition, one should This suggests that the two different cognitive styles of learners should be treated equally in the second language acquisition process.

The individual learner's cognitive style is thought to play an important role in second language learning. One type of cognitive style is the FD/FI cognitive style, which has been extensively studied both within and outside the L2 acquisition field, and successful second language learners can take advantage of both field-independent and field-dependent features when necessary to take into account different characteristics of learning styles in order to maximize the learning effect.

2.2 Attitude and Motivation Factors

Learners' attitudes and motivations influence and permeate the whole process of second language acquisition. Studies on second language learners' attitudes and motivations involve learners' attitudes toward the target language and learners' attitudes toward the socio-cultural background of the target language, and motivations can be divided into integrative and instrumental motivations.

2.2.1 Learners' Attitudes

Over the past three decades, attitude has played an important role in second language learning research, and it is considered a fundamental factor influencing language performance that has received a great deal of attention from both first and second language researchers. Attitudes are how people feel about their language (Rahman), and therefore, attitudes toward learning the target language can explain where language behavior comes from, thus putting second language learners' learning in a more visual context.

Using Spolsky's (1989) model of second language learning and Gardner's (1985) theory of second language acquisition, Zulkefly interviewed four students in two different grades through a case study and showed that the inappropriateness of the curriculum to the students' ability level and interests and the students' personal reactions to negative and positive experiences severely influenced the students' attitudes.

Eshghinejad (2018) studied the attitudes of university male and female English learners towards English learning in behavioral, cognitive and affective aspects, and the results of the data analysis through questionnaires showed that students had positive attitudes towards English learning in three aspects: behavioral, cognitive and affective. In addition the differences in attitudes between the two groups of students were statistically significant. This proves that second language learners have positive attitudes towards learning the target language.

Yousif (2020) used a questionnaire to investigate the attitudes of 38 EFL students towards the impact of cell phone applications on understanding the culture of the target language. The findings indicated that cell phone applications provide students with a rich variety of cultural topics, therefore, EFL students have positive attitudes towards the impact of cell phone applications on understanding the culture of the target language and its cultural topics.

Dweik (2015) explored Jordanian students' and teachers' attitudes towards the inclusion of culture in learning a second language, and the questionnaire and interview data indicated that EFL students had positive attitudes towards learning British culture in the EFL classroom and also suggested the idea of combining Arab Islamic culture with British society and culture for better learning outcomes.

In general, second language learners generally have positive attitudes towards learning the target language, however, some objective negative factors can affect their motivation, so learners should adjust their mindset to adapt to various learning environments. In addition, learners also have positive attitudes toward the cultural background of the community in which they are learning the target language, which they believe enhances their learning effectiveness. Therefore, an in-depth study of the key factor of learners' attitudes is necessary to investigate whether attitudes are influenced by other individual factors and how different attitudes affect learning the target language.

2.2.2 Learners' Motivation

Motivation is an important factor influencing second language acquisition. In the 1950s, Gardner divided motivation into two major categories, fusion-type motivation and instrumental-type motivation, based on the differences in learners' purposes of learning. Convergent motivation refers to the learner's purpose to communicate with the purpose and members. The opposite of integrative motivation is instrumental motivation, where the learner learns the language for a purpose in order to obtain some practical benefit, such as going abroad for further study, getting a good job, etc. Both types of motivation play an important role in the process of second language acquisition.

Abdelaal (2015) examined whether Libyan high school students in Malaysia used instrumental or integrative motivation in learning English. The results of the interviews showed that Libyan female students had more integrative motivation than their male counterparts, which may be attributed to the social nature of girls. Both male and female students were more integratively motivated than instrumentally motivated, possibly because students at this age do not think about finding a job.

By examining the use of integrative and instrumental motivation among Canadian-born English-French bilingual students, Canadian-born multilingual students, and immigrant multilingual sixth grade immersion French students, Mady(2015) showed that multilingual immigrant groups have higher integrative and instrumental motivation, indicating that multilingual groups are more strongly motivated.

In summary, integrative and instrumental motivation are used differently in different individuals, and learners need to strengthen integrative motivation by developing an interest in learning the target language as well as instrumental motivation by focusing on the need for self-improvement and employment, etc. Only when the two types of motivation are combined with each other can we better promote second language acquisition.

2.3 Learner Strategy Factors

Learners' strategies in second language acquisition are among the influential factors in individual differences, and research on learners' strategies has revealed a growing body of research evidence indicating that learners' strategies are an important factor in language acquisition. Three areas of research on learner strategies are described here: metacognitive strategies, cognitive strategies, and social strategies.

Ahmed (2020) explored the awareness and use of cognitive and metacognitive reading strategies among Omani EFL (English as a Foreign Language) students studying different subjects. Statistical and descriptive analyses revealed that the most preferred category of reading strategies among Omani EFL learners was cognitive strategies, followed by support strategies and metacognitive strategies. The results of this study demonstrate insight into the strategy preferences of Omani EFL students.

Huang (2018) used O'Malley and Chamot's strategy taxonomy to examine the use of metacognitive strategies among high and low scorers on the EFL reading comprehension test. Four university EFL learners were selected based on their English reading ability, and although there was no significant difference in the number and type of metacognitive strategies used by the high and low scoring groups, the effectiveness and flexibility of strategy use in the test situation appeared to determine reading performance. The results of the study suggest that EFL learners with higher meta-cognitive awareness will have the strategy knowledge needed to learn successfully because of knowing how to learn.

Khoshalani (2015) studied social learning strategies in the context of EFL in Iranian non-government English language institutions. A questionnaire based on social learning strategies was used to collect data from more than 180 language learners of different levels from two different language institutes. The results of the study showed that "asking questions" was the most commonly used strategy and "working with others" was the least used type of strategy.

In second language learning, learners' responses to different strategies have different effects on second language acquisition, e.g., different learners have different preferences for strategy adoption, and the use of social strategies and the correct use of meta-cognitive and cognitive strategies are more effective in helping learners acquire a second language.

3. Conclusion

Through the study of three different aspects of individual differences affecting the process of second language acquisition, it can be concluded that: the general individual factors of learners play a decisive role in the process of second language acquisition; differences in age, gender and cognitive style are difficult to change and therefore show a variety of differences in the final learning outcomes of second language learners; learners' attitudes and motivation are based on general individual factors. Further research and exploration of learners' attitudes and motivation are based on general individual factors, which also play an important role in second language acquisition. Finally, due to the complexity of learners' strategies, it was found that only the rational use of social

strategies and the correct use of meta-cognitive and cognitive strategies would help learners acquire a second language more effectively.

However, learner factors affecting individual differences in second language acquisition are complex and unstable, and the characteristics and patterns of individual differences affecting learners, such as learners' personality and intellectual factors, should be further explored and studied extensively. Only by understanding the patterns of these factors and their interactions can we improve learners' second language acquisition ability and design the most appropriate teaching strategies for them.

Funding: This research received no external funding.

Conflicts of Interest: The authors declare no conflict of interest.

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