

Field-Independence

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conclusion, the difference between the two means should be statistically significant. This condition, however, using the statistical technique of t-test to compare the two means, was not met as the t-observed (0.73) was fairly below the t-critical (2.000). Thus, we are bound to sustain the null hypothesis.

The second research hypothesis stated as null is as follow: There is no significant difference between FI and FD subjects in bottom-up listening exercises. Again, comparing means (Table-3), one can see that FI subjects were better in bottom-up listening exercises. Yet, this superiority is not sufficient if this claim is to be generalized because the t-observed (1.88) is below the t-critical (2.000). Therefore, we are bound to sustain this second hypothesis, too.

Conclusion

It is hardly imaginable to think of a theory of language teaching without a theory of language learning. Such a theory of language learning which is developed under the rubrics of psychology of learning, tends to map out the major learner characteristics and their interplay in the process of second and foreign language learning. Among these characteristics, cognitive factors and their possible relevance to language learning have long been considered by both theorists and practitioners. Field-independence and field-dependence, as cognitive factors, have been exclusively and consistently investigated to validate their effects on second and foreign language learning. Along this trend, the

researcher tried to show how these cognitive characteristics (FI/FD) may influence listening activities in terms of top-down and bottom-up processing.

The results of this study can have useful implications in different aspects of language teaching. Although the results showed that there is not any difference between FI and FD learners in terms of top-down and bottom-up processing, this does not mean that syllabus designers, test constructors, and teachers should not pay equal attention to both of them. In this regard, the syllabus designer, who is concerned with the selection and gradation of the content, can take care to keep a balance between and include both top-down and bottom-up listening activities in the content of a course of instruction. Test constructors also can try to develop tests which contain both top-down and bottom-up activities so that the students are allowed to have the opportunity of improving their abilities in more efficient ways.

As noted early in the article, teachers of L2 need to learn to identify and understand their students' differences. To this reason, the results of this study can be fruitful for teachers as it indicates how knowledge of L2 is decoded in listening. In addition, the teachers are recommended to consider different cognitive styles when they incorporate listening activities in the classroom.

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measure of field-independence to 108 subjects. This test which was developed by Witkin, Oltman, Raskin, and Karp (1971) consists of 3 sections. The first section, including seven items is for practice and is two minutes long. The second and third sections have nine items each and are both ten minutes long. Therefore, the main part of the test contains 18 complex figures within which simple geometrical figures are embedded. The subjects are required to find these simple figures in the allocated time. On the basis this test two groups of subjects each including 40 students emerged, one group as FI subjects and the other as FD subjects.

In the second and last stage, the listening comprehension test, which included both top-down and bottom-up questions, was administered to the two groups of FI and FD subjects. The listening test included three sections: the first two of which (A and B) contained top-down questions and the third section (C) contained bottom-up questions. The results of this second stage, once investigated statistically, determine whether the research hypotheses are sustained or rejected.

Results and Discussion

The results of the first stage, the GEFT that divided the subjects into two groups of field-independents and field-dependents, are reported in Table-1.

Table -1
Results of the GEFT

Number(n)	Max. Score	Min.Score	Mean
108	15	1	6.72

The mean score (6.72) rounded up to 7, was regarded as the cut-off point so that those subjects who scored 7 or above 7 were classified as FI subjects and those whose scores were below 7 were grouped as FD subjects. Of course, the selection of this cut-off point, namely 7, was based on the earlier research by Abraham (1985). It should also be explained that the final number of the subjects in each group was 40, who were selected randomly, and the rest, heedless to their cognitive style were not selected.

The results of the second stage which are directly related to research hypotheses are represented in Table-2 and Table-3.

Table -2
Results of Top-Down Questions

Group	Max. Score	Min.Score	Mean	SD	t-observed
FI	8	1	4.88	2.03	0.73
FD	8	2	5.18	1.58	

P=0.05 n=80 df=78 t-critical=2.000

Table -3
Results of Bottom- Up Questions

Group	Max. Score	Min.Score	Mean	SD	t-observed
FI	18	10	14.18	2.85	1.88
FD	18	8	12.88	3.30	

p=0.05 n=80 df=78 t-critical=2.000

The first research hypothesis stated as a null one is as follow: There is no statistically significant difference between FI and FD subjects in top-down listening exercises.

On inspection of the fourth column of Table-2, one can see that the means of the two groups are different. The implication is that FD subjects, as it was envisaged, were more successful in top-down listening exercises. But in order to generalize this

two ways in which humans analyze and process language as part of the process of comprehension and learning. That is, the brain can approach and analyze language in two ways known as top-down and bottom-up. In a top-down processing style “the brain initiates processing with a general knowledge of the subject and proceeds to relate the information it already has to the new data it receives” (Madden & Nebes, 1980). In a bottom-up processing style “the brain begins with externally received stimuli and analyzes that information to arrive at its final interpretation” (Madden & Nebes, 1980).

Research Questions

Two research question were generated. First: Do FI or FD learners perform better on top-down listening comprehension exercises? Second: Do FI or FD learners perform better bottom-up listening comprehension exercises?

Hypotheses

The answers to the above research questions are given in the form of two hypotheses. First: Field-independent learners are more successful in bottom-up listening activities and less successful in top-down ones. Second: Field-dependent learners are more successful in top-down listening activities and less successful in bottom-up ones. These two hypotheses are then tested through the experiment and it is determined whether they are sustained or rejected.

Subjects

A total number of 108 students studying either TEFL or English literature at Islamic Azad University of Masjed-Soleiman took part

in the research project. Of course, the final analysis of the study was concerned with only 80 of these students 40 as FI and 40 as FD subjects. It should also be noted that such variables as age and sex were not controlled in the selection of the subjects. Therefore, the age of the students was not restricted to any particular range. Besides, both male and female students were allowed to participate in this study.

Design

Four variables were investigated in this study: field-independence/field-dependence (FI/FD) and top-down/bottom-up processing. Indeed, this project was an attempt to find the degree of relationship between FI/FD and top-down/bottom-up processing. It can be concluded, then, that the design of this study was semi-experimental. The schematic representation of the study was:

G1 X1 Y1

G2 X2 Y2

The above symbols stand for:

G1 → Field-independent subjects

G2 → Field-dependent subjects

X1 → Mean of top-down exercises of FI subjects

X2 → Mean of top-down exercises of FD subjects

Y1 → Mean of bottom-up exercises of FI subjects

Y2 → Mean of bottom-up exercises of FD subjects

Procedure

The study was carried out in two stages. In the first stage, the Group Embedded Figures Test (GEFT) was administered as a



independence/dependence and attempts to examine the relationship between this cognitive variable and the typical ways of processing information known as top-down and bottom-up.

In technical terms, field-independence and dependence (FI/FD) are known as cognitive styles. Cook (1991) defines Cognitive styles as "a technical, psychological distinction between typical ways of thinking" (p.87), or a practical way in which a learner tries to learn something. Cook (1991) further explains that "a difference in cognitive style might well make a difference to success in second language learning" (p.87). It might well happen that a person with a type of cognitive style performs better in a certain kind of activity or task and not in another.

An FI learner is characterized as being capable of "perceiving a particular, relevant item or factor in a field of distracting items" (Brown, 1994:160). That is to say, an FI learner can easily concentrate on small factors in a given task. On the contrary, an FD individual has "the tendency to be dependent on the total field such that the parts embedded within the field are not easily perceived, though that total field is perceived more clearly as a unified whole" (Brown, 1994: 160). As such, an FD learner is less successful in tasks where concentration on small items is required.

As it was mentioned earlier, this study seeks the relationship between field-independence/dependence and top-down/bottom-up processing. A contrast is usually made between

ABSTRACT

This paper presents the results of a study of the relationship between field-independence/dependence (FI/FD) and top-down/bottom-up processing in listening comprehension for a group of Iranian university students learning English. What was really looked for was to find, on the one hand, whether FI learners would do better on top-down or bottom-up listening exercises and, on the other hand, whether FD learners would perform better on top-down or bottom-up listening activities. The study consisted of two stages. First, the subjects were given Group Embedded Figures Test (GEFT) which divided them into two different groups of FI and FD learners. Second, both groups were asked to participate in a listening comprehension test, which included both top-down and bottom-up questions. The results derived from this stage were then statistically analyzed and, although there was a difference, it was concluded that both FI and FD learners perform equally well on both types of top-down and bottom-up exercises and there is no statistically significant difference between the two groups.

Key Words: Field-Independence/Dependence , Top-Down / Bottom-Up Processing, Bottom-Up/Top- Down Listening Exercises

Introduction

Research has shown that different learners experience degrees of success when learning a second language, due to their cognitive and personality differences (Carroll, 1990; Ehrman, 1995a, 1995b, 1990a, 1990b; Ehrman & Oxford, 1990, 1995; Galbraith & Gardner, 1988; Oxford, 1992; Skehan, 1989). Moreover, today teachers of second languages need to learn to identify and understand their students' significant individual differences in order to provide more effective instruction (Carrell et al., 1996). In fact, the recognition of individual differences as being effective in learning and teaching dates back to the time when cognitive psychology superseded Behavioristic psychology. During the time when the behavioristic psychology was strongly favored, it was believed that anyone could learn anything given the right external stimuli and reinforcement "(Chastain, 1988, p. 122) . As such, it was concluded that the external factors are the sole and crucial factors in learning. Stern (1983) also mentions that,

the behavioristic ideas of language learning emphasized learning through habit-formation which was brought about by imitation, reinforcement, and repetition of behavior. However, with the advent of cognitive psychology, a larger role was allotted to the learner. Scholars in the field of learning, hence language learning, came to realize that learners' cognitive, affective, biological, and also social differences account for degrees of success in learning and language learning.

Although at first sight, individual differences may seem futile to study, they can be classified under different groups and be investigated. Chastain (1988) gives a rather tentative classification of the various learner differences, putting them under four different headings: cognitive, affective, social, and biological variables. The present study is an investigation in cognitive variables affecting language learning. So far, quite a number of cognitive variables have been identified and their impact on language learning been investigated. This study is focused on field-



The Relationship between Field-Independence/Dependence and Top-Down/Bottom-Up Processing in Listening Comprehension Exercises for Iranian EFL University Students

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چکیده

آنچه در ادامه می خوانید تحقیقی است در زمینه تأثیر تفاوت های فردی بر مهارت شنیداری در یادگیری زبان دوم. یکی از ویژگی های فردی، «وابستگی میدانی» (Field-Dependence) و «عدم وابستگی میدانی» (Field-Independence) است. طبق تعاریف ارائه شده، افرادی که دارای ویژگی وابستگی میدانی هستند، کل را از جز بهتر تشخیص می دهند. این درحالی است که افراد دارای ویژگی عدم وابستگی میدانی، جز را بهتر از کل تشخیص می دهند. بنابراین در آن دسته از فعالیت ها و تمرینات یادگیری که توجه به جزئیات ضرورت دارد، افرادی که دارای خصوصیت عدم وابستگی میدانی هستند، موفق تر از افرادی هستند که وابستگی میدانی دارند.

از طرف دیگر، مغز انسان در پردازش اطلاعات ورودی معمولاً به دو روش عمل می کند: پردازش بالا به پائین و پردازش پائین به بالا. در پردازش پائین به بالا، مغز از جز به کل حرکت می کند و در پردازش بالا به پائین، جهت تحلیل اطلاعات از کل به جز است. با توجه به آنچه که بیان شد، این تحقیق به دنبال اثبات دو فرضیه زیر بوده است:

۱. افرادی که دارای ویژگی وابستگی میدانی هستند، در تمرینات درک شنیداری بالا-پائین، نسبت به افرادی با خصوصیت عدم وابستگی میدانی موفق تر هستند.

۲. افرادی که دارای ویژگی عدم وابستگی میدانی هستند، در تمرینات درک شنیداری پائین-بالا، نسبت به افرادی با ویژگی وابستگی میدانی موفق تر هستند.

نمید واژه ها: (عدم) وابستگی میدانی، پردازش به روش بالا-پائین یا پائین-بالا، تمرینات درک شنیداری بالا-پائین یا پائین-بالا