

A Study on FD/I Effect on College Students' English Listening and Speaking Performance

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Abstract—this research report makes a concrete discussion on the roles of field dependence and independence in the development of college students' listening and speaking performance from the perspective of the influences of cognitive style on second language acquisition (SLA), which is one of the major applications of learning style in SLA. The results of this study shows that in second language learning, there are not any evidences so far to illustrate that field independence is superior to field dependence, or vice versa. The two kinds of cognitive style have their own advantages and disadvantages in different learning environments, for different learning materials and learning tasks.

Keywords—*cognitive style; field dependence/independence (FD/I); second language acquisition; empirical study*

I. INTRODUCTION

The concept of Field-Dependence/Independence (FD/I) is related to two other important concepts: Individual Differences (IDs) and Cognitive Styles. FD/FI are actually two kinds of cognitive styles while cognitive style is actually an aspect of individual differences. Therefore, to find out the role of Field-Dependence-Independence in student's listening and speaking performances in SLA is a study actually about the individual differences (IDs) in second language acquisition (SLA).

Generally speaking, IDs include the students' beliefs about language learning, affective states, language aptitude, cognitive styles, motivation, personality and other general factors (such as age and gender), all throw light on SLA despite the variety in the classifications and structures by different researchers. The study of IDs in SLA is to explore the differences of learners in the way they set about learning a second language and in which they actually succeed in acquiring the language. Ellis states that the study of IDs contains an important aspect of research in SLA and has contributed greatly to the development of SLA theory [1]. Four questions are often asked in the study of IDs in SLA: (1) In what ways do language learners differ from one another? (2) What effects do these differences have on the learning outcomes? (3) How do learner differences affect the process of language acquisition? (4) How do individual learner factors interact with the teacher's instruction in determining learning outcomes? [2] These factors of IDs are obviously

vital and have long been considered to be of great importance for SLA.

Cognitive style, according to Ellis, is "the manner in which people perceive, conceptualize, organize and recall information." Among the cognitive styles identified so far, field independence /dependence (FI/D) and their effects in SLA have been most extensively researched by applied linguists, educationalists and psychologists in three decades, but the results were widely different.

FD and FI is a pair of cognitive styles but opposite to one another in language learning due to different psychological processes of information-processing. American psychologist H.A Witkin was the first one who divided FD learners and FI learners. He developed the Group Embedded Figures Test (GEFT) to test which style a person belongs to. Generally speaking, Field Dependence (FD) style is along with the skill in interpersonal relations and the ability to be parts into the whole field; in contrast, Field Independence (FI) style is the ability to cover or restructure visual stimulation, termed "cognitive restructuring". FD individuals are easily influenced by situations and other people in making decisions. They are usually active in such activities as group work and capable of communicating, and they are easily to learn a language well by cooperation and communication. FI learners are not easily influenced and disturbed by others in making decisions. They are usually relatively quiet and restrained but display strong analytical and deductive abilities in the classroom.

Based on literature and empirical observation, this paper tries to analyze the role of cognitive style in SLA, especially in college English teaching, particularly the relationship between FD/I and the learners' performance and achievement in SLA. This paper also tries to throw some light on SLA through which we English teachers can create appropriate environments to meet the needs of different students, they can pay full attention to their specialties and can understand their own learning styles as well. Meanwhile, teachers can adopt different kinds of methodologies orientating students' different learning styles and give right guidance and create different environments to meet the needs of students to improve the quality of teaching.

It is hypothesized that field independence would be related to the acquisition of linguistic competence, or receptive competence, and that field dependence would be related to the acquisition of communicative competence, or productive competence. [3] The results of my survey will further prove this and provide more implications. Accordingly, both learners and teacher can have a deeper understanding of their performances and thus adjust their learning and teaching methods in order to achieve better results in SLA and TESOL (Teaching English to Speakers of Other Languages).

II. LITERATURE REVIEW

A. Some Theories Related to Cognitive Style

Cognitive style is a term used in cognitive psychology to describe the way individuals think, perceive and remember information. Cognitive style refers to the preferred way an individual processes information. Unlike individual differences in abilities which describe peak performance, styles describe a person's typical mode of thinking, memory or problem solving. Cognitive style is usually described as a personality dimension which influences attitudes, values, and social interaction.

The first theorist is Keef (1979) who divides learning styles into cognitive style, emotional style and Psychological style. Among the three elements, cognitive style is a essential factor of learning styles.

In the studies of cognitive style, Wiktin, an American Psychologist, first puts the concept of FD/I in 1962.

B. Some Different Definitions of Cognitive style

Cognitive styles are actually board personal styles, which show typical ways in which we process information. Some example of the cognitive styles: reflectiveness vs. impulsiveness; Cognitive complexity vs simplicity.

Goldstein and Blackman (1978) define cognitive style as a hypothetical construction that has been developed to explain the Process of mediation between stimuli and responses.

Tennant (1988:69) defines cognitive style as “individual” Characteristic and consistent approach to organizing and processing information”.

Shade (1982:226) claims that cognitive style interprets “individual preference in various cognitive, Perceptual, and Personal dimensions that influence differences in information processing.”

In a word, cognitive style is a characteristic mode that is observed in an individual’ s perceptual or intellectual activities: it constitutes stable, self-consistent forms of adaptation, and develops a relationship between cognitive and Personal affective spheres.

In the 1960s, Witkin introduced the term “cognitive style” to describe the concept that individuals consistently exhibit stylistic preferences for the ways in which they

organized stimuli and construct meanings for themselves out of their experiences. [4]

C. Cognitive Style in Second Language Acquisition

Each person is considered to have a more or less consistent mode of cognitive function. The dichotomy (a classification into two opposed parts or subclasses) which has received the greatest attention where SLA is concerned is that of FD/I.

Fillmore (1980) suggests there may be differences in the level of attention which learners from different backgrounds typically give to a task. The existing research does not show that cognitive style is a major factor in SLA which is concerned by success. There has been no research into the effects of cognitive style in the course of acquisition.

Many linguists have also made such attempts and many cognitive models of SLA have been put forward. Wu Qianlong suggests the following model and provides a general description of the cognitive processes based on SLA. [5]

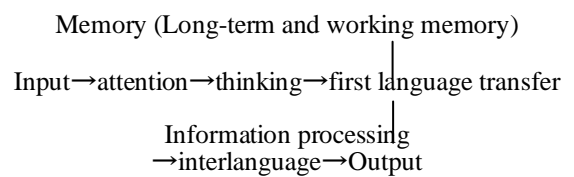


Fig. 1. A Cognitive Model of SLA

The second cognitive model of SLA was proposed by Fang Junming. [6]

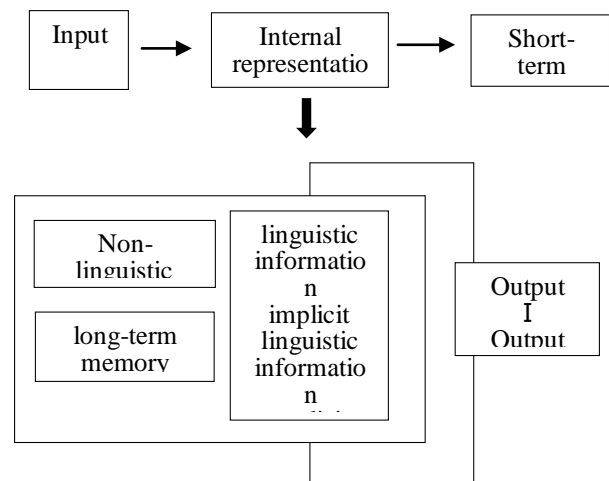


Fig. 2. Another Cognitive Model of SLA

Fang’s cognitive model of SLA provides two types of output distinguishes: Acquired competence and learnt competence; And two types of knowledge: Implicit linguistic knowledge (acquired competence) and explicit one (learnt competence).

D. Some Theories Related to FD/I

A number of cognitive styles have been identified and studied over the years. Field dependence/independence is probably the most well-known style.

Field dependence and field independence are two different cognitive styles. They could be considered as the core of cognitive styles. Field dependence/independence was the earliest studied area in the study of cognitive styles.

In general, Field dependence/independence represents two totally different tendencies when people deal with information. People who belong to the type of field dependence tend to rely on information provided by the outer world and gain their cognition (toward other things) in an overall aspect. In contrast, field-independent people usually depend on their inner knowledge and analyze problems all by themselves.

E. Field Dependence and Field Independence

Field Dependence (FD) and Field Independence (FI) is a pair of mutual opposite cognitive styles in language learning. They are called cognitive styles because they are the features in human beings' psychological process in information processing.

FD/I refers to whether people tend to rely on internal or external referents as they perceive and process information and as they interact with their environments, which was first put forward in 1962 by American psychologist, Witkin.

F. Characteristics of FD/I

The field dependent persons rely on some external information, tending to recognize object as a whole. However, the field independent people usually rely on their existed, internal knowledge framework, tending to analyze problems independently.

The principal characteristics of FD/I are summarized in "Table I".

TABLE I. CHARACTERISTICS OF FD/I

field dependence	field independence
1. <i>personal orientation</i> i.e. reliance on external frame of reference in processing information	1. <i>Impersonal orientation</i> i.e. reliance on internal frame of reference in processing information
2. <i>Holistic</i> i.e. perceives a field as a whole; parts are fused with background	2. <i>Analytic</i> i.e. perceives a field in terms of its component parts, parts are distinguished from background
3. <i>Dependent</i> i.e. the self-view is derived from others	3. <i>Independent</i> i.e. sense of separate identity
4. <i>Socially sensitive</i> i.e. greater skill in interpersonal/ social relationships	4. <i>Not so socially aware</i> i.e. less skilled in interpersonal/ social relationship

G. Formation of FD/I

The formation of cognitive style is affected by social environment and education. Witkin believes that social environment is a main factor of the formation of cognitive style. Jie (1990) argues that other researchers have probed into the effects of teaching styles on cognitive style from education's point of view.

At present, the most frequently used method adopted by FD/I researchers is the GEFT (Group Embedded Figures Test). In this measurement, FI individuals can easily to figure out the simple Pattern from a complex one by removing the disturbance of background factors so that they get high marks in this test. However, FD individuals have difficulty in finishing this task. On the other hand, it is easy to carry out such test and the results are more accurate.

Field dependence/independence has become more popular in current educational institutions to assess students on their higher-level thinking within a specific context. This type of achievement measurement is known as alternative or performance-based assessment. It contrasts the historically typical format of using multiple-choice, fact-based instruments.

Chapelle and Green (1992) propose their new interpretation of FD/I. They highlight three aspects of the construct including: reliance on international frames of reference, cognitive restructuring abilities, and interpersonal skills. They hope to make the concept FD/I more clear by separating it into different aspects.

According to Cognitive Control Theory, [7] field dependence/independence is not only a cognitive style but also a cognitive control. Cognitive controls are the psychoanalytic entities that regulate perception. Cognitive style defines learner traits, whereas cognitive controls "have the status of intervening variables that define principles by which motoric behavior, perception, memory and other basic quantitative forms of cognitive functioning are organized as an individual coordinate himself with his environment" [8] Factors Affecting FD/I

There are many factors affecting FD/I. Among which, age, gender, and personality affect FD/I most deeply.

H. Age

There appears to be some effect of age on field dependence/independence. Children are generally field dependent, but their field independence increases as they become adults. After that time, field independence gradually decreases throughout the remainder of life, with older people tending to be more field dependent than their younger times

I. Growing Environment

The early studies of child rearing shows that when there is strong emphasis on obedience to parental authority and external control of impulses, the child will likely become relatively field dependent.

J. Gender

Studies of children have not found any differences at all. However, in studies of adults when differences between sexes and field dependence/independence are found, males always tend to be field independence.

III. SURVEY ON THE EFFECT OF FD/L ON COLLEGE STUDENTS' COMPETENCE IN SLA

The grammatical cohesive devices are mainly consisting of four different types, namely: reference, substitution, ellipsis and conjunction.

In order to investigate the relationship between the students' cognitive style and the development of their competence in SLA, An English learning class of 60 students (54 sample's are effective) with middle school English foundation are chosen as the sample of this paper. These students had high school diplomas and try to get further English education in Beijing International University.

Firstly, through discussion, a Chinese questionnaire is designed to testify the subjects' personal learning style. The results of the investigation show that, among the 54 subjects, 43 are FD learners and 11 are FI learners. "Fig. 3"

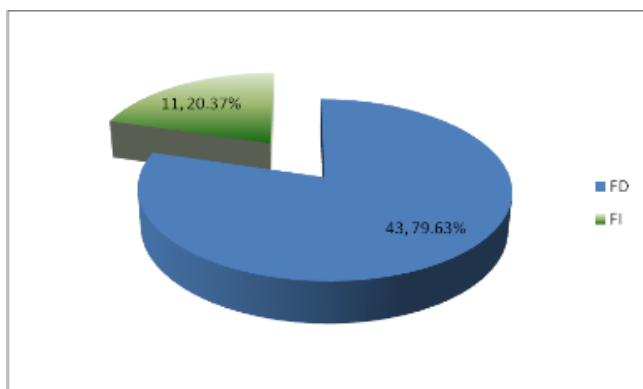


Fig. 3.

Secondly, listening and speaking tests are organized to see their performances of listening and speaking competence. Before the tests, a brief explanation has been made to let the students know the purpose of them of the test. During the test, every student focuses their attention on the test and all answer the questions carefully with a certain required time.

Thirdly, the papers were scored and analyzed the results which are listed below:

TABLE II. DESCRIPTIVE STATISTICS OF SPEAKING SCORE OF FD/I STUDENTS

	N	Minimum	Maximum	mean	Std. Deviation
Speaking	54	55	80	69.96	6.34
Speaking (FD)	43	60	80	70.60	5.60
Speaking (FI)	11	55	80	68.8	7.41

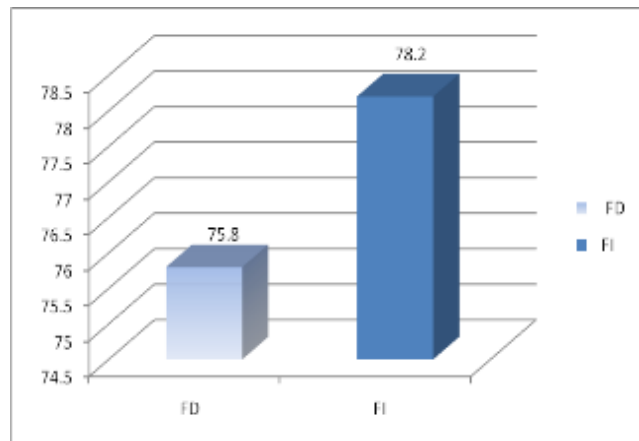


Fig. 4.

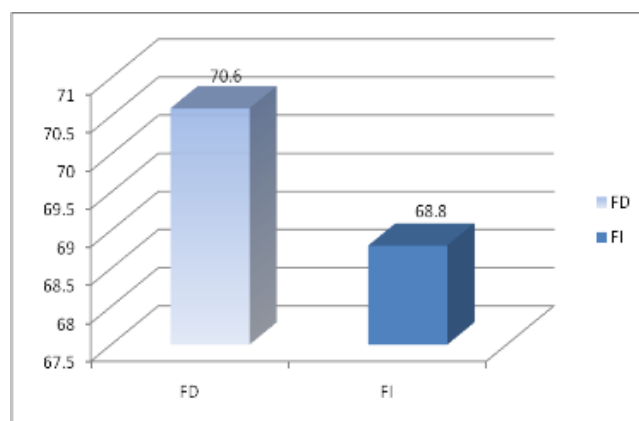


Fig. 5.

The result of "Fig. 4" shows that FI students are found to get 2.4 average scores higher than FD ones in listening examination. This suggests that FI students averagely learn listening better.

The result of "Fig. 5" shows that FD students are found to get 1.8 higher average score than FI ones in speaking examination. This suggests that the FD subjects have performed better in this test. That is to say, FD learners are better performers in the speaking test.

As we known, a language has two function: receptive and productive. Receptive aspects involve listening and reading competence. Productive use means of expressing oneself in speaking and writing, involving speaking and writing competence. Among the four skills, this paper choses listening and speaking to be tested by the subjects.

Listening is the process of attaching meanings to the spoken words. Underwood (1990) believes that although we may appear to be inactive while listening, we may actually engage in the activity of constructing a message in order to be an active listener. While hearing can be thought of as a passive condition, listening is always an active process.

People are different from one another in their abilities of understand the spoken word. Compared with field dependent students, this paper has found that, field independent students

like to train their listening ability in formal classroom. They understand the listening materials better than the field dependent students because they can get the key information more quickly and more independently.

Field dependence represents the tendency to perceive and stick to an existing, externally imposed framework. While field independence represents the tendency to restructure perceived information into a different framework. They are considered to have a more social orientation than field independent persons who seldom developed their social frameworks externally. Since they are more likely to make use of tendency to seek the external referents for processing and structuring information, they are good at learning materials with human content, and are more readily influenced by other people and opinions, and are affected by the approval or disapproval of authority figures.

The FI students, relying on internal referents, are likely to make goal-oriented assessments of the communicative context. We all know, regardless of the confusion around them, people tend to find what they want to know. Reid (2002) states that FI students prefer to block everything they see as irrelevant rather than to focus on their agenda. Assessing a communicative situation, and then, becomes a challenge of assessing only those elements essential for getting meaning or comprehending what language users want to learn. Compared with the FI students, the FD students would assess by taking the whole situation, thereby perceiving more of what is going on, but perhaps failing to see what they need to find. Their class notes would conclude a wide variety of points that interested them, as well as those the teacher indicated were crucial.

IV. CONCLUSION

A. Major Findings of the Study

The results of the survey show that, among the 54 students whose questionnaire are effective, 43 of them belong to the FD style while 11 are FI learners. By an analysis of the result of the survey, this paper has found that:

There are both FD and FI students in the sample class, but the numbers of FD learners greatly exceed that of the FI. This may be due to the growing background and educational environment in which the students are brought up. In China, most families are authoritative, according to Witkin, may lead to the FD style of the students. What's more, language learning belongs to the category of labor arts and in the learning process one has to communicate with others very often in order to practice this communication tool. So it is reasonable that most of the students we surveyed are FD learners while only a small proportion are FI learners in SLA.

FD and FI learners differ in their performance in listening and speaking. FD learners, on the whole, perform better in speaking test while FI learners are better than FD learners in listening tests. Since this paper picks up listening and speaking represent the receptive and productive aspect in learning process in SLA, such facts can be inferred that FD learners are better producers while FI learners are better receivers in SLA. This is in consistent with my hypothesis

that FD and FI style is good for the productive and receptive process in SLA. Since FD learners are more communicative, they are willing to have more practice in speaking, thus perform well in speaking tests. And FI learners are more focused on their study, so they can resist the distractions during listening exercises and test, so that achieve better scores than FD learners in listening tests.

FD and FI learners are equal learners in SLA, there are no evidences proving that one type is superior to the other, learning a foreign language requires learners to have both abilities.

B. Implications of the Study

The findings of this thesis suggest a number of implications.

Firstly, learners should be conscious of their cognitive style. Here we can define the awareness of FD/I as the thing which a person understands the teachers' instructional implications of specific characteristics of FD/I, which include its definition, measuring methods, function etc. It may be helpful to make the learners consciously realize the existence of learning styles and cognitive styles. And thus encourage learners to make good use of this point. Only when learners are aware of their cognitive style such as FD/I, can they know their problems in learning and make corresponding solution. For example, when a student knows he tends to be field independent by realizing that he prefers internal reference to external reference or he cannot easily work out the main idea of a text and doesn't like classroom speech activities that simulate real situations. he should change the tendency of his hard work.

Secondly, teachers should try to understand the learning styles of their students so that they can adopt the right teaching methods and materials which are suitable to students. It is impossible and unrealizable to satisfy all students and their requirements. But the students' initiatives can greatly be rising if the teachers have a certain understanding for their students and give them suitable guidance in learning. For example, the field dependent students may have advantages in the early stages of language learning because they have strong social abilities. With the increasing difficulties of learning and their natural shortcomings in their characters, they perhaps become inferior to the field independent students later. In this case, their learning results can be improved if the teacher gives them proper guidance at an appropriate time. More importantly, a teacher demonstrates awareness of cognitive style by means of being sensitive to individuals' different time requirements in deal with certain types of tasks. Typically, this may lead to a subtle readjustment in teaching strategy to reduce cognitive strain in a percentage of classroom participants.

Thirdly, test designers should pay attention to the difference of FD and FI learners. When they design a test paper, they should balance the question types so that both FD and FI learners can show their abilities. For example, in listening test, FD learner may do better in summary while FI

learners may do better in details, so both kinds of questions should be included in the test.

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