THE EFFECT OF TOP-DOWN AND BOTTOM-UP PROCESSING ON DEVELOPING EFL STUDENTS' LISTENING COMPREHENSION

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Chapter One: Introduction
1.1 Statement of the Problem and its Significance

Listening is a critical element in the competent language performance of the foreign language learners whether they are communicating at school, at work, or in the community (Van Duzer, 1997:1). According to Nancy and Bruce (1988:1) listening is the first language mode that children acquire. It provides a foundation for all aspects of language and cognitive development, and it plays a life-long role in the processing of learning and communication essential to productive participation in life.

Lynch and Mendelsohn (2002: 193) assure that traditionally listening was viewed as a passive process in which our ears just received information and the listener passively registered the message. Today listening is considered as an active process, and good listeners are just as active when listening as speakers are when speaking. They (ibid.) assert that listening is not a single process, but it is more accurate to conceive of it as a bundle of related processes- recognition of the sounds uttered by the speaker, perception of intonation patterns showing information focus, interpretation of the relevance of what is being said to the current topic and so on.

In their book on listening Anderson and Lynch (1988, as cited in Nunan, 1991: 81) contrast the bottom-up view of 'listener as tape recorder' with the top-down view of ' listener as model builder'. The first view suggests that the listener takes in and stores aural messages in much the same way as a tape recorder. The alternative to the listener as tape recorder view, that of listener as active model builder, accords a much more active role to listeners as they construct an interpretation of a message by utilizing both bottom-up and top-down knowledge. Lynch and Mendelsohn (2002: 197) add that "the main resources available to the listener can be grouped under bottom-up and top-down processes".

Although listening is now well recognized as a critical dimension in language learning, it still remains one of the least understood processes (Morley, 1991: 81). According to Morley (2001: 69), during the 1980s special attention to listening was incorporated into new instructional framework, i.e. functional language and communicative approaches. Throughout the 1990s, attention to listening in language instruction increased dramatically. Morley adds that "listening comprehension is now generally acknowledged as an important facet of language learning; much work remains to be done in both theory and practice" (ibid.) .

However, this is not the case in the Iraqi educational system. In spite of the great attention paid to developing listening comprehension (henceforth LC) in various parts of the world, no similar attention is focused on it in Iraq. LC is only taught marginally in the fourth and fifth secondary grades. Also, it is not taught at all at the college level for learners who major in EFL despite its paramount importance for them in understanding their lectures and improving their proficiency in English. This state of affairs has led to a clear weakness and inadequate standard of Iraqi EFL undergraduate students' LC. This is evident through the researchers' contact with college instructors and specialists in the

field, as well as through several studies that have been conducted in Iraq to assess the LC of EFL learners or the techniques of teaching LC (Al-Fatlawi, 1989; Al-Abdali, 2000; and Al-Alqamawi, 2005).

Though all of these studies were about LC, none of them investigated the effect of handling LC processes on developing EFL students. For this reason the researchers intend to conduct a study to develop the listening skill of EFL college students through experimenting the effect of bottom-up and top-down processing on developing the students' LC skill.

1.2 Aims

The present study aims at:

1- empirically examining the effectiveness of top-down processing (TDP) versus bottom-up processing (BUP) of LC.

2- developing EFL college students' skill in LC.

1.3 Hypotheses

1- To achieve the first aim, four null hypotheses are postulated:

a- There is no statistically significant difference between the mean scores of TDP and BUP students in the total achievement of LC test.

b- There is no statistically significant difference between the mean scores of TDP and BUP students in the TDP achievement of LC test.

c- There is no statistically significant difference between the mean scores of TDP and BUP students in the BUP achievement of LC test.

d- There is no statistically significant difference between the mean scores of TDP and BUP students in the interactive achievement of LC test.

2- To achieve the second aim, two null hypotheses are postulated:

a- There is no statistically significant difference between the mean scores of TDP students in the pre and post LC test.

b- There is no statistically significant difference between the mean scores of BUP students in the pre and post LC test.

1.4 Limits

The population of this study is restricted to the students of the second stage of the Department of English, College of Education, University of Babylon for the academic year 2004-2005.

1.5 Definition of Basic Terms

1.5.1 Listening Comprehension

Vandergrift (1999: 168) defines LC as "a complex active process in which the listener must discriminate between sounds, understand vocabulary and grammatical structure, interpret stress and intonation, retain what was gathered in all the above and interpret it with the immediate as well as the larger sociocultural context of the utterance".

1.5.2 Bottom-up Processing (BUP)

Vandergrift (2002: 2) states that listeners use BUP "when they use linguistic knowledge to understand the meaning of a message. They build meaning from lower level sounds to words to grammatical relationships to lexical meaning in order to arrive at the final message".

1.5.3 Top-down Processing (TDP)

TDP, in contrast with BUP, is holistic, "going from whole to part, and focused on interpretation of meaning rather than recognition of sounds, words and sentences. Listeners actively formulate hypotheses as to speaker's meaning, and confirm or modify them where necessary" (Lynch and Mendelsohn, 2002: 197).

Chapter Two: Theoretical Background

2.1 The Nature of LC

The four shills in which language functions in life are listening, speaking, reading, and writing. Strickland (1957:116) believes that listening is the first skill to operate in the life of the

normal individual and the one he uses more than any other. Vandergrift (2002:2) considers LC as "an invisible mental process".

LC is a highly integrative skill; it plays an important role in the process of language learning / acquisition. Rost (2002: 47) defines listening, in its broadest sense, as

> *a process of receiving what the speaker actually says (receptive orientation), constructing and representing meaning (constructive orientation), negotiating meaning with the speaker and responding (collaborative orientation), and creating meaning through involvement, imagination and empathy (transformative orientation).*

So listening is a complex, active process of interpretation in which listeners match what they hear with what they already know.

A research into listening over the past three decades has, above all, highlighted the fundamental intricacy of the processes involved (Lynch, 1998:18). In order to comprehend a spoken message, listeners may need to integrate information from a range of sources: phonetics, phonology, prosodic, lexis, syntax, semantics, and pragmatics (Osada, 2004:56). The fact that we achieve all this in real time as the message unfolds makes listening "complex, dynamic, and fragile" (Celce-Murcia, 1995:366).

As Brown (1987:11) observes, a significant number of published courses on LC and classroom practice in many schools in many countries continues to demonstrate that listening is still regarded as the least important skill in language teaching.

2.2 The Processes of LC

There are two distinct processes involved in LC, "top-down" processing, and "bottom-up" processing. According to Norris (1995:47), BUP refers to "decoding the sounds of a language into words, clauses, sentences, etc. and using one's knowledge of grammatical or syntactic rules to interpret meaning". TDP, on the

other hand, refers to "using background knowledge or previous knowledge of the situation, context, and topic to experiences to anticipate, predict, and infer meaning''. Vandergrift (2002: 2) refuses to consider LC as an either TDP or BUP believing that it is an interactive process where the listener uses both his previous knowledge and linguistic knowledge in his attempt to understand the message. The question of which of these processes the listener needs to use in a certain situation depends, according to Vandergrift (ibid.), on his knowledge of the language, familiarity with the topic or the purpose for listening.

From the abovementioned points of view, we can conclude that in addition to TDP and BUP there is a third process that goes alongside them which is interactive processing.

2.2.1 Bottom-Up Processing (BUP)

BUP refers to "the use of incoming data as a source of information about the meaning of a message'' (Richards, 1990:50). To process this incoming data, the listener depends on his lexical and grammatical competence in a language. To assign meaning for incoming words, they are referred to a 'mental dictionary' embedded in a person's lexical competence. Grammatical competence can be thought of as a set of strategies that are applied to the analysis of incoming data (ibid.).

Bottom-up strategies are text-based; the listener relies on the language in the message; that is, the combination of sounds, words, and grammar that creates meaning (Schwartz, 1998:6). In BUP "the listener focuses on individual words and phrases, and achieves understanding by stringing these detailed elements together to build up a whole" (Harmer, 2001:201).

2.2.2 Top-Down Processing (TDP)

TDP refers to "the use of background knowledge in understanding the meaning of a message" (Richards, 1990:51). Richards (ibid.) cites several forms of this background knowledge: previous

knowledge about a topic, situational or contextual knowledge, or knowledge stored in long term memory in the form of "schemata" and "scripts"; i.e. "plans about the overall structure of events and the relationship between them".

Van Duzer (1997:3) mentions that TDP refers to the process by which a message is interpreted by using schemata (background knowledge and global understanding). Lingzhu (2003:1) agrees with her by stating that in TDP learners utilize their prior knowledge to make predictions about the text. According to the schemata theory, "the process of comprehension is guided by the idea that input is overlaid by the pre-existing knowledge in an attempt to find a match" (ibid.).

In TDP the listener gets a general view of the listening passage by "absorbing the overall picture". This is facilitated when the listeners' schemata allow them to expect and predict appropriately what they are going to come across (Harmer, 2001:201). In a similar vein, Schwartz (1998:6) says:

> *Top-down strategies are listener-based; the listener taps into background knowledge of the topic, the situation or context, the type of the text, and the language. This background knowledge activates a set of expectations that help the listener to interpret what is heard and anticipate what will come next.*

Lingzhu (2003:2-4) suggests several activities to activate students' prior knowledge such as word association tasks, prior questioning, making list of possibilities, ideas or suggestions, and looking at pictures before listening.

2.2.3 Interactive Processing

There is an ongoing discussion in L2 research on the interaction between top-down processes and bottom-up processes. A number of studies illustrate the complexities of the listening process and many authors (such as Wolf and Bacon) agree that at some levels there is

a delicate interaction between TDP and BUP especially when there is a communication breakdown (Rubin, 1994:41).

Paran (1997:2) illustrates that recent views see comprehension as drawing upon both TDP and BUP, in what is known as interactive process. The claim is also that BUP influences TDP, and vice versa.

2.3 Factors Affecting the Listening Process

In fact, the process of LC is influenced by many factors that are tackled by a number of authors. Anderson and Lynch (1988:46) suggest that, while a large number of factors are involved, they fall into three principal categories related to: 1- the type of language, 2- the purpose of listening; and 3- the context in which the listening takes place.

On the other hand, Van Duzer (1997:1f) reports four factors thought by Brown and Yule (1983) to affect LC. These factors are:
1. The Listener
2. The Speaker
3. Content
4. Visual support

Brown (2001:252-4) explains the factors in more detail than other scholars. He mentions eight factors which affect LC adapted from several sources, such as Richards (1983), Ur (1984), and Dunke (1991). These factors include:
1. Clustering
2. Redundancy
3. Reduced Forms
4. Performance variables
5. Colloquial language
6. Rate of delivery
7. Stress, Rhythm, and Intonation
8. Interaction

2.4 Teaching LC

LC was neglected and not taken very seriously in the main stream of ELT for the last decades. The emphasis in teaching was mainly on speaking, reading, and writing the foreign language. Brown (1987:11) says that "as the idea of 'teaching the four skills' developed during the late 50s and 60s, LC as one of those began to be paid more attention".

Berne (1998: 170) points out that the following facts about L2 LC have emerged from literature:

1- Familiarity with passage content facilitates L2 LC.

2- Lower-proficiency L2 listeners attend to phonological or semantic cues, whereas higher-proficiency L2 listeners attend to semantic cues.

3-The effectiveness of different types of speech modifications or visual aids varies according to the degree of L2 listening proficiency.

4- The use of pre-listening activities, particularly those that provide short responses to the listening passage or allow listeners to preview the comprehension questions, facilitates L2 LC.

5- The use of authentic, as opposed to pedagogical, listening passages leads to greater improvement in L2 LC performance.

6-Training in the use of listening strategies facilitates L2 LC and L2 learners can and should be taught how to use listening strategies.

7- Due to the complex nature of LC, L2 listening practice should encompass a wide range of situations where listening is required as well as different types of listening passages, different modes of presentation (e.g. live, video tape, audio tape) and different types of activities and tasks.

Chapter Three: Procedures

3.1 The Experimental Design

The experimental design is "the blueprint of the procedures that enable the researcher to test hypotheses by reaching valid

conclusions about relationships between independent and dependent variables" (Best, 1981:68). In this study, the researchers utilized an adaptation of the pretest-posttest nonequivalent-groups design (ibid.:70) which can be depicted as follows:

First experimental group   T1E1……IV1……T2E1
Second experimental group T1E2…..IV2…….T2E2*

In this study, the first experimental group was taught LC by using TDP (henceforth TDP group), whereas the second experimental group was taught LC by using BUP (henceforth BUP group).

3.2 Population and Sample Selection Procedures

The population of the present study is the second year students, Department of English, College of Education, University of Babylon. This population consists of 130 students divided into two sections.

The researchers chose the whole population as a sample of this study in order to get better results in conducting their experiment. Twenty-four students were randomly chosen as a pilot sample. Section A, with fifty-three students, was randomly chosen to be the TDP group, and section B, with fifty-three students, was randomly chosen to be the BUP group. Two students were excluded because they did not attend the posttest administration. So, the total number of the main sample is 104 students: 52 students in each group.

3.3 Equivalence of the Study Subjects

In order to ensure better equivalence of the treatment groups, the researchers tried their best to control some of the variables that may affect the results of the experiment. These variables were: age, sex, parents' educational level, students' achievement in grammar,

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* T= test   E=Experiment   IV= independent variable

conversation, and comprehension in the previous year, students' scores on the IQ test, and students' scores on the pretest.

All the differences were tested at 0.05 level of significance using t-test for two independent samples or chi-square formula, and were found out to be insignificant.

3.3.1 Controlling Extraneous Factors Jeopardizing External and Internal Validity

In any experiment, the dependent variable may be affected by some extraneous variables other than the independent variable. These variables have to be held constant in order not to be confounded with the obtained results (Christensen, 1980:94 as cited in Al-Qaraghooly, 1996: 59).

The researchers determined the extraneous variables and tried to control them as far as possible in order to avoid confounding the results of the study .These factors include history, maturation, instrumentation, experimental mortality, selection bias, Hawthorne effect and testing.

3.4 Instructional Programme
3.4.1 The Instructional Material

The researchers tried their best to supply the students with a suitable, good, and authentic material. Since they did not have LC as textbook material, the researchers chose the instructional material from several authentic sources specially designed for LC; namely: Tactics for Listening by Jack C. Richards, 1997; How to Listen by Marian Geddes (BBC TV. & Radio), 1988; and Test your Listening by Tricia Aspinall, 2003.

One of the researchers taught the students two texts in each lecture. Since the experiment lasted six weeks, each group was taught twelve texts. Although most of the texts which were given to both groups were the same, the techniques used in presenting these texts and the tasks and questions assigned were different. In other words, the researcher manipulated each group differently. It is

noteworthy to say that various types of texts were chosen such as: sentences, phone messages, conversations, announcements, news headings, interviews, and passages.

3.4.1.1 TDP Group Material

The researcher taught this group the techniques related to the TDP in order to develop their LC. In all the lectures of the TDP group, the researcher adopted the following procedures. He discussed the content of the text with the students and brainstormed them to measure and sharpen their previous knowledge of it. Then he prepared the tape recorder, played it to see whether the voice was clear and to make sure that all the students hear it perfectly. The next step was distributing the answer sheets which contained pictures and various types of tasks. Finally he played the recorder asking the students to listen carefully for the first time and answer when he repeated the text for the second time.

3.4.1.2 BUP Group Material

This group was manipulated quite differently from the first experimental (TDP) group. In this group, and in compliance with the BUP techniques, the researcher did not discuss the material with the students before introducing each text (the way followed in TDP group). Instead, he gave them some instructions of how to listen and what to focus on when they listen in order to answer the questions properly.

The similarities between the lectures of the two groups were that:
1. the instructor was the same (the researcher himself);
2. most of the texts were the same ;
3. the preparation of the tape recorder was the same ;and
4. the place and the circumstances of the experiment were the same.

3.5 The Achievement Test

Since there is no ready–made test to be used for this study, the researchers constructed an achievement test to investigate the effect of TDP and BUP on developing EFL students' LC.

3.5.1 Construction of the Test

The researcher constructed the achievement test by selecting diverse items from several authentic materials (taken from the same sources used in the instructional programme) (see 3.4.1). The achievement test consists of 68 items distributed as follows: 28 TDP items, 28 BUP items, and 12 interactive processing items.

The test is divided into seven parts. The first part represents 6 short conversations about summer jobs. The skill involved here is listening for key words which is used as a technique of the interactive processing. The second part consists of five different talks in which the speakers are describing other people. The skill is distinguishing between positive and negative statements which is part of BUP.

The third part is divided into two sections. TDP is involved in this part .The skills used here are listening for preferences and making inferences. The fourth part consists of two sections as well containing six phone messages. The skills used here are distinguishing word stress and selecting details. They are part of BUP. The fifth part is about listening to peoples' predicaments. Interactive processing is utilized in this part. The skill used here is listening for attitudes.

The sixth part includes people talking about global issues. The skill used here is listening for time references which is a part of BUP. The seventh part is divided into two sections. The skills used here are making inferences (in the first section) and listening and deciding (in the second section). These skills are a part of TDP.

It is noteworthy to say that the achievement test was used before and after starting the instruction in order to measure the development of each group after conducting the instructional programme. Both recognition and production levels are used in this test.

3.5.2 Test Validity

According to Heaton (1975:153), the validity of the test is the extent to which it measures what it is supposed to measure and nothing else. Alderson et al. (1995:171-83) tend to adopt a certain classification for validity as internal validity, external validity and construct validity. In this study internal validity is involved since it consists of content validity and face validity which are considered the most important types of validity when constructing an achievement test.

Face validity is ascertained if the test items appear to be measuring what is intended to be measured (Ebel, 1972:87).

In order to ensure the face validity of the test, it was exposed to a jury* of specialists in TEFL methodology and linguistics who agreed on the suitability and validity of the test items and enriched the test with their remarks.

Brown (1973:125) says that "if the test items appear to an expert judge to represent the domain adequately, the test possesses content validity". Hence, it can be said that the test has a content validity for

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[*] The jury members, arranged according to their academic titles and then alphabetically, are :

1- Prof. Al-Jumaily, Abdul-Latif, Ph.D., College of Arts, University of Baghdad.
2-Prof. Al-Rawi, Sabah S., Ph.D., College of Languages, University of Baghdad
3-Prof. Hameed, Salih M., Ph.D., College of Education, University of Babylon
4-Asst. Prof. Al-Ameedi, Riyadh T., Ph.D., College of Education, University of Babylon.
5- Asst. Prof. Al-Dulaimi, Munthir M., Ph.D., College of Languages, University of Baghdad
6- Asst. Prof. Al-Jumaily, Abdul-Kareem, Ph.D., College of Education/Ibn Rushd, University of Baghdad.
7- Asst. Prof. Al-Marsoomi, Istiqlal H., Ph.D., College of Arts, Al-Mustansiriyah University.
8-Asst. Prof. Al-Nasiri, Nahida T., Ph.D., College of Basic Education, Al-Mustansiriyah University
9- Asst. Prof. Al-Rifa'i, Fatin Kh., Ph.D., College of Education/Ibn Rushd, University of Baghdad.
10- Asst. Prof. Darweesh, Abbas D., Ph.D., College of Education, University of Babylon.
11- Asst. Prof. Darwesh, Abdul-Jabbar A., Ph.D., College of Basic Education, Al-Mustansiriyah University
12- Asst. Prof. Hasoon, Hameed B., Ph.D., College of Basic Education, University of Babylon.
13- Asst. Prof. Sa'eed, Mu'ayad M., Ph.D., College of Education /Ibn Rushd, University of Baghdad
14- Asst. Prof. Al-Aqqam, Adil A., M.A.., College of Basic Education, University of Babylon.
15- Asst. Prof. Hejal, Abdul-Jaleel J., M.A., College of Basic Education, Al-Mustansiriyah University
16-Instructor Al-Dulaimy, Asim A., Ph.D., College of Basic Education, University of Babylon.

the following reasons. First, the researchers employed in the test a wide range of varieties of skills that sample the TDP and BUP skills and techniques involved in the instructional programme. Second, the researchers chose the test items from well-known authentic materials (see 3.4.1). Finally, the researchers discussed the content of the test with the jury members and made the possible modifications suggested by them.

3.5.3 Pilot Administration of the Test

On the 22nd of February, 2005 a pilot administration of the test was carried out. The test was experimentally tried out on a sample of 24 students selected equally from sections A and B.

It was found that the time needed to complete the whole test was 50 minutes, and that the instructions were clear and stated in an adequate way.

3.5.4   Item Analysis
3.5.4.1 Difficulty Level (DL)

After the application of the DL formula, it is found out that the DL of the items ranges from 0.21 to 0.79, i.e., the items difficulty is within the normal range.

3.5.4.2 Discriminatory Power (DP)

Concerning this study, the items DP ranges between 0.18 and 0.61. There are only three weak items in their discrimination. The researcher could not exclude them because these items were relevant to some aspects of the achievement to be measured by the test. In this respect Ebel (1972:395) assures that if the low discrimination is not due to technical weakness in the item or to an inappropriate difficulty, the test constructor should include them regardless of their low discriminatory power if he or she remains convinced that they do belong and are clearly relevant to some aspects of the achievement to be measured by the test.

3.5.5 Test Reliability

Reliability refers to the consistency of assessment scores. Two methods were used to estimate the test reliability in this study: Kuder Richardson 21 and Alpha Cronbach methods. As a result, reliability coefficients of 0.919 (by using Kuder Richardson formula 21) and 0.936 (by using alpha Cronbach method) respectively are obtained. This means that the test has an acceptable and adequate reliability since its coefficients are statistically significant.

3.5.6 Administration of the Pretest

After ensuring the validity and reliability of the test, the researchers administered it to the already assigned representative sample of the study that consisted of 104 students. That was on the 27th of February 2005, i.e. before the beginning of the experiment.

3.6 The Instruction

Instruction started on the 1st of March, 2005 and lasted seven weeks ending on the 20th of April, 2005. One of the researchers taught the two experimental groups in order to control the teacher variable in this experiment.

The lessons (lectures) were arranged to be on every Tuesday for both groups. The TDP group and BUP group were taught the same texts which were audible ones by using a tape recorder, but they had different techniques and tests for each.

The researcher gave the instructions before every lecture, prepared his tape-recorder and played it to make sure whether the voice is clear or not. Then he distributed the answer sheets which contained questions about the piece which the students were going to listen to. He played the recorder twice for each text.

3.7 Final Administration of the Test

The posttest was administered on the 20th of April, 2005. The researcher applied the posttest first on the TDP group and then on the BUP group. For both groups he gave the testees the instructions and the time they needed to finish the test was 50 minutes.

3.8 Scoring Scheme

For the purpose of objectivity and reliability, an accurate scoring scheme should be developed for the whole test. In this study, each item is marked either correct with one score or incorrect with zero score. If an item is left by the testee or if the answer is not clear it is considered wrong and gets zero. Since the test consists of 68 items, the highest mark that the testee may achieve is 68 and the lowest mark is zero.

3.9 Statistical Tools

The following statistical tools are used in the present study:

1- Chi square to equalize the subjects of the two groups in the variables of parents' education level and sex.

2- The t-test for two independent samples, to find out the significance of differences between the two groups in the dependent variable and in some equivalence variable.

3- The t-test for two dependent samples, to test the significance of difference between the pretest and posttest.

4- Alpha Cronbach formula, to estimate the reliability of the test.

5- Kuder Richardson formula KR21, to estimate the internal consistency of the test.

6- The Difficulty level of the items of the test.

7- The Discriminatory Power of the test.

Chapter Four: Results, Conclusions, Recommendations, and Suggestions

4.1 Results

4.1.1 Results Related to the First Aim

The first aim of this study is empirically examining the effectiveness of TDP versus BUP of LC. To fulfil this aim, four null hypotheses are posed. The researchers have used the t-test formula for two independent samples at 0.05 level of significance and 102

degrees of freedom. Table 1 below combines the results related to these hypotheses as follows.

4.1.1.1 The First Hypothesis

The difference between the mean scores of TDP and BUP students in the total achievement of LC test is statistically insignificant; i.e. both groups are equal in their total achievement. So it can be said that the first null hypothesis is accepted.

4.1.1.2 The Second Hypothesis

The difference between the mean scores of the TDP and BUP students in the TDP achievement of the LC test is statistically significant in favour of the TDP group; i.e. the TDP group is better than the BUP group in achieving the TDP items of the LC test. So, the null hypothesis is rejected and the alternate one is accepted.

4.1.1.3 The Third Hypothesis

The difference between the mean scores of the TDP and BUP students in the BUP achievement of the LC test is statistically significant for the advantage of the BUP group; i.e., the BUP group is better than the TDP group in achieving the BUP items in the LC test. So, it can be said that this null hypothesis is rejected and the alternate one is accepted.

4.1.1.4 The Fourth Hypothesis

The difference between the mean scores of the TDP and BUP students in the interactive achievement of the LC test is statistically insignificant, i.e., the two groups are equal in their interactive achievement in the LC test. It can be said that the fourth null hypothesis is accepted.

Table 1
The statistics of the results related to the first aim and its four
hypotheses

| Group | NO. | $\bar{X}$ | SD | DF | t-Value | | Level of significance |
					computed	table	
TDP	52	39.09	7.78	102	0.084	1.986	0.05
BUP	52	39.23	8.46				
TDP	52	17.84	4.52	102	3.65	1.986	0.05
BUP	52	14.75	4.12				
TDP	52	14.23	3.22	102	5.22	1.986	0.05
BUP	52	18.01	4.12				
TDP	52	6.98	2.23	102	1.291	1.986	0.05
BUP	52	6.44	1.99				

4.1.2 Results Related to the Second Aim

The second aim of this study is to develop EFL college students' skill in LC. To attain this aim, two null hypotheses are posed. The researchers have used the t-test for two dependent samples to gain the results at 0.05 level of significance and 51 degrees of freedom. Table 2 below combines the results related to these hypotheses as follows.

4.1.2.1 The First Hypothesis

The difference between the mean scores of the TDP students in the pre and post LC test is statistically significant. It can be said with confidence that a great development happened to the TDP

students in their achievement in the LC test. So this hypothesis is surely rejected and the alternate one is accepted.

4.1.2.2 The Second Hypothesis

The difference between the mean scores of the BUP students in the pre and post LC test is statistically significant. It can be said that there is a great development of the BUP students' achievement in the LC test; so the null hypothesis is rejected and the alternate one is accepted.

Table 2

The statistics of the results related to the second aim and its two hypotheses

Group	Test	NO.	$\overline{X}$	SD	DF	t-Value		Level of significance
						computed	table	
TDP	Pre test	52	27.12	5.77	51	14.72	2.009	0.05
	Post test	52	39.09	7.78				
BUP	Pre test	52	26.65	6.10	51	31.35	2.009	0.05
	Post test	52	39.23	8.46				

4.1.3 Interpretation and Discussion of the Results

It is found out that both of TDP and BUP have an equal influence on the EFL students' achievement of LC. It is also found out that the TDP group is more efficient than the BUP group in achieving the TDP items in the posttest. This result is considered a normal one because TDP students are trained during the instruction to answer such items. In the same respect, it is found out that the BUP group is more efficient in achieving the BUP items in the post

achievement test than the TDP group. This result is due to the intensive training on BUP they received during the experiment. It is also found out that both groups are equal in their interactive processing achievement. This result is considered a natural one because both of the two groups were not trained in interactive processing during the experiment.

Concerning the second aim it can be said that it is fulfilled because there is a considerable development in the students' LC achievement in both groups. This is evident in the great statistical significance in the difference between the achievement of both groups in the pre and post test.

The findings of the present study give empirical evidence added to the theoretical one supporting the importance of teaching LC as a separate skill for EFL college students. Moreover, it is shown that TDP and BUP are equally effective in helping students to acquire good LC skills. These favourable results can be attributed to the following reasons:

1- The intensive and ample training that the study subjects have received during the experiment has led to the distinct improvement in their LC performance.

2- Another factor is the authenticity and the variety of the instructional material prepared by the researchers. Employing various types of materials from authentic sources including phone messages, news headings, announcements, conversations, and passages has created a context conducive to learning.

3- Throughout the experiment, the researchers recognized a great interest on the part of the students in acquiring LC skills. This has been concluded through their punctual attendance of the lectures, their participation and their motivation to learn more.

4- Concerning the BUP group, the concentration on grammatical and lexical competence during the instructional programme has

helped the students to manipulate the incoming data in the auditory material they listen to in an adequate way.

5- As for the TDP group, the activation of the students' background knowledge prior to the presentation of materials has assisted them in building their own expectations and predictions of LC texts. This, in turn, results in better comprehension of these texts.

6- The similar standing of both TDP and BUP in developing learners' LC gives support to the view that advocates utilizing the two types of processing at the same time because, as Norris (1995:6) holds,

without an adequate grasp of how to decode a stream of sounds into segments of words, phrases, and sentences, it is impossible for students to bring into play such strategies as inferring, predicting, and using knowledge of the topic, speakers, context, etc. to understand a speaker's message.

4.2 Conclusions

In the light of the empirical evidence revealed in this study and in relation to the researchers' own observations during the experiment, the following conclusions are drawn:

1- Iraqi EFL college students are badly in need for instruction in LC.

2- TDP and BUP are equally effective in developing EFL college students' LC.

3- Providing undergraduate students with intensive and adequate training in TDP and BUP skills improves their comprehension of spoken material.

4- EFL college students benefit equally from systematic practice in TDP and BUP techniques and activities.

5- Incorporating both TDP and BUP interactively yields better results than handling each of them alone.

6- LC is a complex, active and interactive process in which both BUP and TDP operate and contribute to the ultimate aim of understanding auditory stimuli.

7-Providing undergraduate students with a variety of authentic auditory texts arouses their interest and motivates them to acquire the LC skill.

4.3 Recommendations

In the light of the results and conclusions arrived at in the present study, the researchers recommend the following:

1-LC should be considered an integral and vital part in teaching English as a foreign language.

2-Teaching LC as a separate skill in a separate academic course is the best way for developing the listening ability of EFL college students.

3- Since TDP and BUP have the same effect on the students' LC performance, it is better to incorporate them together rather than separating them.

4- If it is not possible to assign a separate academic course to LC, several LC texts need to be taught within the comprehension material.

5- College instructors and teachers of secondary schools should be involved in in-service training courses on LC processes, techniques, and subskills in order to update their information.

6- The authenticity of materials and the use of tape-recorders and audio visual aids should be emphasized in order to arouse students' interest.

4.4 Suggestions for Further Research

On the basis of the findings of this study, the following studies are suggested:

1- A similar study in other stages, such as intermediate or preparatory stages.

2- A study to investigate the effect of interactive processing on developing EFL students' LC.

3- A study to examine the effect of TDP and BUP on developing EFL students' reading comprehension.

4- A study which investigates the teachers' efficiency in acquiring TDP and BUP of LC.

5- A study to find out the effect of using video films on developing EFL students' LC.

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