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The Impact of Note-taking on Learners'

Listening Comprehension Skills

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Entitled

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be accepted in partial satisfaction for the requirements of the degree of

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Dedication

To my dear and beloved family

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Finally, I thank Almighty Lord for giving me more courage to face all the trials that I encounter every day of my life. Please continue to stay beside me.

TABLE OF CONTENTS

List of tables

Abstract

Research on note-taking reveals that note-taking is widely used in daily activities to store information, as well as it is often applied in the academic context. It involves a set of cognitive processes and is a combination of various techniques and strategies. In the academic context notes are basically taken during academic lectures and readings. However, little research is done on note-taking during listening activities and its effect on learners' listening comprehension skills.

This study presents an investigation into the effect of note-taking during listening activities on EEC (Experimental English Classes) students' listening comprehension skills and their attitudes towards taking notes during listening activities. The study initially assumed that note-taking during listening activities has no effect on EEC students' listening comprehension skills. In order to obtain data on the research, five instruments were used: 1) a pre-test, 2) class observations, 3) a post-test, 4) a closed-ended questionnaire with a space for follow up comments, and 5) a semi-structured interview. This study used a quantitative design as the main research methodology, and also employed a supplementary follow-up qualitative interview. Consequently, two types of data were obtained from these instruments: qualitative and quantitative. Quantitative data was analyzed through SPSS software package, via Mann-Whitney U Test and Wilcoxon Signed Ranks Tests, and qualitative data was first transcribed and then analyzed.

Twenty five non-native English-speaking EEC students participated in the study. Participants were split into two groups: control and experimental. The sample consisted of both male and female participants their age ranging from 11-16.

Results obtained from the analysis of the research data indicated that note-taking during listening activities indeed had an effect on EEC learners' listening comprehension skills. Moreover, as the analysis of the pre- and post-test results showed, this effect was positive as students benefited from taking notes during listening activities. In addition, analysis of the

interviews and questionnaires revealed that the use of note-taking technique during listening

activities helped to improve EEC students listening comprehension skills.

Chapter 1: Introduction

Similar to other three skills of language, listening plays an important role in the lives of people. We listen to many things every day: TV news, music, talks, etc. Nunan (2003) defines listening as a meaning based skill. The author believes that when we listen, it normally follows a purpose. We learn to listen from our childhood. Children listen and respond to language before they learn to talk. When learning to read, they still need to listen to gain knowledge and information to follow directions. In the classroom, students also have to listen attentively and carefully to lectures in order to understand and participate in classroom discussions.

In classroom context listening is often accompanied with note-taking. Students take notes from lectures and audio segments. Currently, the implementation of note-taking during listening activities is starting to be widely used in an Armenian setting. However, the educational instructions often lack sufficient training. Teachers do not always have training in teaching corresponding techniques and skills for effective note-taking. This study introduces several basic techniques for effective note-taking, sheds light upon its effectiveness on learners' listening comprehension skills and introduces learners' attitudes towards note-taking during listening activities.

1.1 Significance of the Study

The current study is significant for several reasons.

- It aims at finding out whether the implementation of note-taking during listening activities is effective for development of listening comprehension abilities of EEC (Experimental English Classes) students at the American University of Armenia (AUA).

- It aims at presenting any significance in the difference between the students' performance before and after the implementation of note-taking during listening activities through pre- and post-tests.

- It also aims at presenting the EEC students' attitudes towards note-taking during listening activities after the implementations of the treatment.

1.2 Research Questions

The research is guided by the following two research questions:

1. *What is the effect of note-taking during listening activities on EEC students' listening comprehension skills?*

2. *What are the students' attitudes towards note-taking during listening activities?*

1.3 The Structure of the Thesis

The thesis encompasses four more chapters:

Chapter 2 reviews the related literature on the theoretical background of note-taking and listening comprehension,

Chapter 3 describes the methodology used to conduct this research. It presents the participants of the study, research design, instrumentations and procedure of data collection,

Chapter 4 illustrates and analyses the quantitative and qualitative data collected in attempt to prove an answer to the research questions,

Chapter 5 summarizes the findings, specifies the answers of the research questions, points out the main limitations and implications of the study and provides suggestions for further research.

Chapter 2: Literature review

Introduction

The essential purpose of this thesis is to find a possible relationship between note-taking during listening activities and EEC students' listening comprehension skills. Approaches to these issues are many and vary. In order to shed light on them, the two research variables, i.e. *listening comprehension* and *note taking* are discussed, and the justification of the purpose of the current research is given through the review of related literature, after which two research questions are formulated, and the hypothesis is proposed. The following are steps which construct the chapter:

1.   some approaches by different authors to the term "listening" are provided

2.   a distinction is made between hearing and listening

3.   several characteristic features of listening comprehension are pointed out

4.   basic steps involved in the listening process from the perspective of different authors are described

5.   the listening process in bottom-up and top-down processes is described to show what challenges L2 learners may face in this respect

6.   a general overview of note-taking is given with several definitions and ideas expressed by scholars in the field

7.   basic differences of note-taking in L1 and L2 situations are discussed

8.   several characteristic features of note-taking discussing how notes are taken particularly in academic context are pointed out

9.   some approaches of how note-taking can be taught are introduced

10.   two major functions of note-taking are discussed

11.   notes are characterized as summarized products with different formats

12.   note-taking is discussed as a combination of cognitive processes

2.1 Listening comprehension

2.1.1 Defining listening: listening comprehension

The importance of listening as a tool for understanding and as a key factor in facilitating language learning was brought to attention in the early 70's, thus recognizing listening as an important component in the process of second language acquisition (Feyten, 1991). Nowadays, listening is believed to be a much more complex activity and serves as a cornerstone of language acquisition (Krashen, 1994). According to Malkawi (2010) language learning is dependent on listening as it provides the learners with a basis, i.e. aural input, due to which language acquisition takes place and with the help of which learners are enabled to interact in spoken communication. Devine (1982) believes that external ideas and information are combined and understood through listening processes. As listening comprehension is believed to be the first language learning process acquired by children, it serves as a basis for "all aspects of language and cognitive development", and also plays a great role in the development of the communication process (Malkawi, 2010).

Studies of listening in the field of applied linguistics propose various definitions to the concept of "listening". The following are several essential ones. Howatt and Dakin (1974), consider listening as the ability with which we can identify and understand what people say. Understanding the speaker's accent, pronunciation, grammar, and vocabulary simultaneously and comprehension of meaning are all involved in this process. Understanding the information input, processing that information, and giving evidence of the understanding are the basic components of listening comprehension (Londe, 2009). McErlain (1999) defines listening as the ability of receiving and decoding oral communication through processing a particular language sample. In this respect, Luke and Lynott (1999) define listening as a communication process which needs to be active in order to be successful. According to Ronald and Roskelly's (1985) definition of listening, the latter is an active process which, as well as writing and reading, requires skills of prediction, hypothesizing, checking, revising, and generalizing. Purdy (1997) further develops this statement defining listening as "the active and dynamic process of attending, perceiving, interpreting, remembering, and responding to the expressed (verbal and nonverbal) needs,

concerns, and information offered by other human beings" (p. 8). Dunkel (1986) suggests that listening should not be perceived as a receptive act as it simultaneously consists of multiple psychological and cognitive processes.

Judging from the definitions of listening comprehension mentioned above and the ones provided by other scholars, it can be concluded that listening as an active process involves the following four interrelated activities:

- *receiving aural stimuli* (Jones, 1956; Petrie, 1961/1962; Steil, Barker, & Watson, 1983; Wolvin & Coakley, 1988),

- *attending to the spoken words* (Barker, 1971; Petrie, 1961/1962; Underwood, 1989; Wolvin & Coakley, 1988),

- *attaching meaning to the aural symbols* (Nichols, 1974; O'Malley, Chamot, & Kupper, 1989; Spearritt, 1962; Wolvin & Coakley, 1988),

- *responding to oral communication* (Johnson, 1951; Purdy, 1997; Steil et al., 1983)

2.1.2 Listening vs. hearing

When speaking about listening and listening comprehension, several features distinguishing listening from hearing should be mentioned. These two concepts are quite different from one another and have their special characteristic features. In this section descriptions of these two concepts given by different scholars are provided.

Bone (1988) suggests that hearing is a natural process, while listening is connected with the capability of the learner. The author believes that hearing is the starting point of listening. Luke and Lynott (1999) agree with the idea of hearing being the beginning of listening. However, it should be noted that one can hear sounds or words and not be necessarily engaged in the listening process. In contrast to this, listening requires cooperation between hearing and listening which contributes to the successful transfer of the message to the mind (Luke & Lynott, 1999). Thus, hearing is not an intentional process, whereas listening is a voluntary and intended process. When listening, listeners try to understand the message being delivered and make

connections with their previously acquired and existing knowledge (Bone, 1988). Burton and Dimbley (1995) explain the difference between hearing and listening by describing hearing simply as a physical process that involves only ears. In contrast, listening is a combination of three processes: *physical* through hearing, *emotional* through feeling and *intellectual* through thoughts.

2.1.3 Characteristics of listening comprehension

Thanajaro (2000) states that listening comprehension once used to be characterized as a passive activity. However, nowadays many scholars consider this belief to be invalid as they find that listening is a receptive process which aims at getting meaning form a particular stream of sounds. Listening is not just a passive reception of the words heard. When listening, people seek for facts and feelings in the piece of discourse depending on how it was said, and in what context the message was delivered. Taking all this into consideration, scholars believe that listening comprehension is a complex skill related to problem solving. Thus, listening is more than hearing a particular utterance because it requires the simultaneous use of all types of knowledge, including newly acquired and previously learnt (Thanajaro, 2000). According to Thanajaro (2000), successful listening requires knowledge of several major components, such as *phonology, lexicon, syntax, semantics,* and *text structure.*

However, according to Thanajaro (2000), there are some other factors that greatly affect the listening comprehension process. They are as follows:

- **Socio-cultural competence**: listeners' degree of familiarity with the socio-cultural content of the message; knowledge of the listeners' social and cultural expectations,
- **Strategic competence**: learners' ability to work out strategies to understand the content of the spoken piece by guessing the meaning of unknown words,
- **Discourse competence**: learners' ability to use cohesive devices to link the meaning of separate sentences in order to understand the overall meaning of the message.

To sum up, listening is a complex process of understanding a message by finding meanings to words. When listening, one should rely not only on the message being delivered, but also on their previous knowledge and various factors mentioned above. A good listener should know how to remember and organize the message presented (Thanajaro, 2000). Judging from all this, it can be suggested that listening is a combination of various cognitive processes.

2.1.4 The listening process

The previous sections touched upon the matter of different processes that are included in listening. This section presents three main approaches to listening processes from the perspective of different authors.

According to Tubbs and Moss (1987) the following four steps are the basic and inseparable components of the listening process:

1. *hearing information*

2. *paying attention to the information*

3. *understanding the message*

4. *remembering the information*

Bone (1988) suggests the following steps, putting the stress on the sequence of their occurrence.

1. *hearing the message*

2. *interpreting the message*

3. *evaluating the message*

4. *responding to the message*

In the first stage the author points out the importance of listening both to verbal and non-verbal information. In the second stage the focus is on the careful interpretation of the message from the speaker to the listener. When evaluating the message, the listener forms an opinion which should be based on the whole information available. To avoid misunderstanding in this stage, the listener may ask questions if applicable. The final stage assumes that the result of

effective listening is giving correct responses to related questions either verbally or non-verbally (Bone, 1988).

Finally, Guirdham (1995) claims that listening is a process including the steps described below:

1. *receiving:* receiving, getting, acquiring information

2. *selecting*: listening selectively

3. *organizing*: identifying, registering and analyzing information

4. *interpreting*: relating the received or chosen information to past experiences or future expectations

By taking a close look at the sequence of steps suggested by all three scholars, it is clear that some of them overlap, while others differ greatly. For instance, according to Buirdbam (1995), "*interpreting*" is the last of the four steps; whereas Bone (1988) claims that it is the second step of the listening process. In addition to these differences, there is also an overlap in the distribution of the steps among these scholars. All three authors consider hearing/receiving information as the first of the four steps of the listening process.

2.1.5 Listening strategies

This section provides an insight into two main strategies involved in the listening comprehension process: bottom-up and top-down. According to Buck (1994), listening takes place through these two processing models of comprehension. Several studies suggest that listening comprehension occurs starting from the lowest level of processing and continuing with a higher level of processing, while others disagree with the above mentioned theory and claim the opposite, i.e. listening comprehension starts with a higher level and then moves to the lower level of processing (Jeon, 2007). In other words, the first group of studies advocates the bottom-up approach to listening comprehension, while the second group supports the top-down processing. Nunan (1991) believes that in terms of language processing both of the above mentioned strategies are equally important for learners. On the one hand, bottom-up processing

strategies have individual central components (phonemes, graphemes, individual words, etc.) of written and spoken discourse the proper comprehension of which contributes to the understanding of the message. Thus, first of all, the learners try to understand a particular message by deciphering a number of sounds to form the words involved in the message. After this they combine these words into phrases, which make up sentences. These sentences are components of a larger text, the meaning of which is then comprehended by the listeners through steps taken. It is worth mentioning that supra-segmental phonemes like stress, rhythm and intonation also greatly contribute to the analysis of meaning derivation (Duzer, 1997). Richards (1990) agrees that bottom-up listening helps the listener to identify and understand the message of the utterance by using phonological, lexical and grammatical signals.

On the other hand, top-down processing strategies concentrate on larger units of the text (the writer's or speaker's purpose, topic of the message, the overall structure of the text, etc.) (Nunan, 1994). In this way the listener focuses all the attention on a concrete part of the discourse and establishes a cause and effect relationships, anticipates some possible outcomes, infers the topic of discourse or the sequence between events, etc. (Richards 1990). In top-down processing, the role of the listener is to understand the meaning of the message as intended by the speaker. To be successful, listeners may use their schemata or structures obtained from past experience and present in the mind (Nunan, 1998). Thus, the top-down approach focuses on the importance of background knowledge and the ability of the listeners to make inferences from the information they hear (Kusumarasdyati, 2004).

As Rixon (1986) states, language teachers often give their preference to top-down processing rather than to bottom-up. The reason they favor the former more is that they believe that the focus of listening comprehension should not be on the recognition of separate linguistic units. This belief may seem sensible in that the learners must be trained to get the gist of the message more effectively, i.e. through top-down processing. However, when giving preference to one of the above mentioned strategies it is central to remember that not all learners have the

same abilities and pay special attention to the difference between the abilities of native speakers and foreign language learners (Rixon, 1986).

2.2 Note-taking

2.2.1General overview

Note-taking is common in various situations that occur in everyday life, such as making purchases, plans, and future steps, studying, preparing talks, reading materials, etc. (Piolat et al., 2005). Boch and Piolat (2005) believe that note-taking not only helps students to learn, but it also teaches them how to write. Very often note-taking is characterized as a group of techniques, such as shortening words or substitution of words with symbols aiming at getting an immediate transcription of the information provided. By storing the information in their minds, learners use it for later actions (Boch and Piolat, 2005). Piolat et al. (2005) characterize note-taking as a process of making the information coming from the source material precise. This is done simultaneously to listening, studying, or observing. People take notes for different reasons, but however different the intentions of the note-takers are, the basic nature of note-taking is to store information coming from various sources. In other words, note-taking provides note-takers with consistent external memory which helps them in their everyday and educational life, as well as in their career (Piolat et al., 2005).

It is important to understand that note-taking is not a simple activity like recording information thought, heard or noticed. Van Dijk & Kintsch (1983) believe that note-taking is based on comprehension, while Alamargot & Chanquoy (2001) find that it is a kind of written output similar to original composition. In the note-taking process, note-takers, much like readers, have a task to understand the message, and much like learners, they are to be able to save the external information in their long-term memory by putting it in written form. Piolat et al. (2005) mention the importance of note-taking in different contexts. Usually, notes are not only taken in everyday life situations, but also in academic contexts. This includes taking notes from academic lectures, written documents and audio materials. Taking notes in these contexts in general has an

essential role as it facilitates two main functions: 1. *understanding the incoming information* and 2. *storing the information in written form for later use* (Boyle & Weishaar, 2001). According to Kiewra (1984), note-taking plays an advantageous role in that it contributes to comprehension and facilitates proper use of the newly learnt information later.

Generally, in all these contexts note-takers are under time pressure. When making notes, note-takers generally face a task to carefully select and convert the information understood in such a way that it differs from the primary source. The notes do not have to be in the form of a linear text. Note-takers usually make use of abbreviations, paraphrasing and other devices (Piolat, 2001). In the process of taking notes from written materials (articles, books) note-takers aim at saving that particular piece of information to be able to use it later. Taking notes from a lecture is far more complex than extracting information from a document when reading. Thus, when taking notes from a lecture or during a conference, note-takers have to manage to hear the information, understand and remember it, omit less significant pieces and write down the useful points at the same time controlling speed variation between hearing and recording of the message. According to Barnett et al. (1981), note-taking while listening to the message helps students to memorize new information simultaneously with the comprehension process and facilitates having the message recorded so that it can used after the information receiving process is over. According to Titsworth (2001) during taking notes from lectures learners have to concentrate on a number of signals they get from the lecturer: fluency, prosody changes, notes on the board, etc. In contrast, when taking notes during reading a variety of typographic and linguistic marks such as headings, titles, connectives, etc., facilitate the selection process of the information (Sanchez, Lorch, & Lorch, 2011). Consequently, when taking notes from reading, note-takers are involved in fewer cognitive processes than when taking notes from lectures or audio materials (Piolat et al., 2005). Note-taking from a lecture or audio segments provides learners with less time to comprehend and thus, it involves more cognitive processes. The choice

of note-taking methods depends on individual note-takers: they either adopt existing methods or invent their own. (Piolat, 2001).

According to Piolat et al. (2005), a number of studies on the success of exams demonstrated by learners have shown that note-taking greatly contributes to the learning process. Students learn to memorize information better, work selectively, analyze and use newly learnt information with the already existing background knowledge, etc. Scholars believe that note-takers learn not only during the revision of their notes but also when taking them. Williams & Eggert (2002) find that note-taking also leads to memorizing, especially when the process requires thorough understanding of the message.

2.2.2. L1 vs. L2 note-taking

Note-taking greatly varies from L1 to L2 situations. According to Piolat (2004, 2007), in first language context, note-takers are confronted with the task of understanding language, demonstrating success in the activities, and taking down carefully chosen information simultaneously. For this purpose, learners need to have particular strategies developed to be able to comprehend or transcribe external information differently from the primary source (Piolat, 2006). In other words, this process requires several operations and particular note-taking procedures taking place at the conceptual level where note-takers need to select only the most important ideas of the lectures and reading materials in the academic context or external message in everyday life situations (Barbier, Roussey, Piolat, & Olive 2006).

As Barbier et al. (2006) state, in second language situations, note-takers face various difficulties, two of them being of major importance. The first difficulty they may face in the note-taking process is connected with poor linguistic comprehension skills. In this case, when listening to any information, note-takers usually spend much time on trying to comprehend the information heard, identify the basic points and make connections between their previous and newly obtained knowledge. This may be the reason why learners are not as fluent in second language listening comprehension as in first language situations. The second major problem

note-takers may face in second language context is the restriction of the meta-cognitive control of note-taking. This happens when note-takers fail to evaluate the reliability of their notes with respect to former knowledge and competence already acquired in first language. For instance, when taking notes in second language, learners do not use procedures or tools, such as abbreviations, icons, which are very common in a native language note-taking environment. Second language note-takers do not usually demonstrate a variety of techniques; consequently, they often adopt first language methods to transcribe the needed information. These two basic difficulties are caused by very low qualitative and quantitative performance of second language note-takers (Barbier, Roussey, Piolat, & Olive 2006).

2.2.3 How are notes taken?

Taking notes in everyday situations greatly differs from taking notes in an academic context. According to Boch and Piolat (2005), students' average speed of writing is about 0.3 to 0.4 words/second, while a lecturer, for example, speaks at a rate of about 2 to 3 words/second. It is impossible to write down everything uttered by the lecturer or heard in the audio segment if note-takers don't master extraordinary note-taking skills or until the information is provided to the learners at dictation speed. Consequently, learners have to either develop their own note-taking methods or adopt existing or well-known ones to be able to keep up with the pace with which the information is being received (Boch and Piolat, 2005). Boch (1999), as well as Branca-Rosoff and Doggen (2003) point out the following indicators eliciting note-taking:

- *writing on the board*
- *a title of a section or the listing of information*
- *definitions, catch phrases*
- *macro textual indicaors*

Writing on the board can serve as a very strong indicator. This is why careful choice of what should be written on the board is important as pieces of information written by the teacher on the board are very likely to be involved in learners' notes.

Macro textual indicators such as organizing the lecture (*firstly/secondly, first question/second question, etc.*) are often written down on the board and often take their place in learners' notes. However, in contrast to the mentioned facilitating indicators, there also exist others that hinder the note-taking process. Thus, note-takers can be discouraged when sequences fail to contribute to the organization of the coming information, when the information is delivered fast and in a higher vocal register or when there are hesitations in speaking (Branca-Rosoff and Doggen, 2003). It is worth mentioning that if teachers want a particular piece of information to be taken down by the learners, it is advisable to draw the learners' attention directly to it verbally rather than wait for them to understand the importance of the information (Boch and Piolat, 2005).

2.2.4 How can note-taking be taught?

Note-taking is believed to be a complex skill. That is why in order to be fluent in this skill learners need to master at least three sub-skills: 1. *comprehension through note-taking*, 2. *producing notes*, 3. *the conscious management of the activity as a whole* (Stahl, King & Henk, 1991). They are discussed below.

1. *Comprehension through note-taking*: According to Boch & Piolat (2005), at school level, comprehension is basically taught with the help of summary production. Production of a summary is itself a complex combination of several functions (sorting, selection, combination of the information perceived). Having a good command of these skills, learners can easily take notes (Boch & Piolat, 2005).

2. *Producing notes:* Analysis of corresponding corpora has shown that, in contrast to summary production, when taking notes, students don't follow the principles they usually consider when producing a text. In other words, they don't follow the rules of syntax, spelling and the layout of the information on the page is quite different. Notes are often taken via tables, mind maps, or just represent a combination of key words (Boch & Piolat, 2005).

3. *The conscious management of the activity as a whole:* Note-taking is a combination of intricate cognitive operations, and it requires utmost effort from note-takers to keep in control what they are doing and how they are doing it. Their meta-cognitive knowledge is used to succeed in it (Rémond, 2003). To facilitate the development of meta-cognitive knowledge the teacher may ask the learners to fill in questionnaires from time to time addressing issues connected with their note-taking. In addition to this, some micro skills can be practiced in class (Boch & Piolat, 2005). They are as follows:

- *Raising awareness of the subsequent use of the notes*

- *Structuring note-taking*

- *Introduction to reformulation*

- *Introduction to selecting information*

2.2.5. Functions of note-taking

Note-taking during listening activities serves two fundamental purposes: it aids students' understanding of discussed points and it serves to preserve the listened information in the form of notes, for later use. Note-taking being a complex process includes a variety of functions (Hale, & Courtney, 1991). Di Vesta & Gray (1972) differentiate between two functions that facilitate note-taking: (1) *the encoding function* and (2) *the external storage function*. According to Hale, & Courtney (1991), encoding ensures that information has been properly understood and stored into memory through taking notes. It includes having the learners pay attention to the organization of the talk, making comparisons between the newly obtained and prior knowledge, etc. Hartley and Davies (1978) believe that the encoding function helps to activate the listener's attention, and contributes to getting individually formed and meaningful patterns via coding, integrating, synthesizing, and transforming the perceived material.

According to Hale, & Courtney (1991), external storage contributes to the process of reviewing the information obtained by notes for future testing processes (Hale, & Courtney, 1991). Other proponents of the external storage function claim its importance in that it provides

the listener with storage of information in the form of notes which can be revised any time and used in future (Dunkel, 1988).

The two functions mentioned above bring about two hypotheses: (1) *the encoding hypothesis* and (2) *the external storage hypothesis*. According to Carrier (1983), the encoding hypothesis divides the audience into two parts: *note-takers* and *listeners*. In contrast to note-takers, the listeners only listen to the information and do not take notes. While note-takers follow the material not to miss any important piece of information, or paraphrase and put down the newly acquired material comparing that with the older one, listeners busy themselves with every kind of activity except writing down the input.

What the external storage hypothesis states is that the essential value of note-taking is obtained during later review of the notes. According to this hypothesis, during note-taking the audience is concentrated on writing down the information word by word and recording as much information as possible. However, during the review of the notes, note-takers compare the newly attained information with the stored one and clarify some points to use the information later (Carrier, 1983).

The hypotheses mentioned above are different but they both show the importance of note-taking in listening comprehension. As Howe (1974) states, note-taking helps the learners be more careful and attentive towards the information that is being delivered. Peper and Mayer (1978) believe that note-taking requires more effort than simply listening: it involves deeper levels of activities and understanding.

2.2.6 Different formats of notes

The idea of note-taking is often associated with a short time period. The need to take notes in this condition led to the invention of stenography. However, nowadays note-takers often create their own methods of note-taking (Piolat et al., 2005).

According to Piolat et al. (2005), when talking about techniques of note-taking in general, it should be noted that it affects three levels of language. Firstly, *abbreviation procedures* are an

inseparable part of note-taking which greatly affect spelling. Note-takers often use techniques like end truncation (writing down the first part of the word) and suffix construction (e.g. "*recog^{ed}*" instead of "*recognized*") (Lindberg-Risch & Kiewra, 1990). It should also be mentioned that the choice and use of this or that note-taking technique varies from one note-taker to another. Furthermore, the same technique can be used differently by various users (e.g. *the same word can be shortened in many different ways by different people*). However, there are techniques that are common in two or more languages due to the similar structures of the languages. Thus, the technique of suffix construction may be used by a note-taker in both French and English, as these two languages are similar with some language structures. In contrast, in the case of such languages as Japanese and French, most of the techniques are not interchangeable as these languages are very different in their structures. As a result, students have to learn other techniques or create their own ones (Piolat et al., 2005).

The second effect note-taking techniques have on language occurs when *syntax is changed as a result of shortening statements*. When taking notes, especially being in time constraints, students adopt substitutive techniques using mathematical, iconic, Greek-alphabetic and other symbols. This helps them to increase the speed of note-taking (Barbier et al., 2003).

The third change that takes place when using note-taking techniques concerns *physical formatting* of the notes. In general contexts writing has a linear format. In contrast, when taking notes, students do not usually follow this format and note-taking takes a non-linear format (Piolat et al., 2005). However, according to Slotte & Lonka (2001), very often notes can look like a polished draft or a linear text. The format of the notes depends on the setting and the context in which they are taken (Piolat et al., 2005).

2.2.7 Note-taking and cognitive processes

As mentioned above, note-taking represents a process of recording information from different sources. In other words, this is a kind of external memory which helps to demonstrate various kinds of activities (learning, thinking, creating, etc.). Taking notes is a rather complex

process including a number of techniques and strategies only a small number of which make note-taking effective. However, the process of note-taking becomes more complex when talking about the cognitive processes constituting it (Piolat et al., 2005).

While linguists generally concentrate on the product of note-taking, cognitive psychology goes deeper and investigates the mental processes underlying note-taking. Cognitive psychologists find it critical to point out that the note-taking process is more than copying information (Piolat et al., 2005). Scholars in the field such as Van Dijk & Kintsch (1983) believed that first of all, note-taking involves comprehension. According to Alamargot & Chanquoy (2001), it secondly implies written production which resembles writing a composition. For a note-taker it is essential to understand the incoming information which can either be remembered or taken down in the form of notes. When taking notes, note-takers work selectively, choosing the information and later recording it in a way that differs from the original material. The note-taking process includes paraphrases of sentences, usage of abbreviations and symbols, and, in contrast to composition writing, it is done in quite a different form, generally not in the form of linear text (Piolat, 2001). Research on note-taking shows that techniques and strategies used while taking notes serve as tools for effective learning and knowledge acquisition. It should be mentioned, however, that before they are able to take notes effectively, note-takers must learn how to take notes correctly and how to overcome difficulties during this process (Piolat et al., 2005). Investigation on the effect of note-taking strategies on learning has concentrated on two basic issues: quality of the selection of the information and its organization (Williams & Eggert, 2002). Studies on these issues indicate that learners benefit from non-linear note-taking strategies more than from linear way of learning information. Thus, it can be inferred that information is better remembered with the non-linear strategy (Slotte & Lonka, 2000).

Piolat et al. (2005) define notes as "short condensations of a source material that are generated by writing them down while simultaneously listening, studying, or observing" (p.

292). The basic function of the notes is to group information from different sources that is important and needs remembering.

The majority of studies on note-taking focus on the importance of note-taking on transferring information into the long-term memory. However, the role working memory has on note-taking is seldom discussed (Piolat et al., 2005). The concept of working memory (WM) was first introduced by Baddeley and Hitch (1974) who defined it as a framework where a number of complex cognitive processes take place and temporary information is stored. The scholars suggest that working memory represents a system responsible for conscious processing of senses and memories. According to Baddeley (2000), working memory plays a great role in storing and manipulating the information no matter if the note-taker is a beginner or an experienced student. Working memory is inseparable from comprehension and writing, and these two activities are involved in note-taking (Levy & Ransdell, 2002). Piolat et al. (2005) state, that very often, note-takers have to struggle with the limited opportunities of the working memory. In such cases they have two strategies as a choice:

- *reduction of the activity to comprehension* (noting the less possible when getting the information)
- *reduction of the activity to transcription* (noting the content received without processing in order to record as much information as possible)

Independent of the strategies used while note-taking, the context in which notes are taken, and the nature of the information that is recorded, note-taking always involves cognitive effort as it deals with selection of information, comprehension and production (Piolat et al., 2005).

Scholars find that note-taking contributes to the higher-level thinking of the learners and helps them answer questions following note-taking. According to Peper and Mayer (1986), students taking notes are more successful in critical thinking exercises and knowledge transfer exercise than those who do not take notes. It is worth mentioning that notes are not simply

records of incoming information. Instead, they are represented in the forms of diagrams, symbols and a number of mechanisms are used to take effective notes (Peper and Mayer, 1986).

According to Einstein et al. (1985), every individual has mental structures where knowledge is stored. When one learns new information, it is added to a mental model that is already present in the mind. However, if the information is very new, a new model is created and the information is added to it rather than to the previously existing ones. This depends on how the information is provided to the learners and the previous knowledge the learner has on the information. Research in the field has shown that note-taking also affects the creation of these models. Taking notes helps the mind to pay attention, develop ideas and organize the coming information (Einstein et al., 1985).

The above overview of the literature on listening comprehension and note-taking aimed at providing an insight into the characteristics of these concepts as well as seeking for a relationship between them. Based on its findings, this paper aims at finding the possible effect of note-taking on listening comprehension abilities of EEC (Experimental English Classes) students and their attitudes towards note-taking during listening activities through the following questions:

1. *What is the effect of note-taking during listening activities on EEC students' listening comprehension skills?*

2. *What are the EEC students' attitudes towards note-taking during listening activities?*

As the current review of the literature doesn't provide any data on how note-taking influences listening comprehension abilities of the learners, the following null hypothesis is proposed:

Note-taking during listening activities has no effect on EEC learners' listening comprehensions skills.

Chapter 3: Methodology

Introduction

The purpose of this study is to investigate whether or not note-taking during listening activities has any effect on EEC (Experimental English Classes) intermediate level students' listening comprehension skills. This chapter consists of three sections introducing the setting and participants, instruments of data collection, procedures and the analysis of the data.

The sample of the study consisted of 25 students with 13 students in the control and 12 students in the experimental group. The study lasted for 10 weeks with classes meeting twice a week.

3.1 Restatement of the Research Questions

The research questions of the study were as follows:

- What is the effect of note-taking during listening activities on EEC students' listening comprehension skills?

- What are the EEC students' attitudes towards note-taking during listening activities?

The hypothesis of the following study was:

Note-taking during listening activities has no effect on EEC learners' listening comprehensions skills.

3.2 Setting and participants

The participants of this study comprised 25 pre-information 5 level students taking Experimental English Classes (EEC) in the Department of English Programs at the American University of Armenia. The EEC courses are 10-week language courses aimed at developing the learners' language skills. The classes were held twice a week and lasted one hour. The sample of the study included males and females, their age ranging from 11-16. The students were placed into the corresponding level (Pre-information 5 A&B) based on the placement test, which may imply that they had the same proficiency level. For the purposes of the study the participants were split into two groups – control and experimental. Learners involved in the experimental

group were taught note-taking skills and were asked to take notes during each listening activity. In contrast, the control group was not exposed to note-taking. The listening tasks were immediately followed by post-listening activities. It is worth mentioning that the sample included both students continuing their studies in EEC and newly enrolled students. The choice of participants follows a basic purpose: conducting the research with learners who hadn't been previously exposed to note-taking. This might result in getting more reliable outcomes from the experiment.

3.3 Materials

The textbook used for the classes in this research is "Language Leader-Intermediate" by Cotton D., Falvey D. and Kent S. (2008), published by Pearson, Longman. Inc. Language Leader is a five level communicative language program for teenagers and young adults. Language Leader-Intermediate is intended for young learners having pre-intermediate level of proficiency. The textbook has the following components: student's book with CD-ROM, workbook with audio CD, teachers' book with test master CD-ROM, and class CDs. It contains 12 units each of which focuses on a particular topic. The first 3 units (*Personality, Travel, and Work*) were covered during the current research time period.

Besides the textbook, additional materials were also used. They included audio segments directly connected to the topic of the unit. They were taken from YouTube. These additional materials were used only in the experimental group as a part of treatment.

3.4 Instruments

In order to obtain data about the effect note-taking may have on students' listening comprehension skills, five instruments were used: 1) *a pre-test* (see Appendix 1, a), that determined listening comprehension abilities of both groups and note-taking abilities of the experimental group in particular, 2) *class observations*, during which the experimental group received the treatment (taking notes during listening activities), while the control group did not, 3) *a post-test* (see Appendix 1, b), which aimed at finding the difference in listening

comprehension skills between the groups after the treatment was received by the participants of the experimental group, 4) *a closed-ended questionnaire* (see Appendix 2, a), with a space for follow up comments and 5) *a semi-structured interview* (see Appendix 3, a) which was conducted at the end of the course. Both the questionnaire and the interview were conducted in the experimental group only. Both of these instruments aimed at finding out the attitudes of the participants of the experimental group towards note-taking.

3.4.1 Pre-test

The aim of the pre-test was to identify the starting level of listening comprehension of the students in the control and experimental groups. A pre-test assessing listening comprehension of both groups was designed based on materials covered during the previous level in EEC (Communication 12) and was given to the learners on the first day of classes (see Appendix 1, a). The duration of the test was 10 minutes, and it was scored10 points. It included three listening tasks. The purpose of the first task was to have the students listen to a dialogue followed by four basic questions about what had been discussed in the conversation. This task was scored 3 points. The second task was a "True or False". It consisted of seven statements taken from the audio segment, and required indicating whether they were true or false. This task was scored 3.5 points. Finally, the last assignment of the pre-test was a sentence completion task. It included 5 sentences with some missing words. The test-takers were to listen to the audio segment and simultaneously fill in the missing words in the sentences. This task was scored 3.5 points. The purpose of the pre-test, as well as the experiment, was explained to the learners of both groups. Both the teacher and the observer were present in the classroom and gave directions to the students during the pre-tests in both groups.

3.4.2 Observations

Observations took place during the 10-week course period. The experimental group was observed once a week. Meetings were held with the teacher of the control group to be aware of the process of learning in the control group. The researcher did not teach the groups; rather she

regularly observed the listening part of the classes taught by the course teacher in the experimental group. However, some activities required detailed explanation and guidance, so from time to time the observer conducted the listening parts of some lessons. Listening materials were found and activities were designed by the researcher and handed to the teacher to use during the lessons. All activities were vetted by the thesis advisor, and only after getting approval were they used during the classes. The researcher was in regular contact with the course teacher of the experimental group to obtain information on the particular days listening activities would be conducted. The listening materials were 2-3 short audio segments on the topics corresponding to the themes of the textbook. Listening activities lasted about 25-30 minutes a day. After listening to each audio segment, a listening comprehension activity was distributed to the learners. The activity types were *information transfer, gap filling, multiple choice, comprehension check* and *true or false* activities and were familiar to the learners.

The observations aimed at providing the experimental group with the treatment, i.e. introducing the techniques of note-taking to the learners and having them take notes during the listening activities. This was part of the lessons and corresponding explanations were provided by the teacher and later practiced by the learners. Notes taken while listening to the audio segments were later used by the learners to fulfill post-listening tasks. In contrast, the control group did not receive any treatment and was solely assigned the listening activities followed by post-listening exercises provided in the textbook.

3.4.3 Post-test

The purpose of the post-test was to check both control and experimental groups on their achievement in listening comprehension during the 10-week-period. It was designed based on the listening content and activity types covered during the classes (see Appendix 1, b). The post-test consisted of three listening tasks and lasted 10 minutes. The total score for the test was 10 points. The first task consisted of five questions. The students were to listen to the audio segments and answer questions. This task was scored 3 points. The second task was a "True or

False" task consisting of ten statements mentioned in the audio segments. The task was scored 3 points. The last task of the post-test was a sentence completion assignment. It consisted of eight sentences with some missing words. The students were to listen to the audio segments and simultaneously fill in the missing words. The students were scored 4 points for this task. The post-tests were administered on the last day of classes. The results of both groups were analyzed and compared by SPSS program.

3.4.4 Questionnaire

At the end of the 10-week-language course the participants of the experimental group were provided with a closed-ended attitudinal questionnaire with a space provided for further remarks and comments on the statements discussed in the questionnaire. The students were requested to fill in the questionnaire and return it to the teacher on the last day of classes. The questionnaire consisted of 10 closed-ended statements concerning the attitudes of the learners towards note-taking during listening activities (see Appendix 2, a). The participants of the questionnaire were asked to indicate the degree to which they agreed or disagreed with 10 different statements. Response options were coded into 4 categories: (1) strongly disagree; (2) disagree; (3) agree; (4) strongly agree. This procedure was held in order to obtain quantitative data. The questionnaire was conducted in Armenian so that the interviewees could express their ideas more easily in their native language.

3.4.5 Interview

Ten volunteer learners from the experimental group were interviewed on the topic of note-taking, some possible advantages and disadvantages of note-taking, etc. Four questions were addressed to the learners and they were asked to reflect on them and express their ideas on the topic in general (see Appendix 3, a). The interviewees were recorded. The interview was conducted by the researcher. The students were interviewed one by one.

As the interview was semi-structured, information was obtained not only on the particular questions included in the interview, but additional comments were also taken into consideration.

The interview was conducted right after the questionnaire handouts were handed in. The interview was conducted in Armenian, so that the learners could freely communicate with the interviewer and express their ideas without any difficulty.

3.5 Data Collection Procedures

In order to answer the first question of the study, the experimental method design was implemented. Two groups (experimental and control) had the classes on the same days, with the same amount of time. The classes lasted one hour per session, twice a week for ten weeks. The researcher was not teaching the groups, rather, she was an observer.

The students of both groups were placed according to the placement test results they took for the EEC classes. However, before starting the course, the pre-test was administered in both groups.

Below in-depth description of the data collection procedures is provided.

First, a pre-test based on the listening materials covered during the previous level of the studies was designed and distributed to the participants of both control and experimental groups. The aim of the pre-test was to find out the overall language proficiency of the learners in each group and compare the results.

Second, observations of the experimental classes were conducted during the 10-week instruction period. Listening materials included in the textbook were used to test the listening comprehension of the students in both groups. However, the listening procedures in these two groups were held differently. The experimental group was asked to listen to different additional audio segments and simultaneously take notes. After this, they were given post-listening activities during which they were asked to use their notes to complete the tasks. In contrast, the control group was not asked to take notes during listening activities included in the textbook. Thus, during the post-listening activities the learners of the control group had to fulfill the task relying on their memory and proper comprehension of the material heard.

Third, at the end of the 10-week course, a post-test designed on the listening activity types covered during the course was given to the learners of both groups. This test aimed at finding out the difference between the results of the post-test of both groups.

Fourth, on the last day of the classes, a closed-ended questionnaire was distributed to the experimental groups only. Questions concerning the process of note-taking during listening activities and the learners' experiences connected with it were addressed to the students. The questionnaire was distributed by the researcher and the learners were asked to return them back as soon as they finished filling them in.

Fifth, ten volunteer learners from the experimental group were interviewed right after the completion of the questionnaire concerning note-taking. The learners were interviewed one by one, in Armenian. The interview was held by the researcher, and the students were recorded.

3.6 Data analysis

The data for the present study was both quantitative, from the questionnaire, pre-test and the post-test and qualitative, from the interview and the observations. To obtain quantitative data first a pre-test was given to both experimental and control groups on the first day of the classes. Second, on the last day of the classes a post-test was administered in both groups, and third, a questionnaire was administered in the experimental group after which, based on the learners' responses, the data was transferred into percentages. The results of the pre- and post-tests were correspondingly analyzed and compared via SPSS software package.

In order to obtain qualitative data, an interview was conducted with ten volunteer students from the experimental group, after which it was first transcribed, then analyzed and finally discussed according to the common themes. The data obtained from the observations helped to inquire issues that excited the learners of the experimental group. Later, these issues were addressed to via interview and questionnaire.

This investigation, which included the learners' questionnaires and interviews, as well as the pre and post-tests, provided rich data to address the research questions.

27

Chapter 4: Results and discussions

The current study was carried out to investigate two issues: first, whether note-taking during listening activities has any effect on learners' listening comprehension skills or not, and second, what are the learners' attitudes towards note-taking during listening activities. For the current study, both quantitative and qualitative data were collected via pre and post achievement tests, questionnaire and interview with students, and observations. This chapter presents the results and discussions of the data analyzed both quantitatively and qualitatively.

4.1 Analysis of the Quantitative Data

The quantitative data of the current study included pre and post achievement tests and attitudinal questionnaire for the students of both experimental and control groups. To compare scores obtained from the pre- and post-tests, Mann-Whitney U Test and Wilcoxon Signed Ranks Test were used. The results of the students' attitudinal questionnaire were analyzed through frequency analysis.

4.1.1 Pre- and Post-test Analysis

The results obtained from the pre- and post-tests of the experimental and control groups shed light upon the influence of note-taking during listening activities on the listening comprehension skills of the experimental group and the effect of its absence on the control group. Both pre- and post-test scores were analyzed via SPSS software package. Two types of comparisons were made with the help of the data obtained from the pre- and post-tests. Because the sample sizes were small, Mann-Whitney U Test was applied for the comparison between groups, and Wilcoxon Signed Ranks Test was applied for within group comparison to establish if there were significant differences between and within groups of participants at the alpha level of 0.05.

In order to get insight into the differences in the results of the pre-tests of the experimental and control groups, Mann-Whitney U Test was used. Table 1 presents the results of the mean ranks of the pre-test results for both control and experimental groups. As the

analysis revealed, the mean rank for the pre-test results of the control group (16.31) was higher than the mean rank of the experimental group (9.42) (see Table 1).

Table 1. Mann-Whitney U Test: pre-test ranks
Ranks

	group	N	Mean Rank
pretest	control	13	16.31
	experimental	12	9.42
	Total	25	

This means that in the pre-test the control group performed better and the students of this group got higher scores than those of the experimental group. However, a quite different situation is observed in the post-test results. Again, with the help of Mann-Whitney U Test the post-test results were analyzed and the mean rank results for both experimental and control groups were acquired. In contrast to the analysis of the pre-test scores, the analysis results of the post-test scores showed that the population of the experimental group performed significantly better. Thus, the mean rank for the experimental group test results was 19.12, while the control group had a mean rank of 7.35 (see Table 2).

Table 2. Mann-Whitney U Test: post-test ranks
Ranks

	group	N	Mean Rank
posttest	control	13	7.35
	experimental	12	19.12
	Total	25	

A conclusion can be derived from the results shown above that the experimental group did fairly better than the control group on the post-test.

In order to find out whether the differences between the pre-test results, and post-test results in both groups are significant, the current data was analyzed via SPSS software package

and through Mann-Whitney U Test. Below is the table demonstrating the significance of both

test results.

Table 3. Mann-Whitney U Test: Significance of pre and post test results

Test Statistics

	pretest	posttest
Mann-Whitney U	35.000	4.500
Wilcoxon W	113.000	95.500
Z	-2.343	-4.045
Asymp. Sig. (2-tailed)	.019	.000
Exact Sig. [2*(1-tailed Sig.)]	.019	.000

When comparing the pre-test results, P=0.019 (P is the exact significance), which is less

than the selected significance 0.05 (alpha level). This means that there is a significant difference

between the results of the pre-tests of both groups in favor of the control group. Similarly, to

compare the post-test results, the analysis of significance reveals that P=0.000, which is

evidently less than 0.05. This indicates that the differences between post-test results of the

experimental and the control groups are highly significant in favor of the experimental group

(see Table 3). Judging from the results discussed above, it can be assumed that though

participants of the control group demonstrated high performance in the pre-test, the experimental

group demonstrated higher results for the post-test.

In order to observe whether the differences of the pre- and post-test results are significant

within groups, firstly test results of the experimental and secondly the control groups were

analyzed via Wilcoxon Signed Ranks Test. The following table demonstrates the differences

between the pre- and post-tests within the control group. It can be inferred from the table that in

the case of 8 students the results of their post-tests were lower than those of the pre-test. 3

students got higher scores in the post-test compared with the pre-test and 2 students

demonstrated the same results in both pre- and post- tests (see Table 4).

Table 4. Wilcoxon Signed Ranks Test: Comparison of pre- and post-test results in control

group

Ranks[d]

		N
posttest - pretest Negative Ranks		8[a]
	Positive Ranks	3[b]
	Ties	2[c]
	Total	13

a. posttest < pretest

b. posttest > pretest

c. posttest = pretest

d. group = control

The comparison of pre- and post-test results of the control group showed no significant

difference, P=0.075 (see Table 5).

Table 5. Wilcoxon Signed Ranks Test: Control group statistics for significance

Test Statistics

	posttest - pretest
Z	-1.779
Asymp. Sig. (2-tailed)	.075

A similar analysis was done to find out about the differences between pre- and post-test results in the experimental group. The results of the analysis are demonstrated in Table 6 below.

Table 6. Wilcoxon Signed Ranks Test: Comparison of pre- and post-test results in experimental group

Ranks[d]

		N
posttest - pretest	Negative Ranks	0[a]
	Positive Ranks	11[b]
	Ties	1[c]
	Total	12

a. posttest < pretest

b. posttest > pretest

c. posttest = pretest

d. group = experimental

As can be seen from the table, out of 12 participants of the experimental group no student got lower scores in the post-test compared with the pre-test scores. In contrast, the post-test results of 11 students were higher than the pre-test results. Only one student from the experimental group got the same score both in pre- and post-tests.

The comparison of pre- and post-test results of the experimental group showed a significant difference in favor of the post-test results, $P=0.003$ (see Table 7).

Table 7. Wilcoxon Signed Ranks Test: Experimental group statistics for significance Test Statistics

	posttest pretest
Z	-2.937
Asymp. Sig. (2-tailed)	.003

To sum up, the following conclusions can be drawn: the comparison of the pre-test results of the experimental and control groups showed that participants of the control group demonstrated better results than the experimental group. However, after 10-weeks of treatment, (exposure to note-taking during listening activities), the experimental group showed higher results than the control group on the post-test. Moreover, the experimental group showed significant improvement in test scores from pre-test to post-test. Taking all these factors into account, it can be suggested that the treatment conducted in the experimental group during the 10-week period had a positive effect on the listening comprehension skills of the students in the experimental group. Thus, the null hypothesis suggested above is rejected, as the analysis of the data showed that note-taking had a positive effect on the listening comprehension skills of the experimental group population.

4.1.2   *Analysis of the Attitudinal Questionnaire Data*

The data collected through the attitudinal questionnaire are presented below, in percentage.

Table 8: Data analysis on students' responses to the questionnaire, in percentage

Question	Strongly Agree	Agree	Disagree	Strongly Disagree
Q1	42	50	8	0
Q2	0	17	58	25
Q3	17	25	41	17

Q4	41	34	25	0
Q5	0	8	67	25
Q6	16	68	16	0
Q7	0	8	67	25
Q8	0	8	67	25
Q9	8	67	25	0
Q10	42	50	8	0

The following results and discussion address the second research question.

The first statement of the questionnaire referred to the beneficial effect of note-taking on answering the questions in post-listening activities. As can be seen in Table A2 (see Appendix 4), half of the participants agreed with this statement. A bit less than the other half (42%) strongly agreed, while only 8% disagreed with it. No student strongly disagreed with the statement.

The second statement claimed: "Taking notes distracted me from listening to the main ideas of the talk". More than half of the students, i.e. 58% disagreed with the statement, and 25% strongly disagreed with it. Only 17% agreed with the statement (see Appendix 4, Table A3).

For statement 3 (see Appendix 4, Table A4), the majority of the participants, i.e. 41% disagreed with the idea that taking notes during the listening activities was tiresome, while 25% agreed with this statement. 17% of the students strongly agreed and another 17% strongly disagreed with it.

Statement 4 of the questionnaire stated the following: "Taking notes during the listening activity helped me to listen to the talks more carefully". 41% of the students strongly agreed on the statement, and 34% simply agreed with it. No student strongly disagreed with the statement 4. However, 25% disagreed (see Appendix 4, Table A5).

As can be seen on Table A6 (see Appendix 4), more than the majority of the students, i.e. 67% disagreed and 25% strongly disagreed with statement 5, stating that they could have easily marked the correct answer in the answer sheet without taking notes. Only 8% agreed with the statement and no one strongly agreed with it.

The majority of the respondents (68%) agreed with the following statement: "Taking notes helped me to remember the details of the talks". There is an equal distribution of percentages representing 16% strong agreement and 16% disagreement with the statement. No student strongly disagreed with statement 6 (see Appendix 4, Table A7).

Statement 7 of the questionnaire referred to the difficulty of concentrating on the post-listening activities after taking notes. As can be seen in Table A8 (see Appendix 4), more than half of the respondents (67%) said that they did not agree with that idea, 25% expressed strong disagreement, and only 8% agreed with the statement.

Statement 8 of the questionnaire stated: "I would prefer to listen to the audio twice instead of taking notes". Again in this case, the majority of the respondents (67%) disagreed with the statement, 25% strongly disagreed with it. Only 8% agreed with it and no student strongly agreed with it (see Appendix 4, Table A9).

The majority of students (67%) agreed that while taking notes they classified the information in their minds. 8% strongly agreed with the statement and 25% disagreed with it (see Appendix 4, Table A10).

Strongly favorable attitudes of students were noticed toward statement 10: "I actively used my notes when I answered the questions in the answer sheet". Exactly one half of the participants (50%) strongly agreed with this idea and 42% agreed. Only 8% of the respondents disagreed with the statement. There was no strong disagreement with it (see Appendix 4, Table A11).

Though the questionnaire was closed-ended, it provided respondents with a space where they could add some comments about note-taking, some advantages and disadvantages, their

experiences connected with it, etc. According to all those comments, most of the students mentioned note-taking as an advantage. They believed that it greatly helped them to successfully complete the post-listening activities. The respondents mentioned that taking notes helped them to better concentrate on the subject they were listening to. About 50% of the respondents mentioned that, during the 10-week period, all listening activities including note-taking and post-listening exercises improved their note-taking and listening skills. During listening activities, they learnt a lot about different things, people and places. Thanks to listening activities and note-taking they developed note-taking and listening comprehension skills and are now free to communicate with their foreigner friends and understand them.

4.2 Analysis of the Qualitative Data

4.2.1 Analysis of the Interview Data

Ten volunteer students participated in the interview that followed the questionnaire. The interview included four closed-ended questions about note-taking and its influence on listening comprehension (see Appendix 3, a). The volunteers were interviewed separately and were audio-recorded. The interview was held by the researcher. After having collected all interview data, a content analysis was done.

The first question aimed at inquiring why the interviewees thought note-taking was generally taught during listening activities. Answering the question in different ways, all the respondents expressed the same idea. The answers can be interpreted in the following way: note-taking helps to have the information written down. This helps to remember the information and use it for further activities – post-listening tasks, narrations, discussions, etc. Note-taking contributes to getting the idea of the speech or narration better as, while taking notes, one is more careful and attentive to the ideas expressed in the audio.

The second question aimed at finding out some advantages and disadvantages of note-taking during listening activities. According to the interviewees' answers, note-taking during listening activities has a number of advantages: note-taking during listening activities trains the

mind, helps to gain the gist of the topic and have the important points of the audio written down to be able to use them later. The majority of the interviewees mentioned only one disadvantage of note-taking during listening activities. According to their answers, at the beginning it is difficult to listen to the audio, choose the main points and take notes simultaneously. As a result, the note-taker misses some information or facts. However, the interviewees also mention that this is just a matter of time and skill development.

The third question of the interview addressed the interviewees' viewpoint on note-taking during listening activities being either helpful or distracting. The majority of the respondents believed that taking notes during listening activities helped them greatly. They found that by taking notes they later had all the necessary information to complete the post-listening activities. However, three respondents believed note-taking to be distracting as well. They stated that taking notes while simultaneously listening distracted them from listening to the topic carefully and understand it thoroughly. They also mentioned that they had this difficulty only at the beginning of the course.

The purpose of the last question of the interview was to find out whether note-taking during listening activities had somehow contributed to the development of the interviewees' listening comprehension skills. All interviewees responded that they had noticed improvement in their listening comprehension skills. The majority said that every time they watched a video or listened to some audio, they took notes in their minds. They believed that this helped them to concentrate on the topic and understand it better.

4.3 Discussion

The purpose of this study was to address two major questions: first, to find out whether note-taking during listening activities had any effect on EEC learners' listening comprehension skills or not, and second, to inquire what EEC learners' attitudes were towards note-taking during listening activities. Based on the review of the related literature, two research questions and a null hypothesis was formulated. Two types of data were obtained from the instruments

used during the study: qualitative and quantitative. The quantitative data obtained from the pre- and post-tests administered in both groups at the beginning and at the end of the classes were analyzed via SPSS software package. Mann-Whitney U Test and Wilcoxon Signed Ranks Test were used to compare scores obtained from the tests between and within groups. The results of the analysis revealed that there was significant improvement in the experimental group scores from the pre- to the post-tests. In contrast, no significant difference was observed between the pre- and post-test results of the control group. Questionnaire administered in the experimental group at the end of the classes also provided with quantitative data, the analysis of which revealed that students liked taking notes during listening activities and found it beneficial for their studies.

The qualitative data obtained from the observations and interviews showed that learners of the experimental group favored from note-taking during listening activities. According to their responses, they greatly benefited from note-taking as this technique improves their listening comprehension skills, helps them listen to audio segments more attentively and get more information than without taking notes.

From the findings of the current study, it can be concluded that taking notes during listening activities is beneficial for learners and has a positive effect on the development of their listening comprehension skills. Judging from these results, the following answers are given to the previously formulated research questions. First, there is a positive effect between note-taking during listening activities and students' listening comprehension skills. Second, EEC students have positive attitudes towards note-taking during listening activities. Based on these findings, the null hypothesis is rejected, i.e. note-taking during listening activities has a positive effect on the EEC learners' listening comprehension skills.

Chapter 5: Conclusions

This chapter presents the summary of findings of the current study and indicates the limitations faced while conducting the current study. It also discussed implications and applications of and offers suggestions for further research. The aim of the study was to answer the following questions:

- What is the effect of note-taking during listening activities on EEC students' listening comprehension skills?

- What are the EEC students' attitudes towards note-taking during listening activities?

5.1 Findings

The purpose of this paper was twofold: first, to find out if note-taking during listening activities had any effect on the learners' listening comprehension skills or not, and second, to inquire into learners' attitudes towards note-taking during listening activities. Correspondingly, two research questions were formulated, one aiming at finding out if note-taking during listening activities has any effect on EEC students' listening comprehension skills, and another concerning EEC students' attitudes towards note-taking during listening activities. Based on the review of the related literature, the underlying assumption was that there was no relationship between note-taking during listening activities and EEC learners' listening comprehension skills. In order to find out an answer to the first question, pre- and post-tests were conducted in both groups at the beginning and at the end of the 10-week instruction period. Results of the pre- and post-tests were analyzed via SPSS software package and showed that taking notes during listening activities developed listening comprehension skills in the students having received the treatment. The fact that learners of the experimental group demonstrated significantly better in their post-test proved that note-taking has a positive effect on the learners' listening comprehension skills.

As far as the second question of the study is concerned, a questionnaire and an interview were conducted to address it. At the last day of the classes learners of the experimental group were asked to fill in a questionnaires inquiring about their attitudes towards note-taking during

listening activities. Later, ten volunteers were interviewed on the same issue. Results of both questionnaires and interviews revealed that students loved note-taking during listening activities and found it beneficial for their studies.

To conclude, it may be claimed that note-taking during listening activities has a positive effect on learners' listening comprehensions skills. The study also showed that students have positive attitudes towards note-taking during listening activities.

5.2 Limitations

The current study has some limitations which should be pointed out. The first limitation is that it involved a limited number of participants (25), and this sample did not provide a varied population mix. Students of only one level were integrated in the study which may not provide a high degree of representativeness of the target population. Thus, no strict generalization can be drawn. For the results to be generalizable, it is advisable to involve a bigger sample in the study.

The second limitation of the study is that it was not longitudinal. The study lasted only ten weeks, and observations took place once a week. A longer period of instructions and observations might reveal more reliable results.

Another limitation of the study is the absence of randomization. The sample of the study was chosen following the purpose of conducting the research with learners who hadn't been previously exposed to note-taking.

And finally, the last limitation is that both groups involved in the study were exposed to listening activities during classes as the textbook included several such activities. However, compared with the control group, the experimental group was exposed to significantly more listening activities. Thus, it can be assumed that the results obtained from the data analysis are not only due to note-taking during listening activities but also due to the combination of both note-taking and more exposure to listening activities.

5.3 Implications and applications

The results of the current study seem to support the contribution of note-taking during listening activities on learners' listening comprehension skills as well as to the development of their positive attitudes towards note-taking during listening activities. It can also be implied that note-taking during listening activities are more beneficial for developing listening skills than regular classroom classes. Thus, I will strongly recommend teachers in the field of language teaching to implement note-taking during listening activities which will definitely contribute to the learning process.

Taking into account the above-mentioned implications and learners' attitudes towards note-taking during listening activities, it would be reasonable to mention that this study sends a message that teachers should be concerned about the students' needs and expectations concerning note-taking during listening activities. Moving towards the approach of integrating students' preferences in note-taking during listening activities in the teaching process would be very worthwhile. It will help teachers know whether their pedagogical practice in this context meets their students' expectations or not. Ignoring their expectations may cause de-motivation that may have negative impact on successful learning.

5.4 Suggestions for further research

Findings of this study and previously described limitations lead to suggestions for further research. One major recommendation would be to include a bigger sample in the study so that the results are more reliable and generalizable. Another suggestion is analyzing the content of the notes taken by the experimental group to find out how note-taking is developed and improved through time. One more suggestion for future studies is observing the forms of the notes learners take and find out about their preferences of note types. The results would be of benefit to the teachers because they could provide insights that may help the teachers better understand their students' preferences. Studies on cross-cultural differences are also recommended to find out whether or not learners' perceptions differ across cultural contexts.

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APPENDIX 1: **Pre- and post-tests**

a. Pre-test

American University of Armenian

Department of English Programs

Experimental English Classes

Name _____   Time: 10 minutes

Listening skills (10 points)

A1. *Listen to a conversation about two friends – Lauren and Catherine. They are planning to go to a cinema. Answer the questions.* (3 points)

   Before starting to listen, you have 15 seconds to read the questions.

1. What time does the movie start? _____

2. What time does Catherine have to be home? _____

3. What movie are the friends going to watch? _____

4. Does Catherine want to pay with credit or cash? _____

A2. *Listen and circle **T** for "**true**" and **F** for "**false**" sentences.* (3.5 points)

1. The girl has a big family.   T   F

2. Her brother is married.   T   F

3. The girl has two nieces.   T   F

4. The boy has a big family.   T   F

5. His uncle lives in Australia.   T   F

6. The girl wants to have many children.   T   F

7. She has 8 cousins.   T   F

A3. *Listen to the dialogue. Complete the sentences.* (3.5 points)

1. Well, I need some _____, _____ and _____.

2. You're always going to _____ _____.

3. We should also buy some _____.

4. I need some _____ as well. Is _____ _____ here?

5. Well, I like _____ apples and my husband likes _____. So, we'll get both.

b. Post-test

American University of Armenian

Department of English Programs

Experimental English Classes

Name _____   Time: 10 minutes

Listening skills (10 points)

A1. *Listen to the audio about the "History of the Internet" and answer the questions.* (**3 points**)

Before starting to listen, you have 15 seconds to read the questions.

1. How long have computers been used by individuals, businesses, government and the
military?

   _____

2. When did the idea for the Internet start?

   _____

3. What tools are used to connect the Internet?

   _____

4. Which is one of the most popular features of the Internet?

   _____

5. Which are the ways of finding specific information by looking up key words?

   _____

A2. *Listen and circle **T** for "**true**" and **F** for "**false**" sentences.* (**3 points**)

		True	False
1	The Olympic roots go back to 1776 B.C.		
2	For nearly 1200 years the Olympic Games were held every five years.		

3	The winners of the Olympic Games received medals.		
4	The Games included wrestling, races, boxing and horse-racing.		
5	The winners of the Olympic Games were called heroes and lived at public expense.		
6	The Roman games sometimes involved battles to the death and were accompanied by professional carnivals and circuses.		
7	Women all over the world were allowed to participate in the first Olympic Games.		
8	The symbol of the Olympic Games is five rings linked together which stands for the five continents.		
9	The rings of the symbol of the Olympic Games have the same color.		
10	The flame symbolizes the connection between the original and modern games.		

A3. *Listen to the dialogue. Complete the sentences.* (**4 points**)

1. Among all the events that occur at school _____ ceremony is probably the most anticipated and exciting one.

2. The solemn ceremony takes place at the _____ of _____.

3. A _____ is worked out to be staged and the detailed plan of the performance is drawn up.

4. Throughout April and May several rehearsals are made because everyone wants the performance to be a _____.

5. With the last bell the firs form pupils meet the _____, say farewell wishes, congratulate on successful graduation and honor them with flowers and souvenir.

6. The event is so colorful: there are huge bouquets of flowers going to our dear teachers for their _____ contribution to our future.

7. After the school ceremony the happy _____ goes around the city.

8. Another occasion is the ceremony of awarding graduation _____.

APPENDIX 2: Attitudinal Questionnaire

a. EEC students' questionnaire

This anonymous and confidential questionnaire is part of a thesis research study being conducted with the support of the Department of English Programs at the American University of Armenia. It seeks to find out the students' attitudes towards note-taking during listening activities.

We'd like to give you the opportunity to give your views about note-taking during listening comprehension activities. Read each of the following statements and indicate your agreement or disagreement with the statement. Circle the number (4, 3, 2, or 1) that best describes your opinion about the statement.

4= Strongly agree   3= Agree   2= Disagree   1= Strongly disagree

1. Taking notes helped me to answer the questions in post-listening activities.	**1**	**2**	**3**	**4**
2. Taking notes distracted me from listening to the main ideas of the talk.	**1**	**2**	**3**	**4**
3. Taking notes during the listening activity was tiresome.	**1**	**2**	**3**	**4**
4. Taking notes during the listening activity helped me to listen to the talks more carefully.	**1**	**2**	**3**	**4**
5. I could have easily marked the correct answer in the answer sheet without taking notes.	**1**	**2**	**3**	**4**
6. Taking notes helped me to remember the details of the talks.	**1**	**2**	**3**	**4**
7. It was difficult to concentrate on the post-listening activities after taking notes.	**1**	**2**	**3**	**4**
8. I would prefer to listen to the audio twice instead of taking notes.	**1**	**2**	**3**	**4**
9. While taking notes I carefully classified the information in my mind.	**1**	**2**	**3**	**4**

10. I actively used my notes when I answered the questions in the answer sheet.	**1**	**2**	**3**	**4**

Other_____

_____

_____

_____

b.

,

:

:

,   :   ,

:

4=   **3=**   **2=**

1=

		1	2	3	4
1.		1	2	3	4
:					
2.		1	2	3	4
:					
3.		1	2	3	4
:					
4.		1	2	3	4
:					
5.		1	2	3	4
:					
6.		1	2	3	4
:					
7.		1	2	3	4
:					
8.		1	2	3	4
:					
9.		1	2	3	4
:					
10.		1	2	3	4
:					

_____

_____

_____

_____

_____ 56 _____

__

APPENDIX 3: Semi-structured Interview

a. EEC students' interview questions

This anonymous and confidential interview is part of a thesis research study being conducted under the support of the Department of English Programs at the American University of Armenia. It seeks to find out the students' attitude towards note-taking during listening activities.

1. Why do you think students are taught note-taking during listening activities?

2. What are the general advantages and disadvantages of note-taking?

3. Did note-taking assist or interrupt you during the listening activities? How?

4. How has not-taking during the listening activities influenced your listening skills?

b.

,

:

:

1.   ,

                                  :

2.   ,   ,

                                  :

3.

                                                  :   :

4.

                                  :

APPENDIX 4: Questionnaire analysis.

Table A1: Raw Data

ID	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10
1	3	3	2	4	2	3	2	2	3	3

2	4	2	2	3	2	2	2	2	3	4
3	2	3	4	2	3	2	2	3	2	2
4	3	1	1	2	2	4	1	2	3	3
5	3	2	1	4	2	3	2	3	3	4
6	4	1	2	3	2	4	1	2	3	3
7	4	2	2	3	1	3	1	2	3	3
8	3	2	2	2	2	3	2	3	3	3
9	4	2	3	4	2	3	3	4	4	4
10	3	2	3	4	2	3	2	2	3	3
11	4	1	3	3	1	3	2	4	2	4
12	3	2	4	4	1	3	2	4	2	4

Table A2: Calculations for statement 1

f = frequency;   rf = relative frequency;   p = percentage

S1	f	rf	Computations	p
4	5	5/12=0,42	0,42x100	42
3	6	6/12=0,5	0,5x100	50
2	1	1/12=0,08	0,08x100	8
1	0	0/12=0	0x100	0

Table A3: Calculations for statement 2

S2	f	rf	Computations	p
4	0	0/12=0	0 x100	0
3	2	2/12=0,17	0,17x100	17

2	7	7/12=0,58	0,583x100	58
1	3	3/12=0,25	0,25x100	25

Table A4: Calculations for statement 3

S3	f	rf	Computations	p
4	2	2/12=0,17	0,17 x100	17
3	3	3/12=0,25	0,25x100	25
2	5	5/12=0,41	0,41x100	41
1	2	2/12=0,17	0,17x100	17

Table A5: Calculations for statement 4

S4	f	rf	Computations	p
4	5	5/12=0,41	0,41x100	41
3	4	4/12=0,34	0,34 x100	34
2	3	3/12=0,25	0,25x100	25
1	0	0/12=0	0 x100	0

Table A6: Calculations for statement 5

S5	f	rf	Computations	p
4	0	0/12=0	0 x100	0
3	1	1/12=0,08	0,08 x100	8
2	8	8/12=0,67	0,67x100	67
1	3	3/12=0,25	0 ,25 x100	25

Table A7: Calculations for statement 6

S6	f	rf	Computations	p
4	2	2/12=0,16	0,16 x100	16

3	8	8/12=0,68	0,68 x100	68
2	2	2/12=0,16	0,16 x100	16
1	0	0/12=0	0 x100	0

Table A8: Calculations for statement 7

S7	f	rf	Computations	p
4	0	0/12=0	0 x100	0
3	1	1/12=0,08	0,08 x100	8
2	8	8/12=0,67	0,67 x100	67
1	3	3/12=0,25	0,25 x100	25

Table A9: Calculations for statement 8

S8	f	rf	Computations	p
4	0	0/12=0	0 x100	0
3	1	1/12=0,08	0,08 x100	8
2	8	8/12=0,67	0,67 x100	67
1	3	3/12=0,25	0,25 x100	25

Table A10: Calculations for statement 9

S9	f	rf	Computations	p
4	1	1/12=0,08	0,08 x100	8
3	8	8/12=0,67	0,67 x100	67
2	3	3/12=0,25	0,25 x100	25
1	0	0/12=0	0 x100	0

Table A11: Calculations for statement 10

S10	f	rf	Computations	p

4	5	5/12=0,42	0,42 x100	42
3	6	6/12=0,5	0,5 x100	50
2	1	1/12=0,08	0,08 x100	8
1	0	0/12=0	0 x100	0