# The effect of technology-based materials on vocational high school students' listening skill

Merve Deveci Demir [a] [1] , Zekiye Müge Tavil [b]

*[a] National Defense University, Turkey*
*[b] Gazi University, Turkey*

**Abstract**

There is an assumption that technology-based materials are acquisition-rich input, and listening plays a significant role in daily communication as well as the education process. This study aims to examine the effect of technology-based materials on the student's listening ability in EFL classes and elicit students' and teachers' perceptions about the use of technology-based materials for the development of listening skills. In the current study, a mixed-methods research design was adopted. Quantitative data was gathered through pre and posttest results with the participation of 168 pre-advanced English students studying in a vocational high school in Turkey. Qualitative data were obtained from the semi-structured interviews conducted at the end of implementation to identify the teachers' and students' perceptions about the use of technology-based materials. The quantitative data were examined through statistical analyses via SPSS 25, and content analysis was employed to analyze the qualitative data. The results indicated that both technology-based materials and textbook-based materials helped listening skill development. Technology-based materials proved to be slightly more effective than textbook-based materials in quantitative results. Moreover, this study also shows that most of the respondents preferred technology-based materials over textbook-based materials and were motivated in the classroom when using them.

*Keywords:* Listening comprehension skill; web 2.0 tools; technology-based material; textbook-based material

## 1. Introduction

Teaching languages has long been a question of great interest in a wide range of fields from psychology to neurology. Especially, teaching languages to people living in a community in which the target language is not spoken on a daily basis is at the heart of continuing concern within the field of English as a Foreign Language (EFL). Unlike other teaching domains like history or math, language teaching has undergone many changes with diverse lecturing methods. In math or other quantitative sciences, the methods are relatively the same: 'present, practice, and produce' circle. However, the situation is entirely different in the ELT field. Throughout its 300 years of history, ELT has adopted a plethora of teaching

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[1] Corresponding author.
 *E-mail address*: merv.dvc@gmail.com

methods and approaches such as grammar-translation method, audio-lingual method, silent method, community teaching method, communicative teaching method, task-based approach etc. Without a shadow of a doubt, the most significant change has come out following the emergence of technology integration into language classrooms.

Being aware of the vast importance of technology on language teaching, the present study aims to evaluate the efficiency of using technology in developing listening skills in this study. While doing that, a compulsory function of listening skill is emphasized; to communicate with people and understand what is said under the circumstances of the given contexts resembling real communication dialogues.

Listening which is one of the core units of the language is at the vital position of both communication types: daily life and academic contexts. Listening skill development is necessary for English as a Foreign Language (EFL) education to suitably communicate with others. That is why, the critical aspect of the present study is selected as listening skill. The research includes an implementation in which the experimental group and control group are exposed to two different types of materials for the twelve-week semester. In the experimental group, a specially designed lesson plan applying Web 2.0 tools are used. The web-tools that are used in the study (YouTube, Lyrics Training, Voscreen) are a selection from a variety of counterparts. Another focal point of interest in this study is authentic material usage. With the authentic materials explicitly produced for the sake of language education, EFL learners can experience the real language used outside of the language class. To elaborate, the primary scope of this study is to detect if there is a significant difference between practicing listening with technology-based materials and textbook-based materials on the development of vocational high school students' listening skills. It is also intended to explore the participant students and instructors' perceptions about the usage of technology-based materials in listening activities. Despite this research not being based on a representative sample, it is to be hoped that some of the findings from this research may apply to EFL listening activities conducted in other vocational high schools in Turkey.

The findings of this study can help language learners, teachers, and organizations, in general, to better understand the effect of technology-based listening materials usage. Furthermore, insights into this can help provide teachers with a theory-supported pedagogical model for how they should design listening tasks to help students and how they should choose useful listening materials for classroom use. In addition to this, it can provide organizations insights on how to design more effective listening skill development processes for students. Shortly, the primary benefit of this study is assumed to be highlighting the efficiency of modern educational methods like technology integration in the classroom and also assessing the technology-based materials' effectiveness.

Regarding the importance of technology and its implication in ELT listening skill development process, the present study is designed to investigate the effect of technology-based materials on Turkish vocational high school students' listening skill and we intend to answer following research questions:

1. Is there a significant difference between the listening skills of the participants before and after the implementation process?

2. What are the perceptions of the participants about the technology-based materials for the development of listening skills?

3. What are the perceptions of the participating instructors about the technology-based materials for the development of listening skills?

## 1.1. Literature review

Education means raising people compatible with the era. So, to be able to overcome the tough requirements of the era, language teachers should pay massive amount of attention to communicative

outputs of the educational process delivered. Communicative competence lays the foundation of language education in the modern era of language teaching tradition. Regarding the importance of communication, listening comprehension skill is an abounding part of the language upon which we should go through in all details. Over the importance of listening in many aspects of the life, Mendelson (1994) stated that "of the total time spent on communicating, listening takes up 40-50 %; speaking 25-30 %; reading 11-16 %; writing about 9 %" (p. 9). Richards (1983, cited in Omaggio, 1986, p. 126) claims that there are some micro-skills that a learner should have to be able to understand the messages in a regular communication cycle.

Listening skill is regarded as a gift bestowed to humans by many scholars. Flowerdew and Miller (2005) assert that human beings come to the world with an inner ability to hear sounds or environmental stimuli. According to them, all children listen and observe the language initially to the occurrence of speech. In the second step, they only start to speak. Reading and writing are successive skills that come following the acquirement of listening and speaking skills. Thus, it is estimated that of all the language skills, listening is the precursory one to appear (Lundsteen, 1979).

A conceptual information lack exists in defining particular aspects of listening comprehension and identifying underlying parameters. Several studies on listening skill have unveiled a consensus about some factors affecting listening comprehension (Rivers, 1981; Boyle, 1984; Samuels, 1984; Powers, 1999). The common effective factors can be classified as; listener factors, speaker factors, stimulus factors, context factors. Apart from that, a gap still exists in the instruction of listening skill development to be thoroughly competent in the target language though the importance of listening skill in ELT. In a nutshell, academic literature on listening comprehension skill in ELT has revealed the emergence of several different teaching methods. Intending to reach to the best method of listening comprehension skill development, some methods like language-centred, learner-centred, learning-centred have continued to be adopted.

Language learning environments can vary, but the need for assisting materials does not change. Regardless of the country that language learning happens, all learners need to hear the target language via some assistant listening materials. Those materials that can be utilized in listening comprehension development process can be divided into several groups like visual, authentic, inauthentic, textbook-based and technology-based materials.

Increasing interest in technology inverted classes has also affected the language teaching field. Different researchers in the ELT field have their own definitions of technology. Dockstader (2008) described technology integration as the use of technology to modernize and uplift the educational environment. According to Kartal (2005), language teaching requires the use of technology more than other disciplines in social sciences. Technology has numerous effects on language teaching methods. Mainly, the applications have immensely modulated English teaching methods. Many alternatives with positive effects are presented by the innovative technology; thus, making teaching exciting and more productive in terms of language development (Arifah, 2014).

In the experimental study "Using Authentic Material to Improve the Students' Listening Skill" conducted by Mallapiang (2014) he aimed to find out if authentic materials improve students' listening comprehension in terms of inferred meaning comprehension. The results of the study proved that use of authentic materials is one of the good techniques in teaching listening skill, and this technique has succeeded to improve the students' listening skill in terms of inferred meaning comprehension.

Gündüz, Uzunboylu and Özcan (2017) investigated "The Influence of Authentic Materials on the Students Listening Ability in EFL Classes". This study examined the influence of authentic materials on the student's listening ability in EFL classes. The results indicated that most of the participants benefitted from technology-based materials. The students were able to understand and use the language,

and authentic materials were seen to be useful in the language classrooms, and also students were able to use the target language in real-life situations. However, this study also showed that some of the respondents thought that the artificial materials were better than authentic materials as authentic materials made them feel frustrated in the classroom; and also some respondents were still not able to communicate in real-life situations.

Similarly, Dewi (2018) conducted a study named "Utilizing Authentic Materials on Students' Listening Comprehension: Does it Have Any Influence?". Similar with the present study, the purpose of Dewi's study was to investigate the influence of adopting authentic materials on EFL students' listening comprehension. That study's results showed that the students who were taught by using authentic materials got better achievement than those taught by using non-authentic materials. The study was concluded with a suggestion that the students should practice authentic materials by themselves to encourage their confidence and to improve their achievement in learning listening comprehension.

## 2. Method

This research was conducted to explore the effects of technology-based materials on listening skills development of vocational high school students. Both quantitative and qualitative methodologies, or mixed-method, for conducting this research study were chosen in an effort to obtain a rich collection of data. As Miles, Huberman, and Saldana (2014) stated that mixing both genres of inquiry facilitates reinforcing the analytical findings, as well as gaining more analytic texture to research studies.

In order to meet the objectives of the study, both groups were administered the pretest at the beginning of the implementation, and the posttest at the end of the implementation in order to analyze the participants' capacity in listening comprehension before and after the implementation. In the experimental part of the study, pre and posttests were used in a control group design. Experimental and control groups took both exams. Quantitative data which was collected through the students' pre and post-tests were analyzed using IBM SPSS 25.0. Descriptive statistics and independent-samples t-test were used in the analysis of quantitative data. Quantitative analysis was the first step of the study. During the implementation, technology-based materials with Web 2.0 tools were used for the experimental group's lessons for twelve-weeks. The experimental group received suggested activities and exercises which were conveyed through technology-based materials via a selection Web 2.0 tools: YouTube, Voscreen and Lyrics Training. For twelve weeks, those three web tools were used interchangeably, four times for each web tool. Listening was the predominant skill in those technology-based activities.

The qualitative data was collected through interviews conducted with the participants and the instructors. The interviews with students have a focus group design, whereas interviews with the instructors were done one by one. The data collected from both sets of qualitative interviews, and the statistical data generated by pre- and post-tests have been explored through three research questions. Descriptive statistics like means, frequencies and standard deviations were used in order to analyze quantitative data. IBM SPSS 25.0 was adopted as the statistical program. On the other hand, qualitative data were analyzed with content analysis.

### 2.1. Subjects

The population of this study was taken from the first year students of Vocational High School of 2019/2020 academic year in Turkey, which consisted of thirty-three parallel classes. Each class consisted of twenty-eight students with the total number of all the students were 924 students. This study applied purposive sampling technique because this subject is considered too big to conduct. In this case, there were 168 elementary level EFL students as the sample of this research. The English level of the Vocational High School students was assessed in the beginning of the term with the entrance exam

which was before the implementation of the study. All of the sample classes were selected accordingly with their entrance exam results. Convenience sampling was used, those classes who are easy to assess and who got 30-45 points from the entrance test were included into present study's sample group. The researcher divided samples into two groups, eighty-four students for experimental group and eighty-four students for control group. All of the samples were taking the same courses during the semester, four hours of English per week. The quantitative data gathered from these subjects was used to find similarities and differences between the groups and in turn, discover the effect of technology-based materials on vocational high school students' listening skill. On the other hand, qualitative data gathered from three English instructors was used to discover perceptions of the instructors about the technology-based materials utilization in listening skill development.

## 2.2. Instruments

A pretest and posttest was used to collect the quantitative data. In order to test the reliability of the quantitative data collection instruments, a pilot study was made on pre and posttests. At the first step, the ideas gathered from three different language instructors were used to check the content and validity of the pre and the posttest, so the researcher consulted to the advisors about the reliability of the items.

According to Connelly (2008), existing literature advises that a pilot study sample size is expected to be 10% of the universe size. After the completion of the necessary editing on the test, it was piloted with 27 vocational high school students, which response to the Conelly's (2008) suggestion for the pilot study's sample size. When the demographic and educational background of the pilot study's samples were analyzed, it could be seen that they correlate with the universe of the study as they also study in a vocational high school. Upon conducting the pilot test, the raw data gathered from the pretest results were analyzed. The level of difficulty of test items (p) and the discrimination index (D) was assured, and in turn, the internal consistency of the test was measured. The test scores were calculated using the Cronbach's Alpha test, and its reliability was checked. The reliability statistics of the pretest was found 0,7 using Cronbach's Alpha test with IBM SPSS 25.0. The aim of the piloting of the pretest was to determine what type of problems the participants face with and which points lack in the test. In pursuit of the piloting process, the items with a value of the level of difficulty between 0.20 to 0.80 and the discrimination index higher than 0.25 were selected.

After the piloting process, a pretest was applied to experimental and control groups. The pretest scores offered a general overview of the participants' initial listening levels. The content and question types of the pretest items were in line with the content of the activities adopted throughout the semester. At the end of the quantitative part of the study, the posttest was administered on each participant to see the difference in the pretest and posttest grades. Posttest scores were the primary data that offers the change in quantitative data. Both pretest and posttest had been pilot tested before the actual study. The reliability of the test was %75.

Qualitative data were collected through semi-structured interview questions that were conducted with focus groups of participants and 3 instructors. Qualitative data collected through the responses given to the questions were analyzed by using content analysis which is used to interpret meaning from the content of text data, hence adhere to a naturalistic paradigm (Krippendorf, 2004). The content analysis helped discovering the regular themes related to the technology-based materials and listening in general in the perceptions of instructors and participants.

## 3. Results

### 3.1. Pre-test

The aim of this study in Pre-test phase was to compare participants' English levels. Independent sample t-test was applied and the pre-test scores of the experimental and control groups were compared.

The data revealed that the English levels of the experimental and control groups were almost equivalent.

**Table 1.** Pretest Scores Analysis for Experimental and Control Groups

|         | Group        | N  | Mean  | Std. Deviation | *t*  | *df* | *p*  |
|---------|--------------|----|-------|----------------|------|------|------|
| Pretest | Control      | 84 | 63,98 | 12,95915       | ,057 | 166  | ,995 |
|         | Experimental | 84 | 63,86 | 14,17088       |      |      |      |

### 3.2. Posttest

The aim of this study in Pre-test phase was to determine whether there is a semantic difference between the English levels before and after the implementation of the technology-based material use on the experimental and control groups. To see the difference, the paired sample t-test was applied, and the results are given below.

**Table 2.** Pretest and Posttest Scores Analysis of Experimental and Control Groups

| Group        |          | Mean  | N  | Std. Deviation | *t*     | *df* | *p*  |
|--------------|----------|-------|----|----------------|---------|------|------|
| Control      | Pretest  | 63,98 | 84 | 12,95915       | -14,820 | 83   | ,000 |
|              | Posttest | 82,79 | 84 | 9,16223        |         |      |      |
| Experimental | Pretest  | 63,86 | 84 | 14,17088       | -13,927 | 83   | ,000 |
|              | Posttest | 83,69 | 84 | 8,47104        |         |      |      |

The results show that pre and posttest mean scores of the control group differ significantly in favor of the posttests. (t (83) = -14.820; p = .000 <.05). Similarly, the pretest scores of the experimental group prior to the application and the posttest mean scores made after the application differ significantly in favor of the posttests. (t (83) = -13.927; p = .000 <.05). From this data, we can see that both experimental and control groups resulted in with a degree of success (twenty points for each).

The changes within the experimental and control groups' pre- and post-tests scores were examined. After these examinations, comparisons between groups and between measurements were made. While doing this, both the measurements, according to the groups and the groups according to the measurements, were compared. For this purpose, mixed pattern ANOVA analysis was applied for repeated measurements in order to compare the changes before and after the implementation.
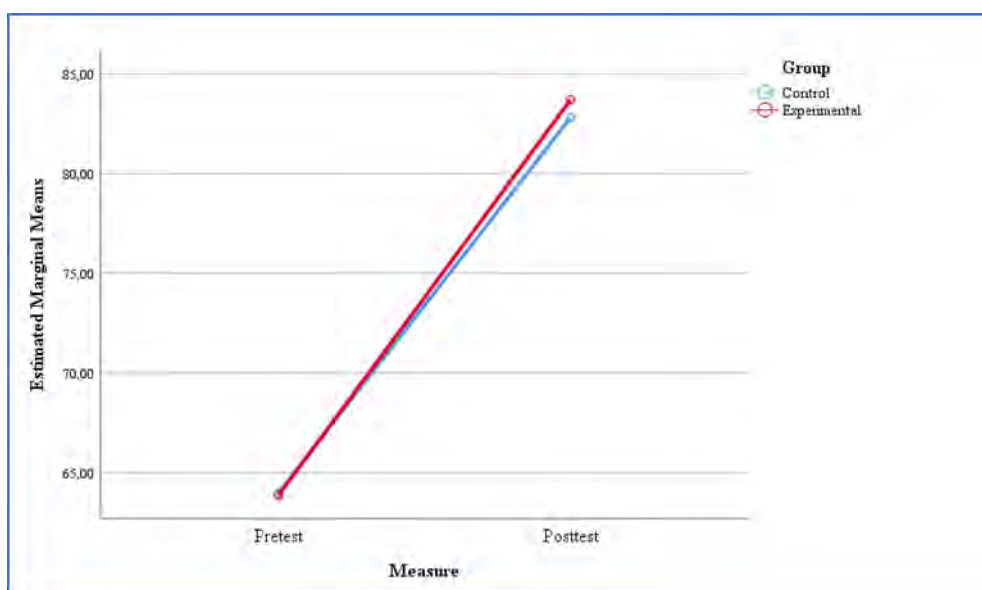
**Figure 1.** Pretest-Posttest Average Points According to the Groups of Students

Data showed that the effect size values of the study were calculated as 001 for inter-group measurements, 712 for inter-measurements. In other words, both groups attained to a success level, but the difference between them is very low. Thus, the common effect of technology-based materials on participants' listening skill remains very low.

*3.3. Interviews*

The interviews with the participants and the instructors were analyzed in order to elicit their perceptions about technology-based materials in the listening skill development process. The aim of this qualitative part is to provide more detailed data, like a further investigation of the quantitative data. The preferences of the participants showed a high rate (70%) of agreement on behalf of technology-based materials. Both groups participants stated that they would like to learn listening via technology-based materials. Another noticeable result was about the participants' self-perceptions about their development. More experimental group participants (85%) expressed that they felt developed by answering positively, whereas only three (42%) of the control group students claimed they thought they had developed. The implementers also expressed their preference for the use of technology-based materials by stating the tremendous motivational atmosphere created by the use of them.

**4. Conclusions**

This research study was an attempt to investigate the effects of using technology-based materials for vocational high school students' listening skill development. The findings of the study indicate that using technology-based materials was useful. Both types of participants who practiced listening with technology-based materials and textbook-based materials reached to acceptable success levels. Their listening points increased about twenty points at the end of the semester. Thus, it can be concluded that practicing listening is a key factor in developing EFL students' listening skill. In light of the findings of the present study, it can be concluded that no matter what type of listening material one practice with, practicing listening helps developing listening skill. As Peterson (2001) stated, in order to develop EFL students' listening skills, more time should be spared for listening activities.

A second finding is that teachers' and students' perceptions about technology-based materials are positive about technology-based materials. What was inferred from the interviews with instructors is

that teachers regard listening skill has significant importance in the language learning process, unlike what learners think about that issue. All three instructors considered listening as a fundamental skill to acquire other skills of the language. To develop the communicative skills of the learners, help them to handle with spoken English outside the classroom, and prepare them to use English in real-life occasions teachers should pay much effort in encouraging their students to listen to real English excerpts. The results of the interview with the instructors revealed that the majority of instructors supported the use of different sources such as movies, songs, and news.

We can conclude that students did appreciate the usage of technology-based materials. There are several reasons for this finding. The underlying reason has its roots in psychological needs. Participants showed greater interest in what they were interested more. So, as the technology-based materials were more attractive to them, they desired to use them more. The underlying reason behind seeing technology-based materials attractive is that they construct solid examples for their future aims in language proficiency and seeing their goal can make them more motivated.

## 4.1. Implications for teaching

Technology-based materials revealed positive results because of their engaging nature. These materials which are not created for educational purposes reflect the examples of natural language used in real life in a particular context and are so engaging for this reason. Technology-based materials can make a change on students' performance but also in their knowledge and interest.

Selecting the most suitable technology-based material is crucial for listening skill development. Also, the main pedagogical implication drawn from the data created by instructors' responses to one-on-one interviews revealed the need for redesigning in-service training programs. There should be some courses including tips to select suitable technology-based materials to be used in the teaching-learning process.

## 4.2. Limitations

Findings of this research study are limited to development of foreign language listening skill; different studies on other necessary language skills which are speaking, writing, and reading may lead to different findings. Besides, with the low number of participants, the generalizability of the findings should be interpreted with caution. More reliable and valid results might have been drawn with more subjects participated in the study. The results are limited to a vocational high school in Turkey; therefore, they should not be generalized to all English Learners. Due to lack of time, in the present research study the subject group took English classes for 12 successive weeks; whereas longer period is needed regarding to the development of foreign language listening skill.

## 4.3. Suggestions for further studies

Findings of this research study are limited to audial materials only; similar studies can be conducted with other types of technology-based materials to develop students' listening comprehension skill (e.g. supplementary videos, videotaped materials and so on.). Visual materials (e.g. supplementary videos, blogs) can be integrated in similar research studies. What is more, deeper studies can be conducted on the effect of technology-based materials on other necessary language skills (reading, speaking and so on.)

With the latest unstable global situations, world education has been moving towards online education. Thus; the material selection in online education with cross-cultural and inter-language aspects is a promising topic for further studies. In this research study we have investigated effects of using technology-based materials for listening skill development with non—native teachers. Similar studies are suggested with native teachers.

## 5. Ethics Committee Approval

The author(s) confirm(s) that the study does not need ethics committee approval according to the research integrity rules in their country (Date of Confirmation: January 08, 2021).

## References

Arifah, A. (2014). Study on the use of technology in ELT classroom: Teachers' perspective (Unpublished master's thesis). Dhaka.

Boyle, J. (1984, 38). Factors affecting listening comprehension. *ELT Journal*,*38*(1), 34-38.

Dewi, R. (2018). Utilizing authentic materials on students' listening comprehension: does it have any influence? *Advances in Language and Literary Studies*, *9*(1), 70.

Dockstader, J. (2008). Teachers of the 21st century know the what, why, and how of technology integration. *Technological Horizons in education*, *26*(6).

Flowerdew, J. &. (2005). Second language listening: Theory and practice. New York: Cambridge University.

Gündüz, O. D. (2017). The influence of authentic materials on the students listening ability in EFL classes. *ENSAYOS, Revista de la Facultad de Educación de Albacete*, *32*(2), 50-55.

Kartal, E. (2005). Bilişim-iletişim teknolojileri ve dil öğretim endüstrisi. *The Turkish Online Journal of Educational Technology – TOJET*, *4*(4), 82-87.

Lundsteen, S. (1979). Listening; its impact on all levels on reading and the other language arts. *Urbana, IL: National Council of Teachers of English & ERIC Clearinghouse on Reading and Communication Skills*.

Mallapiang, Y. (2014). Using authentic material to ımprove the students' listening skill. . *Exposure, 3*(2), 166-177.

Miles, M. H. (2014). *Qualitative data analysis: A methods sourcebook. 3rd Ed.* . California: SAGE.: Thousand Oaks.

Omaggio, A. (1986). Successful language learners: What do we know about them?'. *ERIC / CLL News Bulletin*, *2*(3), 10-15.

Peterson, P. (2001). Skills and strategies for proficient listening. In M. Celce Murcia (Ed.). *Teaching English as a Second or Foreign Language,*(pp. 69-85).Boston: Heinle & Heinle.

Powers, D. (1999). Academic demands related to listening skills. *Language Testing*, *3*(1), 1-39.

Rivers, W. (1981). *Teaching foreign language skills: Second edition.* . University of Chicago.

Samuels, S. (1984). Factors influencing listening: Inside and outside the head. *Theory into Practice*, *23*, 183-189.

# Teknoloji temelli materyallerin meslek lisesi öğrencilerinin dinleme becerisine etkisi

**Özet**

Dinleme, günlük iletişimde ve eğitim sürecinde önemli bir role sahiptir.Bunun yanı sıra, pek çok eğitimci tarafından özgün materyallerin yabancı dil eğitiminde etkili kaynaklar olduğu düşünülmektedir. Buradan yola çıkarak çalışma, özgün materyallerin EFL sınıflarında öğrencinin dinleme yeteneği üzerindeki etkisini incelemeyi ve öğrencilerin ve öğretmenlerin dinleme aktivitelerinde teknoloji tabanlı özgün materyal kullanımı hakkındaki algılarını ortaya çıkarmayı amaçlamaktadır. Çalışmada, karma araştırma yöntemi benimsenmiştir. Türkiye'de bir meslek yüksekokulunda öğrenim gören 176 öğrencinin katılımcı ile yürütülen bu çalışmada, öntest ve sontest sonuçları ile nicel veriler elde edilirken, öğretmenlerin ve öğrencilerin teknoloji temelli özgün materyal kullanımıyla ilgili algılarını öğrenmek amacıyla yapılan yarı yapılandırılmış görüşmelerden nitel veriler elde edilmiştir. Nicel verilerin istatistiksel analizleri SPSS 25 programı üzerinden incelenmiş, nitel verilerin analizinde içerik analizi kullanılmıştır. Sonuçlar, hem teknoloji tabanlı özgün materyallerin hem de ders kitabı tabanlı materyallerin dinleme becerisinin geliştirilmesinde etkili olduğunu göstermiştir. Fakat, teknoloji tabanlı otantik materyallerin nicel sonuçlarda ders kitabı tabanlı materyallerine göre az farkla daha etkili olduğu görülmüştür. Görüşmelerden elde edilen sonuçlar ise, katılımcıların çoğunun teknoloji tabanlı otantik materyalleri daha çok tercih ettiğini ve bunları kullanırken öğrencilerin daha motive olduğunu düşündüklerini göstermektedir.

*Anahtar sözcükler:* Dinlediğini anlama becerisi; web 2.0 araçları; teknoloji tabanlı materyal; ders kitabına dayalı materyal

**AUTHOR BIODATA**

Merve Deveci Demir is an instructor in the Deparment of Foreign Languages at National Defense University. She received her MA degree from Gazi University. She is particulary interested in teaching language skills. She has presented papers at several conferences.

Dr. Zekiye Müge Tavil is a member of the teaching staff in the Deparment of English Language teaching at Gazi University. She received her PhD from the same university. She is particulary interested in materials development,teaching language skills, teacher training and young learners. She has presented papers at several conferences and has published in EFL Journals.