

## **Cognitive Factors in Second Language Acquisition**

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*Abstract: Cognitive factors play a crucial role in the success of second language acquisition. This paper discusses aptitude and cognitive style concern the cognitive abilities that underlie successful second language acquisition. They determine the learner's choice of learning strategies. Learners clearly differ enormously in their preferred approach to L2 learning. So we should pay attention to learner factors in the teaching process.*

*Keywords: cognitive factors, aptitude, cognitive styles*

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### **1. INTRODUCTION**

It is probably accurate to say that no two learners learn an L2 in exactly the same way. Some L2 learners are more successful in mastering second language skills than others. The most fundamental change in the area of L2 learning in recent years has been a shift from concern with the teacher, the textbook and the method to an interest in the learner and the acquisition process. The studies show that the explanation for this lies in not only contextual factors (external factors) but also individual learner differences in biological, affective cognitive factors (internal factors) and learning strategies. The purpose of this thesis is to explore how individual learner differences affect SLA, based on some relevant theories.

### **2. APTITUDE**

It is fairly common assumption that there is such a thing as a special 'talent', 'gift' or aptitude for L2 learning, which some learners possess to a greater extent than others and which is to a large extent responsible for individual differences in L2 learning success. Carroll (1981) defines aptitude as the capability which involves a special propensity for learning an L2.

Carroll (1981) argues that aptitude must be found to be distinct from general intelligence. Intelligence refers to a general academic or reasoning ability (Stem,1983). It may influence the acquisition of some skills (e.g. literacy skills) utilized in the formal study of an L2, but it is much less likely to influence the acquisition of oral fluency skills. In other words, intelligence may play a greater role in second language learning when material is taught with great emphasis on reasoning analytically about verbal material, but much less so in naturalistic SLA.

Genesee (1976) found that intelligence was strongly related to the development of academic L2 French language skills (reading, grammar, and vocabulary), but was in the main unrelated to ratings of oral productive skills. Ekstrand (1977) also found high-level correlation between intelligence as measured on tests of reading comprehension, dictation and free writing, but only lower correlation when proficiency was measured on tests of listening comprehension and free oral production.

Carroll (1981) also argues that aptitude must be seen as a stable factor, perhaps even innate. It is difficult to alter learners' aptitude. However, Stern (1983) argues that it is not clear whether positive aptitude characteristics could be developed by specific training or even simply by exposure to language learning-but it seems likely that they can be improved to some extent. To put it another way, aptitude is relatively stable.

The position that learners differ in the degree to which they possess a special talent for L2 learning has traditionally been associated with the names of Carroll and Pimsleur. Carroll and Sapon (1959) published the Modern Language Aptitude Test (MLAT), which proved to be a successful predictor of L2 learning success in colleges and universities. Pimsleur (1964) published another test of a similar predictive power, the Language Aptitude Battery (LAB).

Carroll and Sapon (1959) identified three major factors in language aptitude:

(1) Phonetic coding ability which consists of the ability to perceive and memorize new sounds. This ability is seen as related to the ability to spell and to handle sound-symbol relationship.

(2) Grammatical Sensitivity, which is the individuals' ability to demonstrate awareness of the syntactical patterning of sentences of a language.

(3) Inductive language learning ability which consists of the ability to notice and identify similarities and differences in both grammatical form and meaning.

Pimsleur (1966) distinguishes three components of language aptitude:

(1) Verbal intelligence, by which is meant both familiarities with words and the ability to reason analytically about verbal materials.

(2) Motivation.

(3) Auditory ability.

The view of language aptitude, reflected in these tests, is that aptitude is not a single entity, but a composite of different characteristics which come into play in second language learning (Stern, 1983: 369). Both the MLAT and the LAB have been widely used to test language aptitude.

The main aim of the research has been to establish to what extent it is possible to predict learning outcomes. The usual procedure is to obtain aptitude scores using one of the tests above, and proficiency scores consisting of the results of a language test. The two sets of scores are then statistically correlated (e.g. using the Person Product Moment Coefficient). In this way, it is possible to state the degree of variance in the proficiency scores that can be statistically accounted for by aptitude. A fairly strong relationship has been found between language aptitude and learning.

Krashen (1981) argues that aspects of aptitude only relate directly to conscious language learning. He distinguishes two aspects of SLA, acquisition and learning. Acquisition is the subconscious internalization of L2 knowledge that occurs through using the L2 naturally and spontaneously. Learning is the conscious study of an L2 that results in knowledge about the rules of the language. His hypothesis stresses that aptitude is only an important factor in the type of formal language study associated with classrooms.

Cummins' distinction (1983) between basic interpersonal communication skills ( BICS ) and cognitive academic language classroom language learning and the latter with naturalistic SLA.

Aptitude can be expected to influence the rate development and ultimate success in SLA, particularly where formal classroom is concerned. Aptitude may be age-related. It may develop along with the general ability for abstract thinking. Those learners with a gift for formal study are likely to learn more rapidly.

### **3. COGNITIVE STYLES**

Cognitive style has been defined as the manner in which people perceive, conceptualize, organize, and recall information (Witkin et al. 1971 ). Each person is considered to have a more or less self-consistent mode of cognitive functioning. An individual's cognitive style is viewed as relatively fixed and not readily changed. However, Little and Singleton (1990 ) argued that it is possible to help adult learners to explore their own preferences and to shape their learning approach to suit the requirement of a particular learning task. Among the cognitive styles identified so far, field independence / dependence has been the most extensively studied.

#### **3.1 Field Independence and Dependence**

A field independent ( FI ) person tends to perceive analytically. That is, he tends to perceive particular relevant items in a 'field' as discrete from the surrounding field as a whole, rather than embedded in the field. A field dependent (FD) person tends to perceive globally. That is, his perception tends to be dominated by the total field such that the parts embedded in the field are not easily perceived (Witkin et al. 1977: 6-7). The principal characteristics of field dependence and field independence are summarized in Table 1.

Table 1: Principal characteristics of a field dependent and a field independent cognitive style (based on Hawkey, 1982)

Field Dependence	Field Independence
1. Personal Orientation i.e. reliance on external frame of reference in processing information	1. Impersonal Orientation i.e. reliance on internal frame of reference in processing information
1. Holistic i.e. perceives a field as a whole; parts are fused with background	2. Analytic i.e. perceives a field in terms of its component parts; parts are distinguished from background
3. Dependent i.e. the self-view is derived from others	3. Independent i.e. sense of separate identity
4. Socially Sensitive	4. Not So Socially Aware i.e. less skilled in interpersonal /social relationships

The distinction does not give us a clear picture on which style is most facilitative of learning. It is assumed that whereas FI learners will perform some tasks effectively than FD learners, the opposite will be true for other tasks.

In SLA research, field independence / dependence is usually measured by one of the various forms of Embedded Figures Test ( EFT, see Witkin et al. 1971 ). This test asks the subject to locate a simple figure within a larger complex figure (the 'field' ) in which it is embedded. Those subjects who have little difficulty in locating the simple figure are labeled independent and those who have great difficulty field dependent. The test is hypothesized to reflect the way individuals perceive and organize the world.

There are a number of hypotheses about the role of field independence in SLA. One hypothesis is that FI learners do better in traditional classroom settings, while FD learners do better in nature settings. One possible explanation is that in nature settings the greater social skills of the FD learner will lead to more frequent contact with native speakers and so to more input. Whereas in traditional classroom settings the emphasis is on analytical activities. This hypothesis was supported by the results of the Toronto study of the 'good language correlate positively with L2 learning success in the classroom. The studies of field independence / dependence (Brown, 1977,1980 ) indicated that field dependence correlated quite highly with a test of language proficiency in the case of adult English-learners in the U.S. Another hypothesis is that FI learners gain from a form-focused deductive approach and FD learners from a meaning-focused, inductive approach. Abraham's study (1985 ) does support this hypothesis. However, Carter (1988 ) found that FI learners did better than FD learners in both a formal and a functional language course.

Brown (1987) suggested that some learners may have 'flexible' cognitive styles, combining

FI and FD modes of processing and adapting their approach to suit different learning tasks. However, the EFT can not be used to investigate the advantages of a flexible cognitive style, for the GEF is based on the assumption that the less one is FI, the more one is FD.

Learners clearly differ enormously in their preferred approach to L2 learning, but it is impossible to say which learning style works best. It is likely that it is learners who display flexibility who are most successful.

#### **4. CONCLUSION**

Language is a complex of cognitive theory. So a theory of second language acquisition, to be successful, must be able to describe how knowledge about language is stored in memory and how the process of second language acquisition ultimately results in automatic language comprehension on production. The learner is able to store and retrieve information depending on the degree to which the information processed, whereas people differ in the extent to which they possess a natural ability for learning a second language. Learners who score highly on language aptitude has focus on whether and to what extent language aptitude is related to success in second language learning.

So far as the second language learners, they must keep in mind that the cognitive factors function greatly in SLA. It is valuable to try to use the cognitive, affective strategies and make them effective during learning period, in order to increase greatly the quality and effectiveness of SLA.

Since we know how important role the cognitive factors play in language learning, it is significant to study cognitive factors in language teaching too. Teachers simply teach according to the curriculum and less pay attention to cognitive factors in classroom teaching. Teachers should adopt new pedagogical method for improving the quality of teaching.

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#### **REFERENCES**

- [1] Corder, *The Significance of Learners' Errors*. IRAL. 1967
- [2] Crookes, G. and Schmidt, R. '*Motivation: reopening the research agenda*' [Z]. University of Hawaii Working Papers in ESL, 1989.
- [3] Skehan, P. *Individual Differences in Second Language Learning* [J]. SSLA, 1991.
- [4] Krashen S. *Principles and Practice in Second Language Acquisition* [M]. London: Longman, 1985.
- [5] Ellis, R. *Second Language Acquisition*. Oxford: Oxford University Press. 1997.

- [6] Lu Wenpeng. *Anderson's Cognitive Theory and Learning Strategy Studies in Second Language Acquisition* [J] Journal of Lanzhou University, 2000.