

**CONTRIBUTION OF L2 MORPHOLOGICAL AWARENESS
AND L2 PHONOLOGICAL AWARENESS
TO L2 LISTENING COMPREHENSION OF
TURKISH EFL LEARNERS**

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Yüksek Lisans Tezi

Ağustos 2019

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MA Thesis

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August 2019

JÜRİ VE ENSTİTÜ ONAYI

ABSTRACT

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The present study aimed to find out to what extent L2 phonological and morphological awareness are related to L2 listening proficiency of 54 adult EFL learners. Regarding the purpose of the study, L2 listening comprehension, phonological awareness and morphological awareness levels of the students was measured with an IELTS test, PAT and MAT (Aksoy, 2015). The scores were analysed through the means of descriptive statistics, correlation and linear regression analysis. The findings indicated a moderate positive correlation between the listening scores and phonological awareness test scores, however morphological awareness test scores of the participants were concluded to have a nonsignificant correlation with listening. All in all, the findings of the current study might suggest that 2nd year ELT students demonstrated a high level of phonological and morphological awareness and these linguistic components were observed to relate to listening comprehension scores of the participants positively. The findings were evaluated within the scope of previous research, and implications and suggestions for future studies were provided with the hope of revealing a deeper understanding about the components of L2 listening proficiency.

Keywords: L2 listening comprehension, L2 morphological awareness, L2 phonological awareness, English as a foreign language.

ÖZET

İNGİLİZCEYİ YABANCI DİL OLARAK ÖĞRENEN TÜRK ÖĞRENCİLERİN YABANCI DİLDE DİNLEME BECERİLERİNE YABANCI DİLDE SÖZCÜK BİÇİM VE YABANCI DİLDE SESBİLİMSEL FARKINDALIĞIN KATKISI

Eylül SÖZEN

Yabancı Diller Eğitimi Anabilim Dalı-İngilizce Öğretmenliği Programı

Anadolu Üniversitesi Eğitim Bilimleri Enstitüsü, Ağustos 2019

Danışman: Prof. Dr. Gül DURMUŞOĞLU KÖSE

Bu çalışma, yabancı dilde sesbilimsel farkındalığın ve sözcük biçim farkındalığının 54 yetişkin EFL öğrencisinin yabancı dilde dinleme anlama becerisine ne ölçüde katkıda bulunduğunu bulmayı amaçlamaktadır. Çalışmanın amacı ile ilgili olarak, öğrencilerin yabancı dilde dinleme-anlama becerileri IELTS sınavının dinleme bölümü ile, katılımcıların yabancı dilde sesbilimsel farkındalığı PAT ile ve sözcük biçim bilgi seviyeleri MAT (Aksoy, 2015) ile ölçülmüştür. Öğrencilerin skorları betimsel istatistikler, korelasyon ve doğrusal regresyon analizi yoluyla incelenmiştir. Bulgular, katılımcıların dinleme puanları ile sesbilimsel farkındalıkları arasında orta dereceli ve pozitif bir ilişki bulurken, sözcük biçim farkındalık testi puanları arasında pozitif ancak zayıf bir ilişki olduğunu göstermiştir. Sonuç olarak, bu çalışmanın bulguları, 2. sınıf ELT öğrencilerinin yüksek düzeyde sözcükbiçim farkındalık ve sesbilimsel farkındalık gösterdiğini ve bu dilsel bileşenlerin katılımcıların dinleme anlama puanları ile olumlu şekilde ilişkili olduğu görülmesi şeklinde yorumlanabilir. Bulgular önceki araştırmalar kapsamında değerlendirilmiş ve L2 dinleme yeterliliğinin bileşenleri hakkında daha derin bir anlayış ortaya çıkması ümidiyle gelecek çalışmalar için çıkarımlar ve önerilerde bulunulmuştur.

Anahtar Sözcükler: Yabancı dilde dinlediğini anlama, Yabancı dilde sözcük biçim farkındalığı, Yabancı dilde sesbilimsel farkındalık, Yabancı dil olarak İngilizce.

01/08/2019

ETİK İLKE VE KURALLARA UYGUNLUK BEYANNAMESİ

Bu tezin bana ait, özgün bir çalışma olduğunu; çalışmamın hazırlık, veri toplama, analiz ve bilgilerin sunumu olmak üzere tüm aşamalarında bilimsel etik, ilke ve kurallara uygun davrandığımı; bu çalışma kapsamında elde edilen tüm veri ve bilgiler için kaynak gösterdiğimi ve bu kaynaklara kaynakçada yer verdiğimi; bu çalışmanın Anadolu Üniversitesi tarafından kullanılan “intihal içermediğini” beyan ederim. Herhangi bir zamanda, çalışmamla ilgili yaptığım bu beyana aykırı bir durumun saptanması durumunda, ortaya çıkacak tüm ahlaki ve hukuki sonuçları kabul ettiğimi bildiririm.

Eylül SÖZEN

ACKNOWLEDGEMENTS

First of all, I would love to express my deepest gratitude to my thesis advisor, life coach and half-mom, Prof. Dr. Gül Durmuşoğlu Köse for always leading me even when I doubted myself. It would not be possible for me to finalize this master's program without her invaluable insights and enlightening mentorship. I have been very lucky to meet such a wonderful guide. Gül hocam, it was an honour to learn from you.

I would also like to extend my gratitude to my thesis committee, for each one of them contributed a great amount to the final version of this study. My special thanks are extended to Prof. Dr. Ümit Deniz Turan, since she provided her expert opinion on the PAT. Assistance provided by Dr. İlknur Yüksel was very greatly appreciated regarding the data analysis and interpretation of the additional research questions. Dr. Selma Kara and Dr. Gonca Subaşı also provided me with very valuable insights.

I also owe to my colleague Edward McQuaid for voicing and recording the PAT, to Assist. Prof. Özgür Yıldırım for being available whenever I needed assistance regarding the data analysis. Also, 2nd year ELT students should be acknowledged, since they patiently sat for whole my data collection procedure even when they were exhausted. Their teachers, my colleagues also deserve acknowledgement here. Even when the syllabus was packed, they were able to spare invaluable time for my tests. Yücel Öz, Samet Deniz, Elçin Ölmezer Öztürk, Dilek Aydın Ateş and Zuhale Kıyık, thank you.

A lot of people assisted me on my master's journey. Special thanks go to the two directors I worked with: Veli Sonkur, and Prof. Dr. Belgin Aydın for encouraging me to follow this path.

The biggest challenge in completing this thesis was to start for me. I want to thank my colleagues in School of Foreign Languages. Fatma Aydın, Revan Serpil and Seçil Somer for giving me the spark I needed and always checking on me. You cannot imagine how big of an encouragement you have been to me.

Having good friends is more than a necessity during these times. I want to thank my best friends, three of whom I met thanks to Anadolu University, Yasemin Erden, Mehtap Yorgancı, Hülya Sezer and Naze Demir for sharing my excitement and being always there for me. These women have been with me during the best and worst times in

my life. Some provided shelter, some provided laughter. I am lucky to have you in my life.

Nobody has been more inspiring for me in the pursuit of this thesis than my family members, who are my ultimate role models. My deepest appreciation goes to my sister Ada Tetik, the best sister one can ever have, my father Celal Tetik and my mother Özden Devrim Tetik for always being amazing parents and making every sacrifice for me and my sister without a blink. We are a great family and I am proud of us. My aunts, Saygın Eylem Yavuz and Deyiş Cesur also deserve acknowledgement in the name of their families. My grandparents, Keziban and Mahmut Işık also should be thanked for raising such great parents for us.

Lastly, I owe my sincere gratitude to Hakan Özkavukçu, my significant other, who helped at every step of data analysis as a mathematician, for being my rock, having faith in me and my intellect, actively supporting my career and encouraging me to move forward in life at every chance.

EYLÜL SÖZEN

ESKİŞEHİR 2019

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LIST OF ABBREVIATIONS

EFL:	English as a Foreign Language
ELT:	English Language Teaching
ESL:	English as a Second Language
L1:	First Language
L2:	Second/ Foreign Language
MA:	Morphological Awareness
PA:	Phonological Awareness
MAT:	Morphological Awareness Test
PAT:	Phonological Awareness Test
IELTS:	International English Language Testing System
FL:	Foreign Language
FLL:	Foreign Language Learner

1. INTRODUCTION

1.1. Background to the Study

In many universities today, English, which has become a world language in the last century, is used as the medium of instruction and now it is the language of science, aviation diplomacy, economics and media industry (Szczepaniak, Pathan & Soomro, 2013). To be able to better understand the role and relative significance of English in Turkey, it is important to look at how Turkey is located among three concentric circles as Büyükkantarcıoğlu (2004) suggests, namely the inner circle, the extended circle and the expanded circle. As Turkey has no colonial history, it positions itself in the expanded circle, where English is taught as a foreign language. In other words, English mostly serves as an instrument in education, especially at the tertiary level in lots of departments like engineering, management, and economics both in the most prestigious state and private universities (Aksoy, 2015). As a result, there are one or two years mandatory or elective preparatory English programs given in the school of foreign languages for students before they start taking courses in their undergraduate departments. The purpose of these preparatory schools is to provide students with the proficiency level which is required to be successful in their undergraduate studies by introducing them the grammar and vocabulary as well as helping them develop listening, speaking, reading and writing skills. They also aim to make the language learning process easier by equipping the learners with necessary knowledge and awareness. To be able to achieve that, there are two different approaches in teaching a language generally adopted by the school of foreign languages or preparatory schools, which are either teaching language skills in separate courses or with an integrated approach. However, according to Oxford (2001), in contrast to segregated approach, integrated approach exposes learners to more authentic ground for communicative language use, and therefore must be adopted in language courses to emphasize that English is not only a tool to pass exams nor of a mere academic interest, but it is a bridge that connects people and allow for sharing among them. Moreover, content-based or task-based approaches, the two forms of the integrated language teaching approach, provide learners with the opportunity to see the language as a whole, rather than studying its separate parts, therefore ensure that the process of learning a language becomes a highly motivating journey for learners from all ages and backgrounds (Oxford, 2001).

When the role of English as the most fundamental foreign language both in Turkey and in other countries within the current conjuncture is considered, the need to equip learners with necessary knowledge and linguistic awareness emerges as indispensable. In addition, 21st century learners need to be able to relate every piece of information they learn with what they already know, critically analyse the language and transfer from one language area to another to succeed in an ever-evolving environment where they are expected to engage in complex thinking and communication (Griffin & Care, 2014). In other words, they are required to make intelligent use of their knowledge in one field and to exploit that knowledge to be successful in another. For example, phonological awareness and intra-word knowledge are great sources for language learners to be able to excel in listening comprehension in L2. From another point of view, being a 21st century learner requires making such connections and transfers, therefore the relationships among those language areas and the effects they have on each other deserve to be inspected more meticulously in Turkish EFL environment.

On the other hand, the literature in the ELT area has been dominated by the vocabulary and grammar research according to the scholars (Bian, 2017; Vandergrift, 2007). Although meaningful input can mainly be received via speech, listening has been the most neglected skill from the very early periods of the ELT according to Vandergrift (2007). In the earliest periods of ELT, the only purpose was to be able to read and write, therefore, it was not before the introduction of the Audiolingual Approach, which happened at the beginning of 1940s in the USA, that the listening came onto the stage as an eye-catching element of language teaching (Celce-Murcia, 1991). Even after then, listening comprehension skill was viewed as a passive and receptive skill (Johnson, 2013) as no different from reading and gradually listening was accepted as an active mental process throughout the years (Bagatur, 2016). Following the research in first language (L1) acquisition, language methodologists have guessed the process when learning a second or a foreign language (L2) might possibly be very similar to the process in L1 acquisition, hence, the role of the listening comprehension, the *Cinderella skill* (Kelly, 1969), has been re-examined in myriad studies until the present day.

1.2. Statement of the Problem

The importance of L2 listening comprehension gained attention of the scholars thanks to interactionist perspectives in ELT in the recent years and in order to develop listening comprehension in L2, teachers have sought many ways and strategies. Nevertheless, even the rise of technological devices used in language classrooms and the Multimedia Learning Theory (Plass & Jones, 2005), which advocates the idea of employing pre-listening or pre-reading advanced organizers, such as a video that will help students activate their background knowledge on the topic, has not changed the way students perceive themselves with regards to their listening comprehension skills. According to some studies conducted in the area, learners perceive L2 listening comprehension the greatest difficulty in learning a language (Graham, 2002), and consequently, they perceive themselves the least successful in listening comprehension (Graham, 2006).

Being in an EFL environment, learners in Turkey, speaking in broad terms, also suffer from the same phenomena besides experiencing difficulties transferring their knowledge and skills from one language area to another. More specifically, they struggle with two major communicative skills: listening and speaking in English. Despite years of practice, these two skills are hard to reach a native-like competence in such an environment. Furthermore, even when the students visit foreign countries, although they can speak intelligible English, they cannot comprehend what other speakers say (Brown, 1995) because as Rosa (2002) asserted they are accustomed to a slow formal style of English and modified/simplified speech which is unnatural. Considering the significant role of English in Turkish EFL context, there emerges a need to equip learners with necessary knowledge and awareness. It cannot be denied that this problem needs urgent care, when we think how poor listening skills negatively affect the development of interactive language use as it interrupts the flow of meaningful input. As the literature suggests, when there is lack of meaningful input, it is believed that other language skills, such as speaking is also negatively affected because one can hardly produce a sound which one cannot properly hears.

When it was realized that the listening problems also affect other areas in language, the researchers focused on the reasons why the listening skill is challenging for the learners. The previous literature suggests that listening is an active and complex process

where learners need to attend to the input, blend it with what they already have in their mental inventory and create a new meaning out of this blend. According to this definition, one of the many problem areas in listening comprehension is revealed as the heavy processing demands needed while listening. Another problem may be rooted in the unfamiliarity in lexis, grammar, and pronunciation (Ak, 2012). It can seriously affect the listening comprehension success especially in situations like exams, where the learners do not have the chance of asking for repetitions. Lastly, not being able to understand what has been said because of phonological differentiation deficiency, which means listeners cannot differentiate between sounds, is another difficulty learners face when listening (Ur, 1984, Goh; 2000). Similarly, when we look at the factors affecting listening comprehension success, what is striking is, according to Kutlu and Aslanoğlu (2009) the most critical factors are “the number of books read by children within a month” and “the number of books at home”. It can be interpreted as reading habit is a strong predictor of listening success. Therefore, it is necessary to look at the components of reading comprehension to better understand its relationship to listening comprehension.

To sum, listening skills should be emphasized more as it is an essential unit of overall language proficiency. There are many factors involved in the procedure, yet they remain under researched. To be able to understand the covert process of listening comprehension in a foreign language, it is necessary to have a more detailed look at the linguistic components related to L2 reading comprehension as well as L2 listening comprehension. Therefore, the question whether intra-word knowledge, as part of L2 morphological awareness and L2 phonological awareness might have an impact on listening comprehension naturally arises. Although the reasons behind this challenging language skill have been unravelled in many studies, there is a gap when it comes to look at the relationships between L2 listening comprehension success and other linguistic components, such as morphological awareness and phonological awareness. By examining the impact these linguistic components might have on L2 listening comprehension, we can better understand how listening skill is related to other linguistic components that have been proved useful in reading research. It will perhaps help researchers validate the close relationship reading and listening have in foreign language research as well as showing new ways to tackle with this receptive skill. It might help language practitioners in the classrooms, especially when teaching learners how they can get benefit from other linguistic knowledge areas when they face listening problems as

well as aiding them to make cross-transfers between and among their linguistic inventories.

1.3. Statement of Purpose and Research Questions

As mentioned earlier, English has an important role in education in the current setting and L2 listening comprehension skill remains a puzzle for Turkish learners of English. Therefore, the reasons or the sources of difficulties in L2 listening must be understood thoroughly and tackled with meticulously. In parallel to the aforementioned needs and purposes, this study will focus on L2 listening comprehension and revealing a possible relationship to L2 morphological awareness and L2 phonological awareness with the hope that it will unveil a deeper understanding about the nature of language learning in Turkish EFL setting.

Therefore, research questions guided this study are as follows:

1. What is the relationship between Turkish EFL learners' listening comprehension scores and morphological awareness levels?
2. What is the relationship between Turkish EFL learners' listening comprehension scores and phonological awareness levels?
3. How do the participants perform on different components of IELTS, MAT and PAT?
4. What are the effects of following courses on LP, PAT and MAT;
 - a) INÖ 119 Contextual Grammar and INÖ120 Contextual Grammar II
 - b) INÖ 135 Listening Comprehension and INÖ 136 Listening and Note Taking
 - c) INÖ 255 Linguistics and INÖ Linguistics II

1.4. Significance of the Study

The present study might be acknowledged as significant in a few ways. Although studies in the past three decades revealed several problems learners face. according to Vandergrift (2007), there has been very little knowledge about why the communication breaks down and how the learner comes to a conclusion while practicing listening. Also, teachers avoid touching listening in their classrooms, although it is an importance source of meaningful input for the learners (Goh, 2000). This might be due to its covert nature and the difficulties arise with it. Research on second language listening have focused on many factors influencing listening comprehension. Among these, morphological

awareness, which is the ability to chunk a word into smaller meaningful parts, plays an important role, as listening in English requires the knowledge of both grammar and vocabulary. Another idea that was put forward by Andringa et al. (2012) suggests that non-native listening comprehension ability depends heavily on linguistic knowledge chiefly and less on the listeners' reasoning. When we think English is a morphophonemic language, which means morphology, being a component of linguistic knowledge, deserves a more critical look. Hence, the results of this study might demonstrate that morphological awareness instruction might be a part of the listening comprehension activities in the classrooms.

Moreover, English is taught commonly from an early age until the end of high school education and then, in many of the universities, students are expected to pass an English language proficiency test, in which listening comprehension skills are measured, to be able to start their undergraduate studies in Turkey. Despite its significance, listening comprehension skill is the most challenging for the learners due to the exposure to very limited authentic input both in and out of the classrooms. Since language teachers speak with an unnaturally simplified or overly articulated fashion and provide the learners with such listening materials, it becomes even more challenging for FLLs to be able to communicate in the target language in real-life situations (Rosa, 2002). Therefore, phonological awareness shows up as an important component in listening comprehension studies.

Despite numerous studies in the area, results still do not fully explain all the factors or the possible complex relationships among those factors which might influence L2 listening ability of a learner, thus leaving a gap in the literature. To our knowledge, there are no studies conducted in Turkey regarding the relationship between listening, morphology and phonology. This study, therefore, aims to reduce the gap in the area by trying to explain the possible correlation of the following factors with L2 listening comprehension scores of the English major adult Turkish EFL learners: morphological and phonological awareness.

2. LITERATURE REVIEW

The starting point for this study is that the listening comprehension skill in a second or foreign language is the least understood, taught and researched in the past several decades (Vandergrift & Goh, 2012; Vandergrift, 2007) although it is very commonly used in a lot of areas. It is one of the most challenging skills for foreign language learners (FLL) because of multifold reasons. The reasons might stem from the difficulty of observing the development of such an intrinsic skill. Similar to researchers, because of its complex and covert nature, most of the language teachers tend to undervalue this skill in their classrooms. Regardless of how important this skill might be, it is also overlooked by its half-sister speaking in language classrooms (Nunan, 2002). On top of that, it is seen as purely receptive and passive where the language learner soaks up what they hear like a sponge (Lucas, 2004).

However, it should deserve more merit when we think how crucial its role in second and foreign language acquisition. According to Long (1985), understanding the spoken input has been categorized as the most important skill among the four language skills and as listening skill develops, it contributes to development of other language skills.

To date, listening research has dealt with two broad categories, one in listening comprehension research in the first language (L1) and the other in the second or foreign language (L2). The focus of the current study is on English as a Foreign Language (EFL); therefore, the following review of literature will annotate the studies conducted in this area with the hope that research into L2 listening comprehension from the perspective of its correlation with two other linguistic skills, morphological awareness and phonological awareness, might provide us with a better understanding of this neglected language skill. In this section, the rationale behind the study is explained; the definition of listening, processes of listening, the relationship between the two receptive skills; reading and listening comprehension will be discussed briefly.

2.1. Listening Proficiency

Listening comprehension and listening proficiency lies at the centre of foreign language learning since the improvement of listening skill has demonstrated a positive impact on other linguistic skills as well (Dunkel, 1991). Researchers define listening differently. The simplest definition of listening can be “understanding what others say”.

This definition is close to what Bowen, Madsen and Hilferty (1985) suggested by saying that listening is understanding oral language. Similarly, Lundsteen (1971) defines listening skill as a process in which what speaker says is converted into meaning in the listener's mind. Morley (1973) believes that listening is "involving basic auditory discrimination and aural grammar as well as reauditorizing, choosing necessary information, recalling it, and relating it to everything that involves processing or conciliating between sound and composition of meaning" (Ak, 2012, p. 12). Also, Littlewood (1981) supports the view that listening is a complex activity where learners utilize both their linguistic and non-linguistic knowledge to construct meaning from what they heard. When we look at different definitions of listening, we can see that the basic process in listening is as follows; listeners hear the oral message, they divide the whole into individual sounds (phonemes), they classify them into lexical and syntactic categories, and interpret the message (Gilakjani and Sabouri, 2016).

Although listening is an internalised skill, which makes it challenging to study directly, there are some well-accepted frameworks of listening. Hulstjin (2003) suggests that learners can constitute a mental representation from the oral input thanks to the interaction between linguistic knowledge and world knowledge. Following the creation of the mental images, listeners engage in either top-down or bottom-up processes depending on a few factors including "purpose for listening, learner characteristics such as level of proficiency and the context of the listening event" (Vandergrift, 2007). Top-down processes are generally preferred when listeners are required to use background knowledge, which they store in their long-term memory while they favour bottom-up processing where the meaning is constructed step by step combining smaller elements of features to reach discourse-level features as put forward by Vandergrift (2007).

While the common view that more exposure will cause more advanced listening skills in learners is true to a point, it falls short in predicting the success in L2 environment according to Field (2008). He admits that exposure to the spoken input contributes to the process of automatization in making connections between sounds and words for the learners who live in the target language environment where they might have deeper motives to extract meaning from context and possibility to negotiate meaning when breakdowns occur thanks to face-to-face interactions. On the other hand, in foreign language environments while some students are able to improve their listening

proficiency and can derive meaning from context, many find it difficult and as a result they report listening as one of the most challenging skills in learning a language (Graham, 2002; 2006; Hasan, 2000). Therefore, research into L2 listening carries significance in terms of pedagogy as well since the learners who advance in listening comprehension will be more successful in other aspects of L2 learning in turn (Vandergrift, 2007).

The relationship between reading comprehension and listening comprehension ability has been interesting the scholars since “comprehension is a specialized type of reasoning process that brings about a mental representation of a message when attempting to understand both oral and written text” (Li, Cheng & Kirby, 2012, p.48). In other words, both of these comprehension types share some commonalities in terms of mental processes one undergoes when engaging with either activities. According to what Sticht and James (1984) put forward, one of the two types of transfer, oracy to literacy transfer states that learners apply what they have already heard to the written text to develop their reading ability. Likewise, literacy to oracy transfer points out that learners use the conceptual knowledge and lexical knowledge they picked up from reading to be better at speaking and listening.

However, these two receptive skills are distinct with regard to the input modalities. While in reading input stays visible and can be referred as many times as needed, in listening input disappears as soon as it is uttered. As a result, L1 learners utilize mostly top-down processing when attending to listening comprehension activities (Vandergrift, 2004). Another difference is that reading develops in L2 more rapidly because L2 learners mostly start reading in the target language before they can have access to authentic input in the foreign language, except for the immersion cases (Li, Cheng & Kirby, 2012).

Listening comprehension and reading comprehension share some commonalities although they have some differences. They are both receptive skills that require a special type of reasoning process of a message sent via a written or an oral text and both skills share the same lexicon and syntax (Bian, 2017). Empirical studies have shown that listening comprehension is a strong predictor of reading comprehension, both in L1 and L2 because both receptive skills depend on the ability to interpret words, sentences and larger units of a text (Li, Cheng & Kirby, 2012). Although we know less about listening comprehension and reading comprehension in L2 or FL, it is assumed that there is one *general language processing skill* which influences the performances of learners in both

reading and listening comprehension (Anderson & Lynch, 1998). Anderson and Lynch (1998) also states that this skill includes such abilities as “to be able to consider each sentence as a complete unit and each text as a thematic whole”, therefore, developing listening comprehension skill causally leads to better reading comprehension, for native speakers as well as foreign language learners.

2.2. Phonological Awareness

In this section phonological awareness is defined, smaller components of phonological awareness are explained and tasks targeting to measure phonological awareness are exemplified. Later in this section, the relationship between phonological awareness and morphological awareness is discussed along with the studies investigating the relationship of this linguistic awareness to L2 listening comprehension skill.

2.2.1. Overview of phonological awareness

Phonological awareness, also known as meta-phonological awareness, broadly refers to the sensitivity of the learners to sounds, syllables and prosody of the target language (Cassady, Smith and Huber, 2005) and it is the ability to identify and manipulate units of sound (Pan, Song & Su, 2016). Chard and Dickson (1999) also defined phonological awareness as “the understanding of different ways oral language can be divided into smaller components and manipulated” (p.262). Scholars examined how sounds in a word can be divided into categories and identified four phonological units. They suggested sentences can be broken down into words, words into syllables, onset and rime, and individual phonemes (Lee, 2011; Chard & Dickson, 1999). Being phonologically aware, therefore, means understanding how to delete, add or substitute the syllables or sounds in a word (Chard & Dickson, 1999).

Syllable. It is the largest phonological unit in a word. When we divide a word into its syllables, we use a split between each uninterruptedly articulated sound, i.e. “cat” is only one syllable and is shown as in the parenthesis (/cat/).

Onset-rime. According to Glossary of Linguistic Terms (2003), an onset is the part of the syllable that precedes the vowel of the syllable and a rime is the part of a syllable which consists of its vowel and any consonant sounds that come after it. In the word /cat/, segmentation occurs right after the first consonant as in /c-at/. In this example, /c/ is the onset and /at/ is the rime of the syllable.

Body-coda. Segmentation here appears after the first vowel of the syllable, which can be exemplified as /*ca-t*/.

Phoneme. This is the most advanced level of segmentation because the split occurs between each contrastive sound. It can be shown as /*c/-/a/-/t*/.

The skills that come together and compose phonological awareness are not at the same level, rather, these skills lie on a continuum of complexity. Høien (1995) suggests that tasks at different levels of phonological awareness are associated with either “shallow” or “deep” levels of the linguistic component under investigation. “Shallow” levels of phonological awareness tasks require sensitivity to the larger components of spoken language, such as words and syllables while “deeper” levels of the same awareness are more associated with a high level of sensitivity to smaller components of the oral language, such as individual sounds or phonemes. In similar vein, according to Chard and Dickson (1999), at the less complex end of the continuum, there are activities such as initial rhyming, rhyming songs, rhyme judgement, rhyme completion etc. (see Figure 2.1). When we look at the activities located at the centre of the continuum, there are tasks that require making analysis, (e.g. segmenting words into syllables) and some tasks require synthesis (e.g. blending syllables into words) of smaller phonological units. Next are the tasks that require the ability to segment words into onsets and rimes as well as being able to blend onsets and rimes into words (Chard & Dickson, 1999). As the continuum moves to the more sophisticated end, there is the phonemic awareness, “which is regarded as a robust indicator of phonological awareness” by the researchers (Lee, 2011, p.20). Among more advanced skills we can count distinction, segmentation, blending and manipulation of speech units that fall into a continuum with phonemes at the more complex end (Lee, 2011).

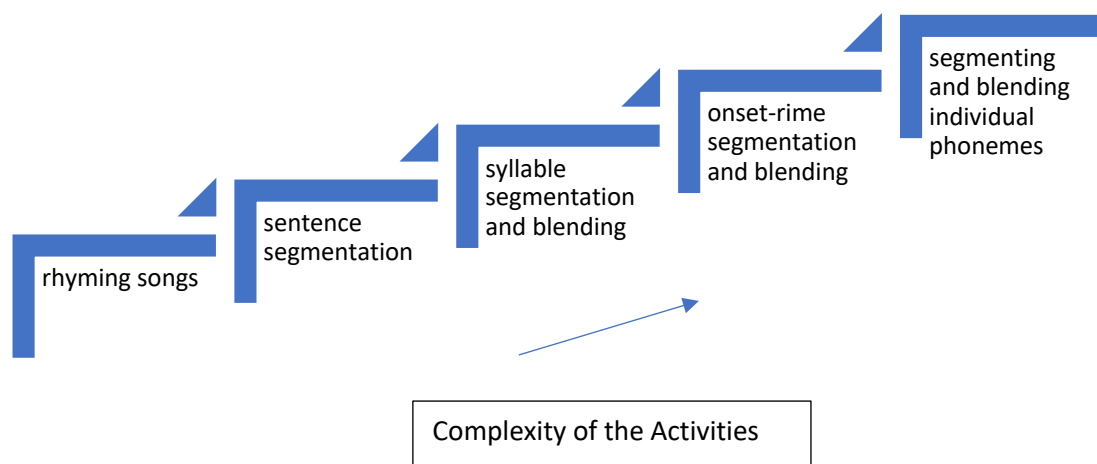


Figure 2.1 *A continuum of complexity of phonological awareness activities (Chard & Dickson, 1999)*

At this point, it is important to emphasize that although phonological awareness is often confused with phonemic awareness, two terms differ slightly. Phonological awareness deals with “the learners’ ability to detect and manipulate progressively smaller units of sound within spoken words” (Cassady, Smith & Huber, 2005, p. 2) while often-confused term phonemic awareness is based on “the realization that a spoken word is comprised of phonemes and the ability to manipulate them orally” (Lee, 2011, p.20). In other words, the former is a broader term and the latter, thus can be accepted as a subcategory of it.

Phonological awareness is measured via different sets of tasks that target separate aspects of it. Ehri, Nunes, Willows, Schuster, Yaghoub-Zadeh, and Shanahan, T. (2001) conducted a meta-analysis which included all experimental studies available to date that included some type of phonology instruction to a group of participants and a control group to test the effects of phonological awareness on reading comprehension. They have found 52 studies that met their criteria and they evaluated these studies relying primarily on the mean score differences between the experimental and control groups. According to this meta-analysis of 52 studies by Ehri et al. (2001), some tasks that are utilized commonly in these studies include the following:

Phoneme isolation. It requires recognizing the phoneme and being able to isolate it. For example, “Tell me the first sound in *table*” (/t/).

Phoneme identification. It requires to be able to recognize the same sound in different words, such as “Find the common sound in *can*, *cat* and *cute*.” (/k/).

Phoneme categorization. It means the learner should be able to tell apart the odd sound among a series of three or four words. For example, “Which word does not belong? *Bus*, *bun*, *bug*, *rug*?” (/r/).

Phoneme blending. It requires listening to a sequence of separately spoken sounds and combining them to form a recognizable word; for example, “What word is /s/ /k/ /u/ /l/?” (*school*)

Phoneme segmentation. It requires breaking a word into its sounds by tapping out or counting the sounds or by pronouncing and positioning a marker for each sound; for example, “How many phonemes in *ship*?” (3: /s/ /i/ /p/)

Phoneme deletion. It requires recognizing what word remains when a specified phoneme is removed; for example, “What is *smile* without the /s/?” (*mile*)

In another study conducted by Lee (2011), some tasks that aim to measure phonological awareness are reported as (a) being able to provide rhyming words to a given word, (b) articulating phonemes of a word separately, (c) blending distinct sounds of a word, (d) deleting a sound or a syllable from a word and saying what remains, (e) categorizing the words that start with the same sound. It should be noted regarding the measurement of phonological awareness that it does not rely on orthographic knowledge at any level nor does it require any written response, which makes designing a test targeting to measure the phonological awareness quite challenging.

When it comes to the importance of this skill, one fact should be pointed out. Phonological awareness has been extensively researched until today, though most of the studies focused on its relationship with reading in L1 as well as development of vocabulary in children (Metsala, 1999). Nagy, Berninger and Abbott (2006) states that “one of the major theoretical advances in reading research in the last 50 years has been recognition of the crucial role that phonological processes play in learning to read” (p. 136). Also, according to The National Reading Panel (2000) phonological awareness has

significant impact on L1 reading comprehension, although the direct link between this skill and listening comprehension could not be established as firmly. The role of phonological awareness in L2 listening comprehension, however, can be said to be unclear to date. This study, therefore, humbly aims to reduce the gap in the literature.

2.2.2. Phonological awareness and listening proficiency in foreign language

An extensive body of research has focused on the relationship phonological awareness has with reading development in the first language (Adams, 1994; Torgesen et al., 1997; National Reading Panel, 2000; Li, Cheng & Kirby, 2010). In their meta-analysis of 52 studies measuring the effects of phonological awareness training on reading ability, Ehri et al. (2001) found out that PA instruction helped children develop reading comprehension. Durgunoglu et al.(1993) found in a study with Spanish speaker young learners that higher phonological awareness levels in L1 transfers to L2 as well. Their study demonstrated that the learners who could isolate initial sounds in their L1 (Spanish), could do so better as well in their L2 (English) when compared to their peers who scored lower on the phonological awareness tests. It means phonological awareness has a strong relationship with reading ability, therefore is a strong predictor of reading ability both “within and across languages” (p. 461).

Although it is widely accepted by many scholars that reading and phonological awareness are related, there is no established view on the relationship of PA and spoken language (i.e., listening comprehension) since there are results supporting both sides of the discussion. The role of L2 phonology has been extensively researched by many scholars in the L2 acquisition context regarding its relationship with mostly speech production (Lado, 1957; Stockwell and Bowen, 1968; Eckman and Elreyes, 2003), although the number of studies investigating the effect of PA on L2 listening is fewer in number (Caravolas and Bruck, 1993; Li, Cheng and Kirby, 2012).

However, there are student perception studies showing that phonology is one of the sources of difficulties for language learners in listening comprehension. In one study Goh (2000) investigated the difficulties learners face when listening with 40 prep school students in a university in China. The qualitative data was collected through three sources: Weekly diaries students kept where the participants elaborated on real listening events and identified the sources of problems, semi-structured interviews and an immediate

retrospective verbalisation procedure was followed. The researcher identified five common sources of difficulties during the perception stage, among which “not being able to recognize words they know” and “not being able to chunk streams of speech” were presented. According to Goh (2000), “their ability to understand spoken words was greatly handicapped because they hadn’t stored the sounds of lexical items” (p. 61) in their memory, which clearly supports the views of Sparks on the effects of phonological weakness on listening comprehension (1995). It is suggested by Sparks (1995) that:

“Phonological processing weaknesses may also have a detrimental effect on FL learning for several reasons: (1) a student may have difficulty with the perception and production of novel phonological strings; (2) difficulties with efficient phonological processing may impede spoken language comprehension; and (3) poor reading skills in the native language will generalize to poor reading in the FL, further contributing to deficits in listening comprehension, oral expression, reading comprehension, syntax, general knowledge, and verbal memory. These resulting native language skill deficits, in turn, further contribute to poor FL learning.” (p. 209)

It is also encouraging to design a study where the relationship of phonological awareness and listening proficiency is investigated since in another study conducted with learners of Spanish as an L2, it was suggested that learners with lower levels of listening comprehension might benefit from explicit phonology instructions (Mayberry, 2006). Although the biggest limitation reported in the study was the difficulty learners have when attending to oral input long enough to keep them in their working memory, the results of the interviews conducted with experimental groups clearly showed that learners observed an improvement in their overall listening proficiency after being exposed to explicit instruction. The results of the quantitative data analysis also supported the participants’ perceptions. In a similar vein, in their study with 47 Grade 4 and 48 Grade 2 Chinese-English immersion students, Li, Cheng and Kirby (2012), investigated the effects of English (L2) PA on listening comprehension in L2. They found out that PA in English had a significant effect on English listening comprehension of both groups of students, though it was stronger for the higher age group. Another result their study revealed is that there is also a relationship between the Chinese PA of the participants and their English listening comprehension, although the effect size is only small.

To demonstrate the learners’ point of view on the topic, it is necessary to mention the study conducted by Mihara (2015) in a similar context. In another study with Japanese learners of English, Mihara (2015) investigated the effects of different pre-listening

exercises on listening comprehension. In two experimental groups and one control group, the participants received eight listening comprehension tests followed by two types of pre-listening activities, one with phonological input and one without in each of the experimental groups. Later the participants answered a follow up survey regarding their experience with the vocabulary activities they attended to as pre-listening activities. 90% of the students said they agree/strongly agree that the pre-listening activities were useful regardless of their type. In other words, both the students in the experimental group who received tasks with phonological input and the group who did not, reported that they found pre-listening activities facilitating. Interestingly, ANOVA results of the listening tests revealed nearly identical results in both experimental groups, thus providing a negative answer for their research question. In other words, phonological input did not help learners in listening comprehension.

Lastly, Park (2015) investigated the relationship between phonological awareness and the degree of foreign accents of 12 adult ESL learners in their oral production perceived by 4 native speakers in her study. The native speakers evaluated the oral production samples -which are 4 sentences of similar length- of the 12 participants on a 9-point scale with “very heavy foreign accent” at one end and “no foreign accent” at the other. The results revealed a statistically non-significant relationship between these two suggesting that a greater level of phonological awareness does not account for a less accented speech. However, the study by Park (2015) is not free from limitations. To get more reliable results, more enhanced phonological awareness tasks could have been designed to measure the learners’ sensitivity to L2 segments, clusters, syllables and prosody. Also, the human raters might have been affected by the tone, gender, or other external factors since as the researchers reported the raters did not have any experience in detecting foreign accentedness whatsoever prior to the study although they had a background in teaching English.

To conclude, there are two sides to the topic under investigation. The divergent results of the limited studies conducted in the area make it necessary to dive into explaining the nature of the linguistic inventories and their relationship to each other when how much these linguistic sources depend upon each other is considered. Therefore, in the present study the relationship between L2 listening proficiency and phonological awareness was studied to expose the situation regarding Turkish EFL context.

Table 2.1 *L2 studies investigating the contribution of phonological awareness on listening comprehension*

Study	D.Var.	Indp. Var.	Results
Mi Sun Park (2015)	Phonological awareness	Foreign accentedness in speech	The participants' level of phonological awareness in L2 does not correlate with the level of accentedness in their oral production. Their PA does not transfer into their L2 production.
Cho, Chiu & McBride-Chang (2011)	Phonological awareness, Morphological awareness	Korean spelling and English reading	Phonological awareness of the children were reported as associated with English reading, higher in the upper age group.
Mayberry (2006)	L1 Phonological awareness	L2 listening comprehension	Explicit phonological awareness instruction in L2, remarkably facilitates the overall listening comprehension of learners of Spanish as an L2.
Mihara (2015)	L2 listening comprehension, vocabulary learning	Phonological input	Phonological input did not play a significant role in vocabulary learning or L2 listening, however pre-listening activities were found to be effective regardless of the type.
Li, Cheng & Kirby (2012)	L2 listening comprehension	English and Chinese phonological awareness	The results demonstrated a bidirectional relationship between PA and listening comprehension in L2, and an indirect relationship with L1 PA in both grades. Also, they found that the effect of English PA on English listening is greater in Grade 4 than Grade 2.

Table 2.2 *Instruments used to measure phonological awareness*

Study	Participants	Instruments Measuring PA
Deacon & Kirby (2004)	Grades 2-5 (Longitudinal study)	A sound oddity task adapted from Bradley and Bryant's (1985) rhyme oddity task was utilized. In each trial, the child had to choose which of four orally presented words differed from the others by one sound (e.g., bud, bun, bus, rug). There were 30 items, 10 each for the word-initial, word-medial, and word-final positions.
Wang, Cheng, Chen (2006)	64 4 th graders, Chinese immigrant children	A phoneme deletion task with 12 items which are non-words was used. An English native female recorded the stimuli on a track which the children hear the words and then asked to imagine how would a word sound without a certain phoneme and then circle one of the three options given, ie. <i>Now listen /mab/, how would this sound without /b/?</i> 1. /ab/ 2. /ma/ 3. /ba/
Cho, Chiu & McBride-Chang (2011)	81 Korean children between Grade 4-6	Syllable, onset and coda awareness items were used in three different tests. Tasks typically involved deleting the coda or onset of the syllables.
Mi Sun Park (2015)	12 advanced adult EFL learners	A test with 7 tasks including the following was used: Segmentation, Blending, Initial consonant deletion and final consonant deletion, Word-initial cluster identification and word-final cluster identification, Nonword reading. The nonwords were taken from the ARC Nonword Database, created by Rastle, Harrington, and Coltheart (2002).
Li, Cheng & Kirby (2012)	95 Chinese-English immersion students- Grade 2 and Grade 4 individually-administered.	English Sound Detection (James, 1996, adapted from Bradley and Bryant, 1985) tests were used. The tests were designed to look at initial-sound and final-sound detection of the participants. The tests included ten test items and two practice items for both tasks.

2.3. Morphological Awareness

The purpose of this section is to review the literature related to morphological awareness with regards to its definition, and its relationship to L2 reading comprehension and L2 listening comprehension. Finally, the instruments utilized in various studies to measure morphological awareness will be evaluated.

2.3.1. Overview of morphological awareness

Morphological awareness is commonly defined as the ability to recognize the root and affixes of a word as well as to be able to generate new words using the same word formation rules in a language (Aksoy, 2015, p. 43). It provides learners a tool to overcome the difficulties arise with lack of vocabulary and grammar when reading (Bian, 2017, p. 6) and listening to texts in the target language. It is important here to draw a distinction between *morphological awareness* and *morphological knowledge*. The difference can be explained with an analogy between procedural and declarative knowledge since the former refers to what one can perform (*i.e. implicit knowledge*) and the latter to what one can explain (*i.e. explicit knowledge*). Thus, morphological knowledge is associated with procedural knowledge since it requires learners to perform the tasks to show that they possess the knowledge implicitly without further requiring them to explain the background information. In other words, one can have morphological knowledge and is capable of using it proficiently although one may not explain it when asked. Morphological awareness, on the other hand, indicates that learners can both “reflect on, analyse and manipulate the morphemic elements in words” (Carlisle, 2010, p. 466).

However, to better understand morphological awareness it is first necessary to look at the components and terms highly associated with morphological awareness. The first term one comes across when discussing morphology is *morpheme* which can be defined as the smallest meaningful and transportable unit that also has a grammatical function (Katamba, 1993). Morphemes are internally stable, which means their unity can never be compromised by means of interposition of other units in a morpheme (Brinton, 2000). Knowledge of English morphology begins to develop in the preschool ages and by the time children come to first grade, they are likely to properly use some rules of inflection according to Berko (1958). Continuous exposure to meaningful input provides that children implicitly learn the words and their inflections and by the time they reach grade eight, they have seen and heard such a great amount of complex structures that it is

inevitable that there occurs a notable development in their derivational morphology knowledge and that knowledge becomes vital for the lexical improvement of these learners, also indirectly for their listening comprehension skills (Anglin, Miller & Wakefield, 1993; Smith, 2015). A growing body of research in ELT has focused on the relationship between morphological awareness and reading comprehension. The results of these studies provided evidence that MA is a significant contributor and a predictor of reading comprehension, both in L1 (Deacon & Kirby, 2004; Foorman, Petscher, & Bishop, 2012) and L2.

According to one study conducted by Droop and Verhoeven (2003) in Netherlands with 163 Dutch, 72 Turkish and 67 Moroccan children, although the minority children scored relatively lower than Dutch children, there is a moderate correlation between L2 learners' performance on the reading comprehension and morphosyntactic knowledge, which were subsequently reported at .86, .70, and .67 in the three measurements. Morphosyntactic knowledge of both L1 learners and L2 learners was also reported to have increased between the measurements at the beginning of the 3rd grade and at the end of the 4th grade. They utilized a national test called "*TAK Onderbouw*" to measure morphological awareness, which consists of 42 questions. In this test, children looked at the pictures shown to them and then the researcher gave an example sentence and asked the child to apply the conjugation of past simple and past perfect tenses, pluralization or pronominal reference to the second sentence. In the same vein, another study by Deacon and Kirby (2004), which started with 143 children in Grade 2 and ended up with 103 children in Grade 5, showed that morphology has a small but statistically significant effect on reading comprehension, which is reported at .702, .639, .659, and .614 respectively starting from the first measurement in 2nd grade at the beginning of the study, then at 3rd, 4th and 5th grades. Nunes et al. (1997a, 1997b) Sentence Analogy task was utilized to measure morphological awareness in this study. Some of the items are like the following example:

"Peter plays at school. Peter played at school.

Peter works at home. Peter _____."

All participants were presented with a trial and if they failed to provide the correct answer, the researchers explained the question. The 8 items in this task all involved regular and irregular past tense verbs.

However, one drawback of the study by Droop and Verhoeven (2003) might be that all the measurements were in multiple choice format and written in L2, therefore some of the data could be explained by the choice of instrument and the test language. Likewise, performances of these children on their L1 were not of interest for this study, therefore it may account for the lower standards and the moderate correlation between the two factors under investigation. On the other hand, in this study minority children have been reported to have resided in the country of L2, Netherlands, for most of their lives, which adds to the credibility of the data obtained from the study. Another limitation regarding the study conducted by Deacon and Kirby (2004) could be that although the measures were of high reliability, they covered only past tense. A broader collection of inflection and derivation might result in a broader variance.

In another study with 64 Chinese immigrant children who are 4th graders, Wang, Cheng and Chen (2006) tried to find out a link between children's morphological awareness and their reading comprehension skills in two writing systems, therefore interested in a cross-linguistic relationship. The participants were tested on both derivational morphology and compound-structure in English and in Chinese. The results showed that both measures of morphological awareness had a significant contribution to reading comprehension regardless of the participants' age, English proficiency levels, lexical knowledge or phonological awareness. This study is particularly highlighting, since in the previous literature distinct roles of derivational morphology and compound-structure knowledge were not compared to each other, the results of the study by Wang et al.(2006) showed that compound morphological knowledge explained a higher percentage of reading comprehension. However, this study is also not free from limitations. Relatively few numbers of participants, the reliability scores of the Chinese measures, and the procedure of data collection can be pointed out among some flaws of the study by Wang et al. (2006).

In summary, the studies annotated suggest there is a link between morphological awareness and reading comprehension both in the second and in the foreign language. Although there are contradicting results regarding the magnitude of the effect of morphological awareness on reading comprehension in the studies reported above, those contradictions can easily be attributed to the lack of a standard among the methodologies of these studies. In other words, the reason behind the inconsistent results may stem from

the number of participants, the nature of instruments, the data collection procedure and even testing environment. Some of these studies investigated the phenomena among minority children, some others conducted the study with foreign language learners and some with second language learners. Even though the controlled variables, testing instruments and the procedure show a great variety in each study, they all reported that L2 reading comprehension is affected by morphological awareness of the learners.

After presenting the role morphological awareness has in learning to read, it is necessary to look at its relationship with listening comprehension in second language learners. As it is believed that learning how to read in a language is mostly being able to recognize spoken sounds and their representation in the written language (Koda, 2005), the question whether L2 morphological awareness is a contributor of L2 listening comprehension as well arises when the close link between L2 reading and listening comprehension skills is considered. For this reason, in the next section, the studies conducted on morphology and listening in the last three decades are reviewed.

2.3.2. Morphological awareness and listening proficiency in foreign language

In the past three decades, studies conducted on morphological awareness focused on its relationship and literacy while the relationship between MA and listening proficiency has attracted meager attention among researchers. However, in many Simple View of Reading (SVR) studies, L2 listening comprehension have been found as the most significant contributor of L1 and L2 reading comprehension, with as high a %76 of the reading variance explained by L2 listening only (Adlof et al., 2006; Jonhson et al., 2005; Joshi & Aaron, 2000). Also, Proctor et al. (2005) and Droop and Verhoeven (2003) both suggested that L2 listening comprehension is a strong predictor of L2 reading comprehension. Also, in some prior studies conducted to reveal the nature of the relationship between MA and reading comprehension, listening comprehension ability is a controlled variable (Droop & Verhoeven, 2003). Findings from some of these limited studies suggest there might be a relationship between MA and L2 listening comprehension ability, which makes to review the existing literature an interesting necessity.

One of the studies that argued that morphological awareness and listening comprehension skill might actually be related to each other was conducted by Droop and

Verhoeven (2003). According to the study by Droop and Verhoeven (2003), there is a high correlation between their performance on the oral text comprehension and morphosyntactic knowledge, which were subsequently reported at .66, .97, and .70 in the three measurements. Similarly, according to Rost (2011), word recognition and syntactic parsing in fluent speech, in which morphological knowledge is of salience, are of critical importance in spoken language comprehension. On the one hand, to be able to recognize words, learners need morphological knowledge, which provides them with a relational database for part of speech, word forms and collocations with other words (Lonneker-Rodman & Baker, 2009). On the other hand, FLLs use their morphological knowledge to be able to create a meaningful and grammatical output from streaming speech by mapping the input onto a grammatical model of language with the help of numerous syntactic and morphological cues (Baggio, 2008; Bian, 2017; Rost, 2011). Among studies that support the same view, Jeon (2011) reported a significant correlation ($r = .527$, $p < .01$; $r = .416$, $p < .01$) between the scores of two morphological tests and the listening test in her study with Korean EFL high school students. In yet another study, Karimi (2013) attempted to investigate the relationship between FLLs' listening transcription ability and morphological awareness. After the independent samples t-test results, data showed that MA is a strong predictor of L2 listening comprehension, since it suggests a link between listening transcription and morphological awareness. Lastly, Li and Kirby (2014) attempted to find out what factors help distinguish unexpected poor comprehenders, expected average comprehenders and unexpected good comprehenders from each other. They found out that both listening and morphological awareness play a notable role in the process although the direct relationship of the two factors is not investigated.

However, in another study by Kieffer, Biancarosa, and Mancilla-Martinez (2013), morphological awareness is reported to have no contribution to listening comprehension of L2 learners. The reason behind the contradictions in the prior studies could be the result of different measuring instruments used to test morphological awareness and listening comprehension. For instance, in the study by Kieffer et al. (2013), the test batteries used to measure the listening and reading comprehension were taken from the same battery. They could have been taken from an independent measure of English language proficiency to obtain more reliable results. Another flaw of the aforesaid study is the relatively few numbers of the participants. In addition to those, another reason of the divergent results could be the fact that in the studies guided by Kieffer et al. (2013) and

Droop and Verhoeven (2003) the listening tests did not involve any written cues but in Jeon's (2011) it did (Bian, 2017). Also, in the study by Kieffer et al. (2013) and Jeon (2011), MA measures have targeted the derivational awareness but the former preferred to use sentence completion by using derivational words while the latter employed isolated derivational words. Droop and Verhoeven, on the other hand, made use of plurals, conjugation of verbs and pronominal reference.

In summary, the number of the studies demonstrative of a positive correlation between L2 morphological awareness and listening comprehension outnumbers the ones which account for no relationship at all. The variance in the results can be derived from different measuring instruments utilized in the previous research or the nature of those instruments or even the design of the study itself. Consequently, it would not be wrong to say that, even though the relationship between these two skills has not drawn much attention so far, the overview of the literature suggests a link regarding a positive relationship of the two. Researchers agree that morphological awareness contributes to FLLs' word recognition, syntax and lexical improvement, therefore to their reading comprehension (Bian, 2017). The mentioned skills can be count as the foundation skills for each of the four essential language skills, including listening comprehension and, perhaps it is not too wrong to say that morphological awareness can also be one of the predictors of L2 listening comprehension. It should also be noted that, in the existing studies, the participants are from a lower proficiency range although the literature suggest the link between advanced learners' MA and listening proficiency. Therefore, when designing further research these points should be taken into consideration.

Table 2.3 *L2 studies investigating the contribution of morphological awareness to listening comprehension*

Study	D.Var.	Indp. Var.	Results
Droop & Verhoeven (2003)	Reading Comprehension	Lexical knowledge, morphosyntactic knowledge, oral text comprehension skills and word decoding skills.	There is a high correlation between their performance on the oral text comprehension and morphosyntactic knowledge.
Jeon (2011)	L2 listening comprehension	L2 morphology	The data showed a significant correlation between the scores of two morphological tests and the listening test.
Karimi (2013)	Listening transcription in L2	L2 morphology	Data from the study showed that MA is a strong predictor of L2 listening comprehension, since it suggests a link between listening transcription and morphological awareness.
Kieffer et al. (2013)	L2 listening comprehension	L2 morphology	Morphological awareness is reported to have no contribution to listening comprehension of L2 learners.
Li and Kirby (2014)	L2 reading comprehension	L2 listening comprehension, vocabulary breadth, inference and strategy	They found out that both listening and morphological awareness play a notable role in the process although the direct relationship of the two factors is not investigated.
Bian (2017)	L2 listening comprehension	L2 morphology	The results supported that MA is a strong predictor in L2 listening comprehension.

Table 2.4 *Instruments used to measure morphological awareness*

Study	Participants	Instruments
Droop & Verhoeven (2003)	3rd and 4th graders. Dutch L1, Turkish and Moroccan L2 learners	A national test called “ <i>TAK Onderbouw</i> ” which investigates the children’s knowledge of past simple and perfect tense conjugations, pluralization and pronominal reference, consisted of 42 items was used. Example items from the test: (a) <i>In this picture you see one apple. In this picture you see two...;</i> (b) <i>Yesterday, I saw John drinking a glass of milk. He was very thirsty when he...</i> (Please finish the sentence).
Deacon & Kirby (2004)	Grades 2-5 (Longitudinal study)	Nunes et al. (1997a, 1997b) Sentence Analogy task was utilized to measure MA. For example, “ <i>Peter plays at school. Peter played at school.</i> <i>Peter works at home. Peter _____.</i> ” Children were first given a practice trial; if they did not provide the correct answer, the example was explained to them. The 8 items in this task all involved regular and irregular past tense verbs.
Wang, Cheng, & Chen (2006)	64 4 th grader Chinese immigrant children	A derivational morphology task and a compound-structure task which was adapted from Berninger and Nagy (1999) were used, i.e. <i>Which one is a better name for a grass full of bees, a grass bee or a bee grass?</i> (compound-structure task) “ <i>The smoke in the room was very _____</i> ” (<i>dense</i>) (derivational morph. task)

2.4. Phonological Awareness and Morphological Awareness

The relationship between morphological awareness and phonological awareness is a complicated relationship. *Morphemes* are the smallest meaningful units in a language while *phonemes* are the basic speech sounds in a language that help readers recognise words (Hayes, 2009). The two type of awareness are quite intricately related since morphemes are made up of phonemes in the first place (Clark, 2017). To illustrate, *cat* and *bat* are different words simply because /k/ and /b/ are distinct phonemes in English language. Also, one phoneme may represent more than one letters, or one letter may represent more than one phoneme in a word (Clark, 2017). For example, the letter ‘x’ in ‘mix’ represents two distinct phonemes, /k/ and /s/ at the same time; while ‘ee’ in ‘beef’ can be represented with only one phoneme, /i:/.

According to some studies, phonological awareness and morphological awareness are two skills that are significantly correlated with each other (Nagy et al., 2003, 2006; Kuo & Anderson, 2006). Moreover, some studies even suggested that some disabilities in reading can easily be traced back to simple phonological deficits in children learning their L1 (Morris et al. 1998). At this point, a crucial question whether morphological awareness makes a difference in students’ reading ability on its own, or its effect is only attributable to the effect of phonological awareness arises. There are two opposite viewpoints regarding the intricate relationship among phonological awareness, morphological awareness and reading. One view suggests that the effect of morphological awareness on reading is “secondary to and derivative of phonological awareness” (Fowler & Liberman, 1995). On the other hand, some claim that morphological awareness has its own distinct impact on reading ability, in direct proportion to increasing age of the learners (Singson, Mahony, & Mann, 2000). When the fact that English writing system is not exclusively alphabetic is taken into consideration, both hypotheses are plausible.

To demonstrate how the alternative hypothesis is plausible, Nagy et al. (2006), investigated the effect of morphological awareness has on reading, distinctive of phonological abilities of the participants. They collected data from 604 students enrolled in Grade 4 to grade 9 in a state school in northwest of America. The researchers used structural equation modelling, in which it is assumed that all the independent variables distinctively contributed to the dependent variables to analyse the data. In this case, the researchers assumed that phonological awareness and morphological awareness each

contributed to the literacy outcomes of the participants. Their findings showed that morphological awareness is a unique contributor to all outcome measures for at least one of the groups took part in the study (Nagy et al., 2006).

Similarly, in a study by Deacon and Kirby (2004), researchers investigated the effect of phonological awareness, morphological awareness and verbal or non-verbal intelligence has on reading comprehension in their study with 103 children from Canada. They utilized a rhyme oddity task they adapted from Bradley and Byrant (1985) in which the children had to choose the odd one with one different sound among the four phonologically similar words. The test consisted of 10 items for each of the words with word-initial, word-medial and word-final positions, making a total of 30 items and 2 practice questions before each section, which enables the learners to get themselves ready for each type, therefore is a good sign of reliability. One important conclusion this study revealed could be that the effect of morphological knowledge has on reading comprehension is either comparable or greater than that of phonological awareness in each measurement. In other words, morphological awareness is not only a deeper level of phonological awareness, but it has a distinct role in reading comprehension.

On the other hand, there are other factors effecting the comparative significance of the two types of awareness on reading. The type of morphological change a lexical item undergoes is observed to be an important consideration. More specifically, according to Nagy et al. (2006), only when the reading words were phonologically opaque the morphological awareness had a more significant unique contribution to them. This means, phonological transparency is an important element in deciding which of these two types of awareness are more important, although it does not necessarily mean that phonological awareness simply more important because it explains a bigger amount of unique variance in reading scores when compared to that of morphological awareness. It is true that phonological complexity masks the morphological relationships. As a result, it might be more challenging for students to notice the morphological relationship between “courage” and “courageous” than the relationship between “mountain” and “mountainous”, but the additional difficulty may make the former pair a better morphological awareness measure rather than making it a measure of phonological awareness (Nagy et al., 2006).

In conclusion, the effect of morphological awareness has on reading comprehension can be seen either as an isolated significance or as dependent on phonological awareness

based on a combination of other related factors, or dependent on the type of phonological change (Clark, 2015). When the studies described above are taken into consideration, it seems that students process and respond to morphologically complex words differently depending on whether they are phonologically transparent or shifted. For this reason, “it is important to control phonological transparency in measures of morphological skill and then investigate how the measure relates to reading skill” (Clark, 2015, p.13) By inspecting these two linguistic components and their relationship to each other, this study aims to reveal the role of both knowledge sources in learning to listen in a foreign language.

3. METHODOLOGY

This chapter is devoted to methodology of the current study. Firstly, the setting in which the study took place is described along with a short introduction of the participant profile followed by a detailed introduction to each of the data collection instruments. Later in the chapter, the data collection procedure is explained and finally the data analysis methods are discussed.

3.1. Research Design

This study was designed as a descriptive and correlational study where the objective was to formulate instrument-based questions to measure performance-based data through a means of statistical analysis methods. Creswell (2002) defines correlational study as follows:

“Correlational designs are procedures in quantitative research in which investigators measure the degree of association (or relation) between two or more variables using the statistical procedure of correlational analysis. This degree of association, expressed as a number, indicates whether the two variables are related or whether one can predict another. To accomplish this, you study a single group of individuals rather than two or more groups as in an experiment.” (Creswell, 2002, p.337)

In this type of research, the investigators do not control, manipulate or change the numerical data obtained via instruments unlike how it is done in experimental designs. The aim is to find a relationship between two or more scores of the same participant utilizing correlational statistics following the rules of one of the two types of correlational designs, namely explanatory and prediction designs (Creswell, 2002). The present study adopted an explanatory design which is defined by some authors as “relational” (Cohen & Manion, 1994, p. 123) or “accounting-for-variance studies” (Punch, 2013, p. 78). As the name suggests, in explanatory designs, the researcher focuses solely on “the extent to which the two variables co-vary” (Creswell, 2002, p.340). Therefore, as suggested by Creswell (2002), the procedure that should be complied with is as follows in an explanatory correlational design:

- Correlating two or more variables
- Collecting data from participants at a time
- Obtaining a set of data for each of the variables in the research design (at least two scores to be able to correlate)

- Analysing the data as a single group (rather than control vs experimental groups)
- Reporting the function of each correlation statistical test
- Interpreting the findings and providing a comprehensive discussion from test results

In accordance with the definition of the methodological design adopted in this study, the data from 54 2nd year ELT students were collected through IELTS, PAT and MAT tests to be analysed through both descriptive and correlational statistical tests and reported using histograms, scatterplots and a correlation matrix.

3.2. The Setting and Participants

The study took place in the Department of English Language Teaching (ELT) in Anadolu University during the Spring term of the academic year 2018-2019. The students who apply to this program are required take a language proficiency exam before they are accepted to the programs and, if necessary, they attend the Language Preparatory Program which offers a one-year intense language teaching.

The ELT department in Anadolu University offers courses that support their communicative skills during the first year as compulsory courses within the context of their field training for all students. Among these compulsory courses, in 2017 and 2018, when the participants of the present study were enrolled in the 1st year program in the department, there were two courses aiming at developing the learners' listening skill, which were INÖ 135 Listening Comprehension and INÖ 136 Listening Comprehension and Note Taking. These courses were offered in the Fall and Spring semester successively. By the end of INÖ 135 Listening Comprehension, students were expected to recognize various forms of questions and note down numbers heard during speech, distinguish reductions and intonations as well as recognizing idioms in fluent speech. They were also expected to be able to find the main idea, supporting ideas and details in a listening activity as well as making inferences and taking notes. Below a summary of the course objectives can be found.

Learning Outcomes

- be able to recognize various questions and numbers
 - Responds to various question types.
 - Notes down numbers they hear.
- Distinguishes reductions and intonation, and recognizes idioms.
 - Define reductions in speech.
 - Distinguishes intonation.
 - Expresses idioms.
- Takes notes effectively.
 - Defines main ideas, supporting ideas, and details.
 - Makes inferences.
 - Organizes notes.

Figure 3.1 *INÖ 135 Listening comprehension course objectives taken from <http://abp.anadolu.edu.tr/tr/program/dersler/162/13>*

Similarly, in INÖ 136 Listening Comprehension and Note Taking, students were guided about being able to recognize abbreviations, symbols and they were also presented some listening strategies such as note-taking, predicting, extracting specific information from statistics, comparing information and problem solution.

Learning Outcomes

- Recognizes and uses abbreviations and symbols.
 - Recognizes symbols and abbreviation.
 - Uses symbols and abbreviations while taking notes.
- Takes notes effectively.
 - Recognizes sequence markers, examples, key terms and definitions, cause-and effect relationships, lists, numbers and statistics, comparison and contrast, problem-solution relationships.
 - Marks important information and organizes notes

Figure 3.2 *INÖ 136 Listening Comprehension and note taking course objectives taken from <http://abp.anadolu.edu.tr/tr/program/dersler/162/13>*

In addition to these, during their second year the students are introduced to Linguistics I in the Fall semester, and Linguistics II in the Spring semester. In Linguistics

I, they are provided with the basics of phonetics, which deals with the sounds of English Language, and phonology, which analyses the sound patterns in English language. Later in Linguistics I, words and word formation processes and morphology, phrase structures, syntax and semantics are covered. Lastly, in their fourth semester in the program, the students are required to take Linguistics II, which offers detailed discussions on various topics such as pragmatics, discourse analysis, language, society and culture, language variations and language history and change. In addition to the compulsory courses, the department offers a range of elective courses called English Sounds and Pronunciation I and II, along with Contrastive English-Turkish Phonology and Morphology where the students are provided with further access to the analysis of the linguistic components under investigation for the purposes of the current study.

With the purpose of assessing adult Turkish EFL learners' L2 phonological and morphological awareness levels as well as determining their relationship to L2 listening comprehension, students who are enrolled in the second year of the ELT program at the undergraduate level has been chosen regarding the curriculum of the program. Also, the Spring term has been decided as the data collection period as the students in their fourth semester, have taken Listening Pronunciation I and II and Linguistics I and II, which cover the skills and two types of awareness under investigation. For this purpose, ELT students from 6 different sections among 2nd year classes were chosen as the participants of the current study according to convenience sampling method (Creswell, 2002).

3.3. Data Collection Instruments

To determine the participants' phonological and morphological awareness in correlation with the listening comprehension, the quantitative data was collected. To ensure the reliability and validity of the study, data triangulation was adapted through three data collection instruments; namely, the listening section of a sample IELTS test and Morphological Awareness Test (MAT) (Aksoy, 2015) and Phonological Awareness Test (PAT), which was developed and validated in the study.

3.3.1. Listening comprehension test (IELTS)

Listening section of an IELTS test was used to determine the listening proficiency levels of the participants. It consisted of four sections of 10 question each and 40 questions carrying one point each in total. There are various tasks learners need to do in

each section. In the IELTS test used in the current study, Recording 1 was a conversation between two people set in an everyday social context. The questions in this section from 1 to 10 targeted to measure the students' ability to complete notes with either words or a number. Recording 2 was a guidance counsellor talking to a group of students and the questions from 11 to 14 asked the participants to choose one answer among three options and questions between 15 and 20 required table completion with no more than two words for each answer. Recording 3 was a conversation between a tutor and two students who are preparing for an English literature test and in this part students answered questions 21 to 30 by completing notes about the novel the tutor was talking about with no more than three words for each answer. Finally, Recording 4 was a talk on the topic of time perspectives. The questions from 31 to 35 were table completion and the questions between 36 and 40 were multiple choice listening comprehension questions. At the end of the test, all the participants were given extra time to transfer their answers to a separate answer sheet where their scores were later given by the researcher following the provided answer key.

The recordings were presented separately on the British Council's website, though they were put together in an order using a free audio software that can edit listening tracks for the exam purposes. All the recordings were only heard once and the speakers' accents varied in each recording, including British, Australian, New Zealand, American and Canadian accents. The tasks in the test included various question types as indicated above such as sentence completion, table completion, matching, note completion and multiple choice.

The fact that IELTS test is accepted as a valid and reliable testing instrument all around the world played an important role in the decision-making process for the purpose of the current study. The IELTS test approach is recognised as fair to test-takers and ensure consistent results in each assessment. The questions are unbiased and focused on assessing real communication abilities of the test takers from all cultural backgrounds. According to British Council's website, it is recognised and accepted as a fair indicator of one's English language proficiency level. Appendix A shows all sections of the IELTS test used in this study. Original audio can be reached through the following link: <https://takeielts.britishcouncil.org/prepare-test/free-ielts-practice-tests/listening-practice-test-1>

3.3.2. Phonological awareness test (PAT)

According to scholars there are two threats to the validity of a phonological awareness test. The first one is the fact that most published tests target the broader, simpler levels of phonological awareness, therefore, falls short on revealing the real situation rather than testing the more discrete abilities of the learners (Cassady, Smith and Huber, 2005). A detailed literature review on the topic of phonological awareness revealed various levels phonological awareness can be explained and certain task types that can be used to measure the awareness under investigation. Each task type was chosen carefully to represent the different complexity levels of the phonological awareness as discussed earlier in the literature review. As a result, the researcher put 6 different tasks together based on the task types presented in Cassady et al. (2005) and Ehri et al. (2001). One of the aims of this study is to reveal the nature of the relationship between foreign language listening proficiency and phonological awareness; therefore, a listening version of a phonological awareness test was needed rather than a pen and paper phonological awareness test, which brings up the issue of the second threat to the validity of a phonological awareness test. Second threat regards mostly the variations of orally presented prompts in each test. Cassady et al. (2005) advocates the idea that without pre-recorded testing materials, the validity of the test is unavoidably compromised. Therefore, the test used in the present study is voiced by a native speaker of English. The recording took place in a professional recording studio; therefore, the quality of the voiced material was also ensured.

In order to ensure the validity of the researcher-designed test, expert opinion was sought. Two full professors who are currently working in the ELT department and two colleagues, one of whom is currently pursuing a doctorate degree in the ELT department, gave their opinions on the task types and test items. In addition, a British colleague reviewed the last version of the test developed by the researcher before recording. Questions number 11, 14 and 20 were excluded from the scale by the SPSS program when calculating the reliability score since each of the mentioned components had zero variance and Cronbach's alpha was calculated to be $\alpha = .693$ for the PAT, which indicates a fair amount of internal consistency as can be seen in Table 3.1 below.

Table 3.1 *Reliability Statistics of PAT*

Reliability Statistics		
Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N
.693	.706	27

The whole test took 13 minutes to complete. After each task type, an example was given for the students to get themselves familiar with the new question and task type. The instructions, example questions and options in multiple choice parts were read aloud by the native speaker but the test takers saw only the options to eliminate the possible clue orthographic knowledge might provide for the test takers. The test consisted of 30 questions, five in each part making the maximum score that can be obtained in this test 30 and they heard every question only once. After each section there was a ten-second break for the test takers to check their answers in that section.

The phonemes tested in each section were chosen among a list of most commonly occurring phonemes in the English language using an online “repository of cross-linguistic phonological inventory data, which have been extracted from source documents and tertiary databases and compiled into a single searchable convenience sample”, namely “PHOIBLE 2.0” (Moren & McCloy, 2019) along with a scholarly article by Hayden (1950) which acted as a supporting source. Below can be found an example of the output from PHOIBLE 2.0 website. On the left side, the segment class of the phoneme is given, and on the rightest end one can observe the frequency of the phoneme in RP English. Phonemes from varying frequency levels were targeted, therefore each phoneme was searched on the tool before further moving on to the item generation process for the selected phonemes.

Inventory English (RP) (EA 2252) [©]

Segment list [IPA chart](#)

Showing 1 to 2 of 2 entries (filtered from 44 total entries) ← Previous 1 Next →

Segment class	Segment	Marginal	Allophones	Representation
--any--	f	False	Search	Search
consonant	f	False		1218 (40%)
consonant	t	False		403 (13%)

Figure 3.3 *Sample output from PHOIBLE 2.0*

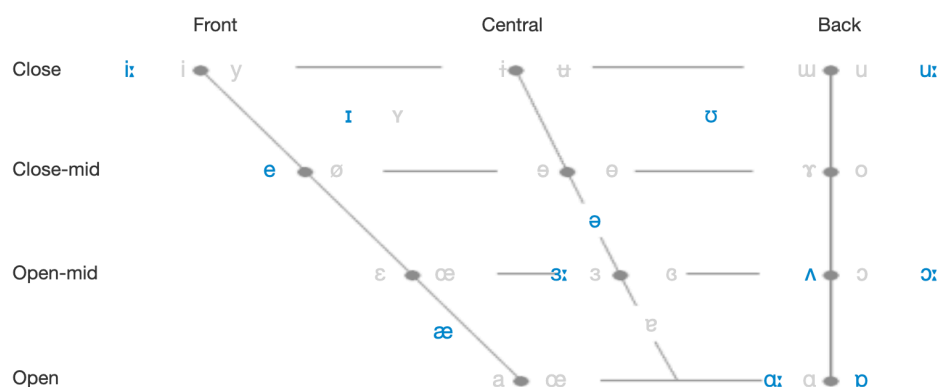
Once the phonemes in each section was decided, items were generated as to include that phoneme and the distractors were chosen from minimal pairs or sounds that are close to each other on the IPA chart shown below. For instance, when testing /p/ distractors included /b/ since both are plosive bilabials. Similarly, when testing /t/, /d/ was given in the distractors since both are defined as plosive alveolar consonants according to the IPA chart.

Consonants (Pulmonic)

	Bilabial	Labiodental	Dental	Alveolar	Postalveolar	Retroflex	Palatal	Velar	Uvular	Pharyngeal	Glottal
Plosive	p b		t̪ d̪	t d		ʈ ɖ	c ɟ	k ɡ	q ɢ		ʔ
Nasal	m	ɱ	n̪	n		ɳ	ɲ	ŋ	ɴ		
Trill	ʙ		r̪	r					ʀ		
Tap or Flap		ɸ β	ɾ̪	ɾ							
Fricative	ɸ β	f v	θ ð	s z	ʃ ʒ	ʂ ʐ	ç ʝ	x ɣ	χ ʁ	ħ ʕ	h ɦ
Lateral fricative				ɬ ɮ							
Approximant		ʋ		ɹ		ɻ	j	ɰ			
Lateral approximant			ɻ̪	l		ɭ	ʎ	ʟ			

Where symbols appear in pairs, the one to the right represents a voiced consonant. Shaded areas denote articulations judged impossible.

Vowels



Where symbols appear in pairs, the one to the right represents a rounded vowel.

Figure 3.4 IPA chart demonstrating consonants and vowels in RP (PHOIBLE 2.0 edited by Moran, Steven & McCloy, Daniel)

Vowels were also decided using the same chart and the distractors included diphthongs as well as monophthongs. To illustrate, when testing /ʌ/ which is defined as a back and open-mid monophthong, /æ/ was given in the distractors since it is close to open-mid but near-front. After all the items were decided, expert opinion from two professors and a native speaker was sought. Following the feedback some items were modified, and the test was finalized. All in all, 34 out of 44 of the phonemes in the phonemic chart below

were included in the test, either as target items or as distractors to those target items in the final version of the PAT.

The Phonemic Chart

V O W E L S	i:	ɪ	ʊ	u:	ɪə	eɪ	D I P H T H O N G S	
	green	pink	wood	blue	clear	grey		
	ɛ	ə	ɜ:	ɔ:	ʊə	ɔɪ		oʊ
	red	silver	purple	fawn	pure white	turquoise		yellow
	æ	ʌ	ɑ:	ɒ	ɛə	aɪ	ɑʊ	
	black	rust	khaki	orange	fair	sky blue	brown	

C O N S O N A N T S	p	b	t	d	tʃ	dʒ	k	g
	Poland	Burma	Thailand	Denmark	China	Germany	Korea	Greenland
	f	v	θ	ð	s	z	ʃ	ʒ
	France	Vietnam	South Africa	The Philippines	Singapore	Zambia	Russia	Malaysia
	m	n	ŋ	h	l	r	w	j
	Mexico	Norway	Hong Kong	Hungary	Laos	Romania	Wales	Yugoslavia

Cathy Viazani © NSW TAFE Commission 1993

<http://www.emmaclarke.com>

Figure 3.5 *The Phonemic Chart*

In the first part, the task that represent the phonological awareness at the rhyme recognition level was introduced. In the rhyme recognition part, the students heard a word and they were required to circle another word that rhymes with the word they heard among the four options. This part consisted of five multiple choice questions. An example from this section can be seen below. The word written in bold was only heard and the options were both heard and read by the students. In each question a different phoneme was tested. The phonemes tested here were /t/-/d/, /k/-/t/, /eə/-/r/, /p/-/b/ and the difference between the /ɪz/-/s/-/z/ forms of plural 's'.

	A	B	C	D
2. shake	<i>eight</i>	<i>snack</i>	<i>snake</i>	<i>Paint</i>

In the second part, the tasks that are at the rhyme application level were introduced. Test takers first heard a word and they were asked to write that word in the first blank space, then they needed to come up with another word that rhymes with the word they heard in the second blank. This part aimed to measure their rhyme awareness at the production level. There were five questions with two options in each. The students

got half a point from each part if they provided both the word and the rhyming word. The phonemes tested here were as follows; /t/, /ə/, /eɪ/, /ŋ/, /ɪə/ and /k/. An example from this part can be seen below.

e.g. _____ **hat** _____ rhymes with _____ **cat** _____.

The third part aimed to measure their awareness of the beginning sounds in different words. In this part, the test takers heard four different words. Three out of four options started with the same sound and they needed to choose the word that starts with a different sound. In this part, the test takers both saw and heard the options to eliminate the effects of individual differences in their own pronunciation. The fourth and the fifth parts similarly targeted the ability to detect the odd sound among four options, in the final position and in the middle position of a word. The phonemes that were tested in these parts were as follows; /f/-/p/, /r/-/w/, /l/-/n/, /s/-/ʃ/, and /θ/-/t/ in Part 3; /θ/-/ð/, /d/-/t/, /m/-/n/, /aɪ/-/ʌ/ and /ŋ/-/dʒ/ in Part 4 and finally /ʌ/-/æ/, /ɔ:/-/oʊ/, /ʊ/-/ʌ/, /ɔɪ/-/ɪ/ and /aʊ/-/əʊ/ were the phonemes tested in Part 5. The sample question below can display the type of tasks the students saw. The bold underlined part in the question clearly showed the students which position they should look at in each of these parts.

*e.g. milk, book, bank, break. “**Milk**” starts with a different sound. Which word below **starts with a different sound?***

- a. Crown b. Cruise c. Celebrity d. Cream*

The last part of the PAT consisted of five exercises that target the ability to blend phonemes of a word and recognise it among the four options given. In this part, the students heard each phoneme of a word distinctively and they were asked to circle the word they heard. After each phoneme, the speaker paused for two seconds and articulated the next phoneme. Among the words used in this part, there were three-phoneme words, four-phoneme words and a one-phoneme word. All the target words in this part were only heard, and the options were both heard and seen by the test takers. Below can be found an example from the recording version of the PAT.

	A	B	C	D
e.g. /'k/, /əʊ/, /t/	coke	cute	coat	Goat

3.3.3. Morphological awareness test (MAT)

Morphological awareness test used in this study has two sections, which are Sentence Completion and Word Relation respectively. The Sentence Completion part has 27 multiple-choice items. The aim of this part was to determine if the participants have the lexical and grammatical awareness of certain suffixes commonly used in English language (Aksoy, 2015). For this purpose, 9 suffixes had been chosen as target items and these suffixes were presented as attached to pseudo-words that are compatible with the word formation rules of English language. The suffixes tested in this part are as follows: **-tion, -ist, -(i)ty; -ate, -ize, -fy and -ous, -ive, -al**, which make nouns, verbs and adjectives successively. The reason why these specific derivational suffixes were tested is that they are among the most common 20 suffixes in English (White, Sowell & Yanagihara, 1999; Fry & Kress, 2006, Aksoy, 2015). The choice of pseudo-words in this section can be explained with the problem it would create in terms of testing principles. When the test takers see a real word, their lexical knowledge might interfere with the target awareness that is under inspection, therefore the correct answer might reflect their vocabulary knowledge rather than measuring their awareness on suffixes tested. On the other hand, when they see a pseudo-word, the only thing they can focus on is the derivational suffix at the end of the word. Hence, a correct answer would reflect a tacit knowledge of which derivational suffixes function as noun-makers, adjective-makers or verb-makers.

The test items in the *Sentence Completion Part* were adapted from Mahony (1993) with minor adjustments. In each question, the test takers saw a sentence with a blank and four options consisted of four different suffixes attached to the same pseudo-root. As can be seen from the example below, test takers needed to complete the sentence by choosing the most appropriate word and suffix combination depending on their knowledge of lexical and grammatical functions of the suffixes presented in the questions.

1. In spite of his _____, he did a great job.

*A. dispribize B. **dispribation** C. dispribational D. dispribify*

Word Relation part was the second part of the MAT, in which the test takers were presented with a list of 20 word pairs and asked to decide if the second words in each pair are derived from the first words of each pair. As shown in the following example from the test, the students need to circle the word YES if they think the second word comes

from the first word, and they need to circle NO if they think there is no derivational relationship between the two words in the pair. Before the real test items, the students saw two practice items to make sure they understood what they were expected to do. There were 9 pairs that are derivationally related and 11 pairs that were not related at all.

<i>Practice Items:</i> <i>creative - creativity</i>	YES	NO	(Related)
<i>part - party</i>	YES	NO	(Unrelated)

Each question in the MAT was worth 1 point, making the maximum score that can be obtained from the test 47 and the students were not penalized because of their wrong answers. Since the test was developed by Aksoy, she had applied for expert opinion at the time she developed the test as part of her master's thesis. Four ELT professors had given their opinions on the test and necessary changes had been made after receiving feedback from experts. In addition, MAT was found to be internally consistent as a result of statistical analysis with a Cronbach's $\alpha = .78$, indicating that all items in MAT might be accepted to measure the same construct (Aksoy, 2015). Appendix B shows both sections of the Morphological Awareness test.

3.4. Data Collection Procedure

Data collection procedure took two weeks in the Spring term of the educational year 2018-2019 once the permission was granted by the research ethics commission. All the participants were first informed about the study and they signed the forms acknowledging that they voluntarily took part in the study. Following this step, all the participants in each of the six groups first took the IELTS Listening Test in one session, then they took the two awareness tests, PAT and MAT in another session within the same week to ensure the best possible results. In each test, students were given instructions in Turkish as well before the tests begin. IELTS took 27 minutes and at the end of the test the participants were asked to transfer their answers to an answer sheet attached at the end of their booklets. In the second sessions, they first sat for the PAT, which took 12 minutes. In each classroom the researcher explained the tasks to the students since all the tasks were new to the students. When the audio track stopped, they were given instructions regarding MAT. In the MAT, the students were told that they would see pseudo-words and they should use their suffix knowledge and the researcher did the practice items as a whole class activity with each group.

During the listening tests in each session, the quality of the recorded material and the sound output was ensured since the researcher used the same professional loudspeaker system throughout the whole data collection period. Also, the researcher was present to make sure all the environmental conditions are the same in each group and the students did not copy the answers from each other when the data was being collected. The data from each participant was collected approximately at the same hours of the day, in the afternoon hours, to eliminate any possible effects of readiness of the students. A summary of the whole procedure and the details regarding each measurement can be found in the table below.

Table 3.2 *A summary of instruments and data collection procedure*

	Skills assessed	Sources of Instruments	Instruments	Duration
1st Session	L2 Listening Comprehension	British Council, IELTS sample	IELTS Listening Test • 40 questions based on 4 recordings • Multiple choice, sentence completion, table completion, matching, note completion	30 minutes
2nd Session	L2 Morphological Awareness	Aksoy (2015)	Morphological Awareness Test (MAT) • Sentence Completion ➤ 27 items • Word Relation ➤ 20 items	10-15 minutes based on students' proficiency
	+			
	L2 Phonological Awareness	Researcher developed	Phonological Awareness Test (PAT) • 30 items-5 in each part • Rhyme Recognition • Rhyme Application • Oddity-Beginning/Middle/Final Sounds (Phoneme Categorization) • Blending Phonemes	13 minutes

The total number of the students who took the IELTS in all the classes is 91, and 80 students took PAT-MAT, making a total of 117 participants who took at least one test among all three tests. For this study, the scores of participants, who took all three data collection instruments, were analysed and correlated. The distribution of the participants for the tests are given in Table 3.3.

Table 3.3 *Data collection distribution among groups*

<i>No. of students who sat</i>			
Groups	IELTS	PAT-MAT	BOTH
2-A	15	19	9
2-C	7	8	-
2-E	19	12	11
2-F	13	9	6
2-G	18	18	18
2-H	18	14	10
Total	91	80	54

According to Creswell (2002), when choosing samples to represent the population there are two approaches, namely probability and non-probability sampling. While it is ideal to choose participants using probabilistic sampling, it is not always convenient and in that case the researchers utilize one of the non-probability sampling methods where the participants are selected because “they are available, convenient, and represent some characteristic the investigator seeks to study” (Creswell, 2002, p.145). In this study convenience sampling method was adopted, which is defined as where “the participants are willing and available to be studied” by Creswell (2002, p.145).

When selecting participants, another important point to take into consideration might be reaching out as large a sample size as possible to reduce the possible sampling error. One path to follow when deciding for how many participants are needed for a study can be to look at the statistical procedures planned to use (Creswell, 2002). For correlational studies that aim to find a relationship between variables, approximately 30 participants are needed (Creswell, 2002). Due to time constraints and voluntary nature of data collection procedure, some participants missed to take all three tests in our study.

However, the total number of participants, (n=54) is believed to represent the target population, second year students.

3.5. Data Analysis

Data collected through IELTS listening test, Phonological Awareness Test and Morphological Awareness Test from a total of six classes, 54 2nd year ELT students. SPSS 20.0 was used to calculate the descriptive and the correlational statistics.

IELTS test came with a complimentary key in which all the correct answers were provided for the multiple-choice questions and for the parts where the participants were required to provide one to three-word prompts from the listening track. Secondly, the participants took PAT, which was designed by the researcher. The reliability of the researcher-developed test was calculated after the answers for each item in this test was computed into SPSS (coded '1' for correct answers and '0' for wrong answers) and Cronbach's Alpha was found to be .693 for PAT. The last instrument was MAT and it had two sections, scores of both of which were computed into the program both as separately as MAT Section I and II and as a total score as MAT. Each test was graded by the researcher since only questions 6 to 10 were fill-in-the-blank type and all the others were multiple choice. Below can be seen a summary of the instruments and data analysis methods used in this study to answer the research questions in Table 3.4. In order to answer the first question, IELTS and MAT results were analysed using descriptive analysis and linear regression.

To answer the first question, the scores participants received from IELTS listening test, PAT and MAT were analysed and reported using descriptive statistics (mean, minimum and maximum scores, standard error, standard deviation) "to indicate the general tendencies and the distribution of the scores" (Creswell, 2002, p.182). Later, to reveal the problem areas and to better understand how the participants performed on each question and each section, item analysis was conducted for each test and the results were reported using histograms, line charts and pie charts. For the second, third and fourth questions, the same scores in addition to the students' grades on related compulsory courses were correlated to display the relationship they have. The findings of the correlations were reported using correlation matrices. In addition, they were displayed on scatterplots to illustrate the comparison between the dependent variable (*i.e. listening proficiency*) and independent variables (*i.e. phonological awareness levels,*

morphological awareness levels, course grades on related compulsory courses) in the study. Lastly, the scores were put into a regression equation to reveal what independent variables “best explain the variation” (Creswell, 2002. p.15) in the listening proficiency scores of the participants. The findings were tabulated to report linear regression model summary, analysis of variance and coefficients demonstrating the effect size of the variables under inspection.

Table 3.4 *A summary of instruments and data analysis methods*

Research Questions	Instruments	Data Analysis
What is the relationship between Turkish EFL learners' listening proficiency scores and phonological awareness levels?	1. IELTS 2. Phonological Awareness Test	1. Descriptive analysis 2. Correlation 3. Linear regression
What is the relationship between Turkish EFL learners' listening proficiency scores and morphological awareness levels?	1. IELTS 2. Morphological Awareness Test	
What is the relationship between Turkish EFL learners' phonological awareness and morphological awareness levels?	1. Phonological Awareness Test 2. Morphological Awareness Test	
How do the participants perform on different components of IELTS, PAT and MAT?	1. IELTS 2. Phonological Awareness Test 3. Morphological Awareness Test	
What are the effects/relationship/contribution of following courses on LP, PAT and MAT; a) Contextual grammar I and II b) Listening 1-2 c) Ling 1-2	1. IELTS, PAT and MAT scores 2. Student grades from mentioned compulsory courses	

4. FINDINGS

A total of 54 students participated in the current study by sitting all three instruments; IELTS, PAT and MAT. In this section, first descriptive statistics will be reported followed by the findings regarding the correlational analysis of variables under investigation.

4.1. Listening Proficiency in Foreign Language

Listening proficiency levels of the participants were measured via a sample IELTS test for the purposes of this study. The test had 40 questions, 10 each in four separate sections. Table 4.1 below demonstrates the minimum and maximum scores of the participants from these tests in addition to the mean scores, standard error and standard deviation. According to the table, on average, the participants scored 6.324 out of 9 from the IELTS Listening Test ($M= 6.324$, $SD= .8019$), indicating an effective command in English language especially in familiar situations despite some misunderstanding and inappropriate usage according to British Council ("Understand and explain the IELTS scores", 2019).

Table 4.1 *Descriptive statistics of IELTS (N=54)*

	Min	Max	Mean	SE	SD
IELTS	4.5	8.0	6.324	.1091	.8019

The scores of the IELTS listening section shows a normal distribution as presented in Figure 3. According to Figure 3, none of the participants scored 9, none scored lower than 4.5 and the most popular score was 6.5. The standard deviation is the lowest for this test, meaning the results were distributed closest to each other among all the instruments used in this study, therefore generating the most reliable results. ($SD= .8019$).

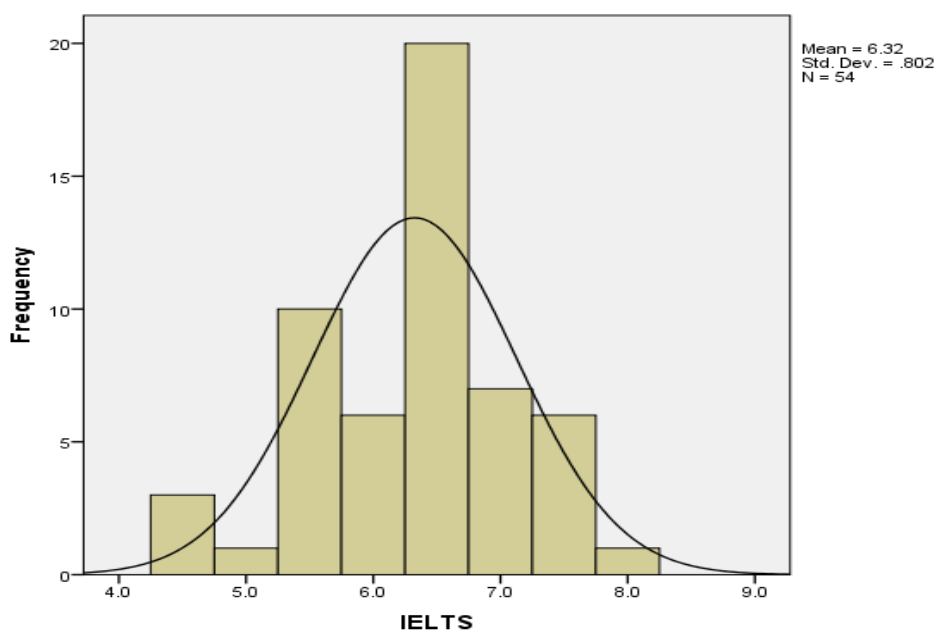


Figure 4.1 *Histogram for IELTS listening scores*

Item analysis was conducted to see how the participants scored on different parts of the listening test to be better able to evaluate the participants' listening skills with regards to the problem areas they might have. When the separate parts of IELTS listening was also examined it was seen that while the participants answered some of the parts mostly correctly, their mistakes cumulated in some parts. Figure 4 shows the percentages of the wrong answers for each different task types. Questions between 1 and 5 were note completion tasks followed by questions 6 to 10, which were table completion tasks. It is interesting that the highest percentage of wrong answers were found in this part with a percentage as high as %48.70, meaning almost half of the questions in this part were answered wrong. The answers in this part were respectively "9.30 (am), Helendale, Central Street/St, (number/no./#) 792, 8.55 (am), 1.80, 7.30, 7.15, commuter and afternoon". Following the first section, what can be seen is that students gave the highest percentage of correct answers to the first half of the second section, namely questions between 11 and 14, which were multiple choice tasks as expected. In this part they were required to choose one of the three counsellors according to the information given in the listening. Questions between 15 and 20 were also answered with a fairly high percentage of correct answers, with only %16.98 of the questions were answered wrong. In this section, the participants needed to complete a table with no more than two words listening to a script related to the counselling services the school offers. When the answers to the questions in this part were examined, it is seen that target words in this part were

successively “first/1st year, (right) balance, international/foreign (students), relaxation, motivation, research/advanced”. Third section was note completion and the students were required to listen to a teacher giving a mini lecture on a literary piece. The answers they needed to write included the following: “The Secret Garden, (the) 20th/twentieth century, walk, motivations/motivation, abstract ideas, roses, dark(ness) to light(ness), health, environment and human companionship”. The following figure informs that the %31.48 of the wrong answers are cumulated in the third section of the test. Lastly, section four was analysed in two parts due to differing task types. Questions between 31 and 35 were table completion with one-word answers about a talk on time perspectives. Th students completed this part with %44.81 wrong answers. The target words were consecutively “negative, pleasure, poverty, active and success”. The question between 36 and 40 were also multiple-choice question where the students were required to choose one among three options to complete the statements given in the question root. The participants provided wrong answers to %42.96 of the questions in this part.

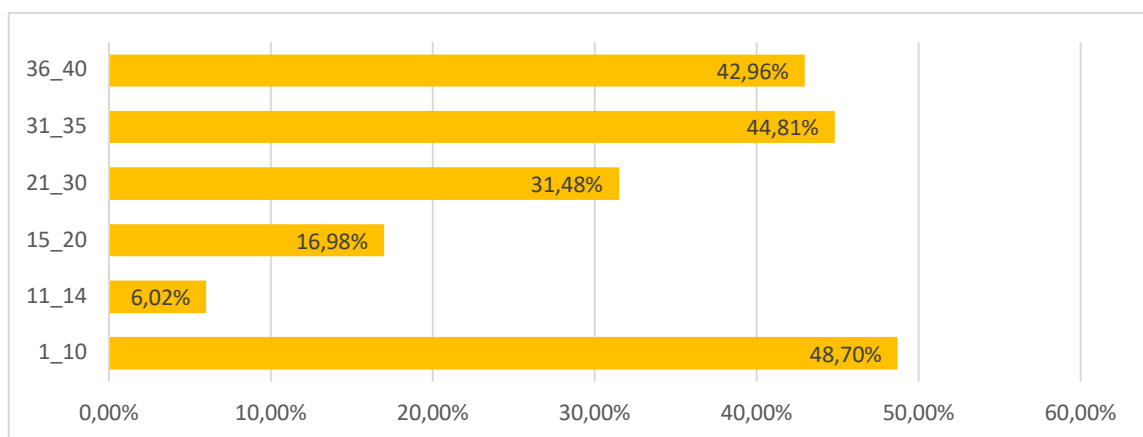


Figure 4.2 *Section analysis of IELTS*

Figure 4.3 below shows the number of participants who gave a wrong answer to each of the questions in the listening test. To be able to see if the problem sources derived from the section totals or individual questions in each section, figure below was studied. It is seen that while some questions were answered correctly by each participant (i.e. Q11 and 14), and some by almost each participant (i.e. Q13, 15, 19, 21 and 31), wrong answers tend to pile up in some questions.

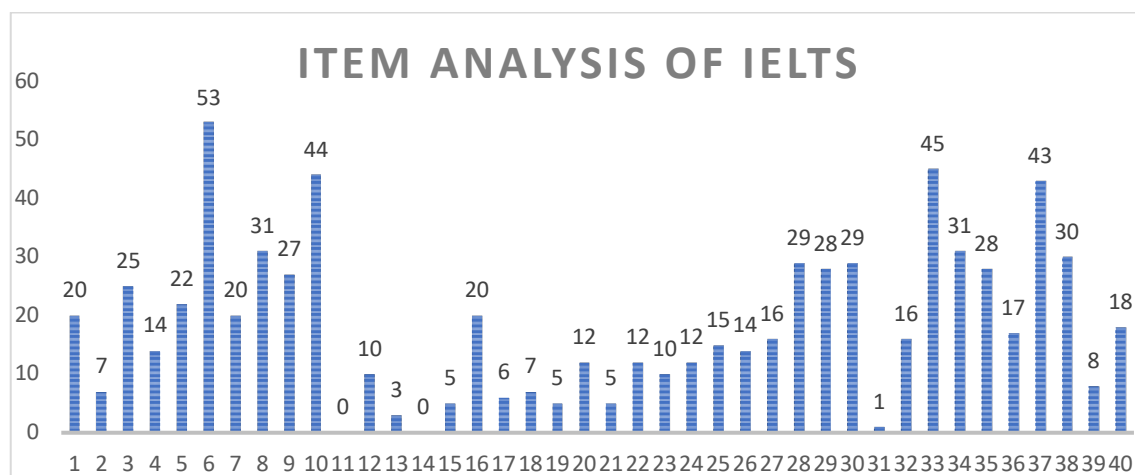


Figure 4.3 Item analysis of IELTS listening test

According to Figure 4.3, in the first part, questions 6 and 10 were especially problematic for more than half of the participants. 53 out of 54 students provided a wrong answer to the 6th question which is given below. It is seen that it requires listening selectively to complete the table with a number referring to monetary value of a ticket and the answer was 1.80 (\$). It is possible that the reason almost all of the participants provided a wrong answer to this question may be attributed to their phonological awareness levels since this item measures the participants' ability to discriminate between individual sounds and they might have mistaken 'one-eighty' with 'one-eighteen'.

Write no more than one word and/or a number for each answer.

Transport	Cash fare	Card fare
Bus	(6) \$	\$1.50

Figure 4.4 6th question in IELTS listening test

44 out of 54 students provided a wrong answer to the 10th question, whose answer was ‘afternoon’ as well in the same section as provided below. Again, the target item could be answered listening selectively and the item measures their ability to hear individual words, therefore, might be attributed to the participants’ phonological awareness.

Tourist ferry ((10) \$35	—
.....)	

Figure 4.5 10th question in IELTS listening test

Section two was observed to be the part where the students received the highest scores according to above figures 4.2 and 4.3. Similarly, in the third section although there are some questions to which half of the participants gave a wrong answer, these can be accepted within expectations. However, in the fourth section of the test, questions between 31 and 40, again there are two specific questions, namely question 33 and 38, where the wrong answers piled up since as many as 45 and 43 out of 54 students provided a wrong answer respectively to those items. Both questions can be inspected below.

	Fatalistic	Life is governed by (33) religious beliefs, social conditions. Life’s path can’t be changed.
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Figure 4.6 33rd question in IELTS listening test

38) Present-orientated children A) do not realise present actions can have negative future effects B) are unable to learn lessons from past mistakes C) know what could happen if they do something bad, but do it anyway

Figure 4.7 38th question in IELTS listening test

4.2. Phonological Awareness in Foreign Language

Below table shows the minimum, maximum and mean scores along with standard error in the mean and standard deviation of the phonological awareness test used in the study. PAT scores of the participants were relatively high, maximum score being 30 and

average score obtained was 25.093 ($M=25.093$, $SD= 3.1414$). In other words, the participants answered more than half of the questions correctly in this test.

Table 4.2 *Descriptive Statistics of PAT (N=54)*

	Min	Max	Mean	SE	SD
PAT	10.0	30.0	25.093	.4275	3.1414

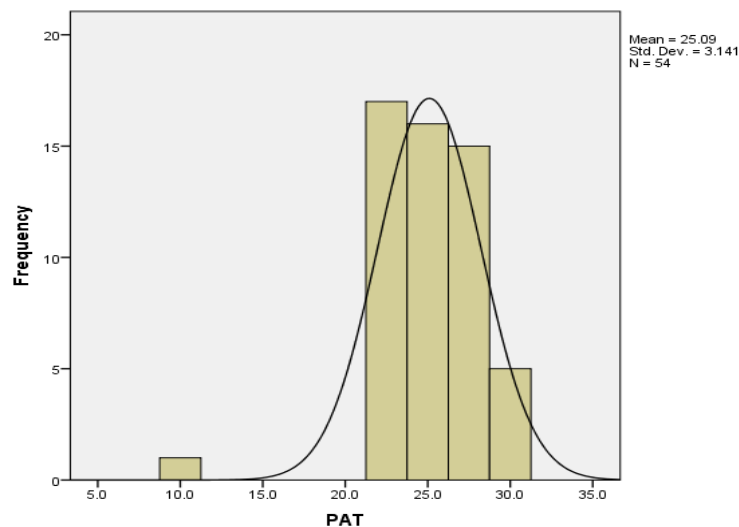


Figure 4.8 *Histogram for PAT Scores*

Histogram chart presented above shows how the scores of phonological awareness test are distributed among the participants. Data in Figure 4.8 displays that the scores obtained from this test are mostly between 21 and 28 with an exception of only one participant scoring 10 out of 30. Also, no student scored between 10 and 21; therefore, the scores tend to pile up at the right end of the chart. It can also be said that the participants are observed to have a high level of phonological awareness when measured via PAT used in this study. However, when the sections of PAT were analysed through a means of item analysis, interestingly, first section of the test was found to be the part where the students provided the highest number of wrong answers in the test.

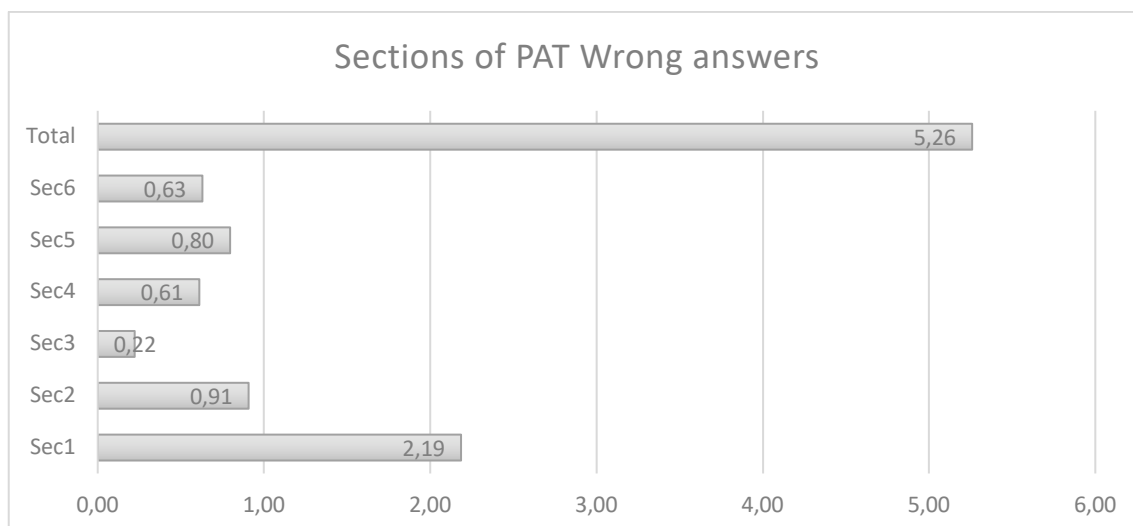


Figure 4.9 *Chart display of wrong answers from each section of PAT*

The first part in the test was designed to measure the phonological awareness of the participants at the “shallowest” level (Høien,1995) among others, which is rhyme recognition. In this part the students listened to a word and they were then asked to circle the word that rhymes with the first word they had heard. The second section measured the phonological awareness levels of the participants at the rhyme application level with a rhyme production task. Although production tasks are associated with more advanced levels of the same skill when compared to recognition tasks, 2nd year ELT students who took part in the present study performed significantly better from the production task with a percentage as low as %18,15 wrong answers in the second section of PAT according to the following Figure 4.10. The third section in the whole test was detected to be the part where the students answered with the lowest percentage of wrong answers, therefore it can be said that the students were most successful at detecting similar or odd sounds at the beginning position of a word. On the other hand, the participants answered %12,22 of the questions in the fourth section and %15,92 of those in the fifth section wrong, which included tasks measuring oddity at the middle and final position of target words. Lastly, in part six, students answered %12,59 of the questions wrong, which was the part that targeted to measure phonological awareness levels of the participants at the “deepest” level (Høien,1995). The phonemic awareness task in the sixth section required the participants choose the word whose phonemes they heard separately among the options.

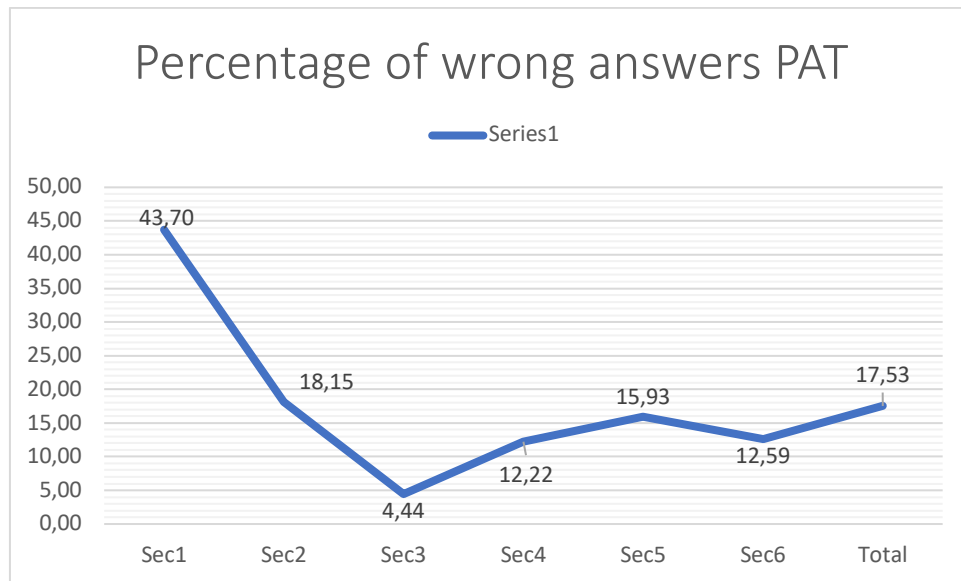


Figure 4.10 Line graph demonstrating percentages of wrong answers from PAT

To see which specific items were especially difficult for the test takers and which were particularly less challenging, item analysis was conducted for PAT.

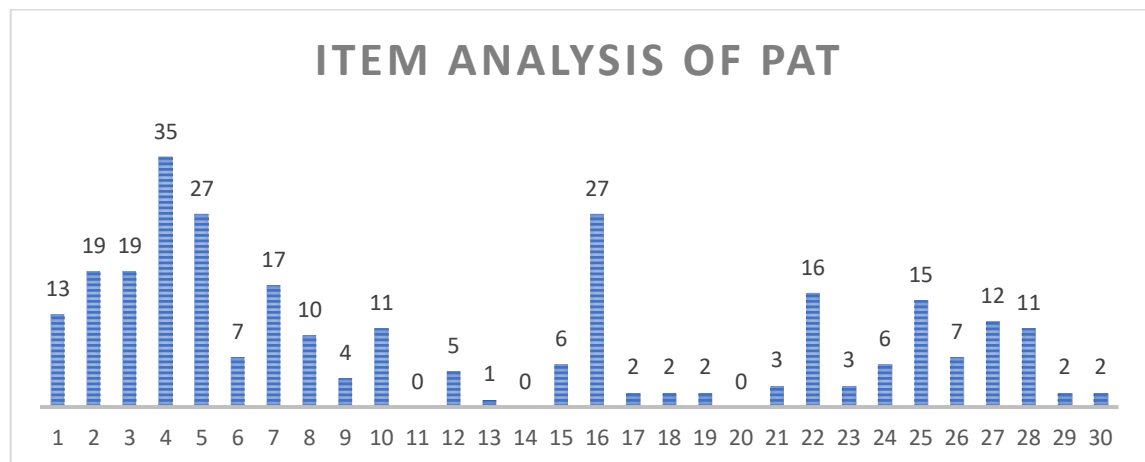


Figure 4.11 Item analysis of PAT showing wrong answers for each question

According to Figure 11, 35 out of 54 participants provided a wrong answer to the question four in the first section, which is presented below. In this part students only heard the target words written in bold and they were asked to choose the option that rhymes with the target word. The question aimed to measure if the participants can recognize rhyming words, which is a skill at the less challenging and less complex end of the phonological awareness tasks according to Chard and Dickson (1999). Therefore, this finding can be regarded as unexpected.

4. dump	dumb	bum	damp	grump
5. prizes	crisis	rises	plays	please

Figure 4.12 4th and 5th questions of PAT

Similarly, question number five, which is given below is another item that generated parallel results with the fourth item of PAT. 27 out of 54 students gave a wrong answer to the fifth item in PAT, which tested their ability to recognize rhymes. This type of activity is accepted as receptive since it does not require production at any level, therefore regarded as more basic levels of phonological awareness when compared to oddity tasks such as question sixteen in the fourth part as shown below. In the third, fourth and fifth sections of PAT, sound oddity tasks were included. According to Figure 4.11, 27 out of 54 participants, in other words half of the test-takers answered 16th question wrong. In this part, they were required to decide which word among four options has a different final sound, which can be regarded at a medium level of complexity according to Chard and Dickson (1999) since this type of tasks do not require manipulating the smallest components such as phonemes, but they tackle with smaller components than words. The reason that this specific item was challenging to the participants might be rooted in the differences between Turkish and English phonemes since the phonemes tested in this item (/θ/-/ð/) are the phonemes that do not exist among 28 phonemes of Turkish language.

16.	smooth	teeth	tenth	filth
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Figure 4.13 6th question of PAT

4.3. Morphological Awareness in Foreign Language

MAT scores of the participants were analysed both separately and in total to see how well participants did on each of the two sections as summarized in Table 4.3 below. Students scored 43.815 from the combination of the two sections on average while they scored 24.685 on the Sentence Completion part of the morphological awareness test and 19.315 on the Word Relation part (M=43.815, SD=2.9973; M=24.685, SD=2.1441; M=19.315, SD=.9482). It can be said that students achieved the highest from the Word Relation part (MAT_2) of the MAT among all other tests.

Table 4.3 *Descriptive statistics for MAT*

	Min	Max	Mean	SE	SD
MAT	32.0	47.0	43.815	.4079	2.9973
MAT_1	18.0	27.0	24.685	.2918	2.1441
MAT_2	16.0	20.0	19.315	.1290	.9482

Since the number of items students answered varied in each test, comparing only mean scores would not demonstrate a clear picture of the data. Therefore, below the histogram charts for each test and the two subtests of morphological awareness test were provided. With reference to the statistics presented in Figure 4.15, all the scores showed a negative skewness which means that the students could answer more than 50 percent of the questions in each test and subtest.

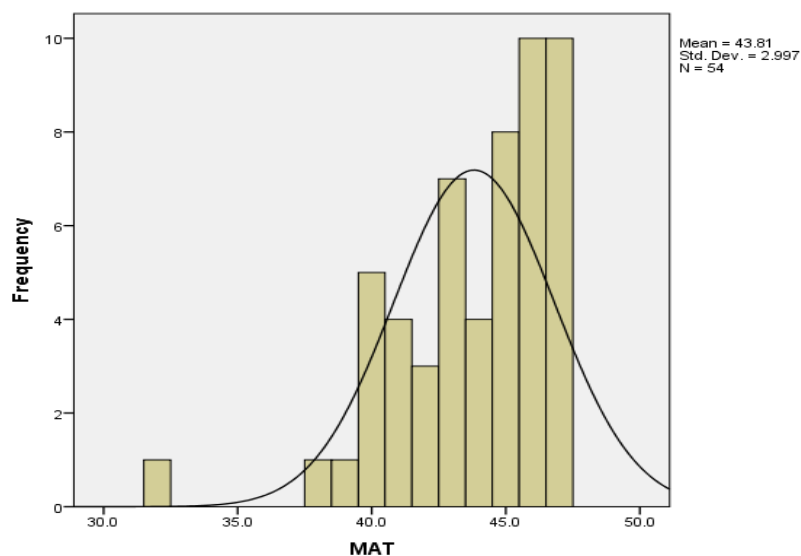


Figure 4.14 *Histogram for MAT total scores*

The distribution of the results as shown in Figure 4.14 represents the scores of the morphological awareness test including both sections. Figure 4.14 suggests that participants scored mostly between 38 and 47. Only one person scored 32 and none scored between 32 and 38. Similarly, as Figure 4.15 demonstrates, all the participants -except two- scored higher than 20 and the most popular score is the maximum score with 13 people scoring 27, although the mean score obtained from this test is 24.69.

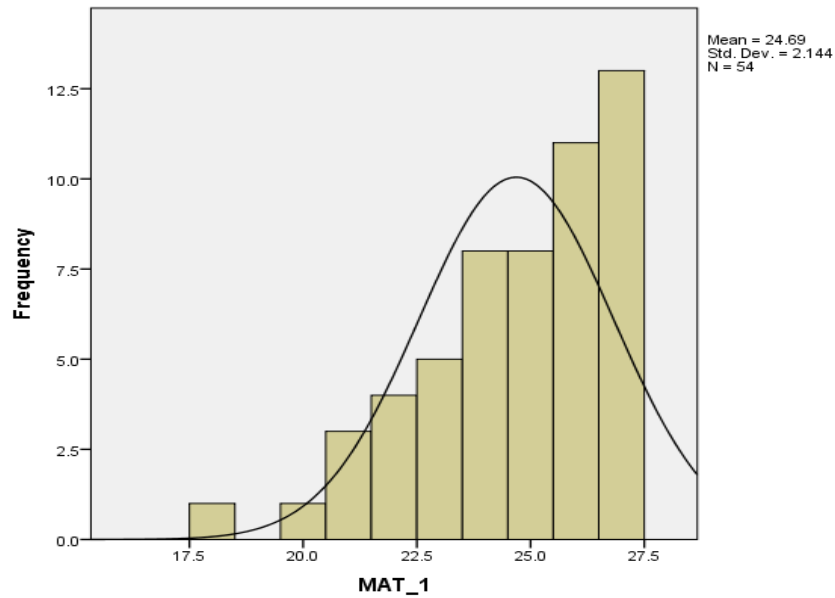


Figure 4.15 *Histogram for MAT section 1- sentence completion*

When we look at Figure 4.16, again the scores are between 18 and 20 with only two exceptions who scored 16 and 17. The average score obtained from the Word Relation part of the morphological awareness test suggests that the questions were not quite challenging for the second grade ELT students since they were able to answer more than 90 percent of the questions correctly. All in all, it can be concluded that the MAT results show a high level of awareness of the derivational suffixes tested in the MAT Section 1 among participants. Also, the participants in this study showed a high level of proficiency in detecting the morphologically related words in given pairs in the Word Relation part.

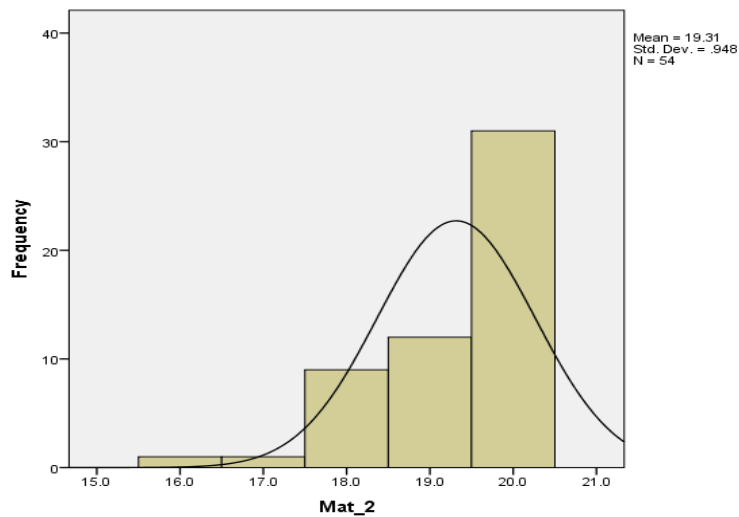


Figure 4.16 Histogram for MAT section 2- word relation

In addition to the section-based analysis, to detect items that are problematic for the participants, item analysis was conducted regarding both sections of MAT as displayed in below Figure 4.17.

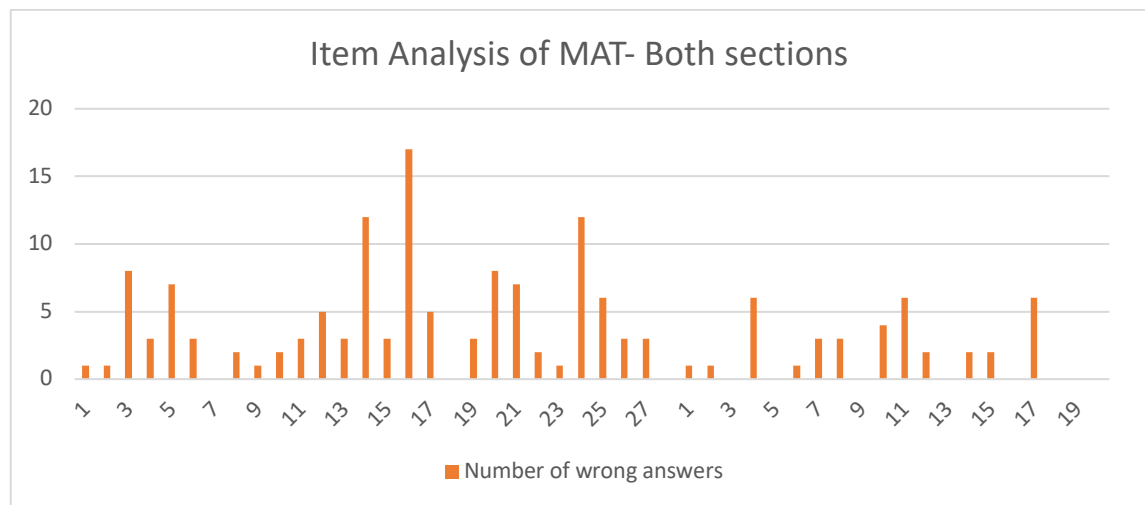


Figure 4.17 Item analysis of MAT sentence completion and word relation

In the Sentence completion part of the MAT, the most problematic item was the 16th question which measured if the students can differentiate between verb making, noun making and adjective making suffixes.

16. The story of the _____ was repeated every year.

A. vergalize B. vergaliat C. vergalify D. vergalist

Figure 4.18 16th question in MAT

17 out of 54 students gave a wrong answer to 16th question, which shows that the participants could not decide which suffix should follow the pseudo word “vergal-” within the context of the 16th question which is presented above. Other than the above item, the dispersion of the scores illustrate a normal distribution. However, to draw a more comprehensive picture from the data regarding which category of suffixes were answered with a higher percentage of wrong answers the following pie chart was examined.

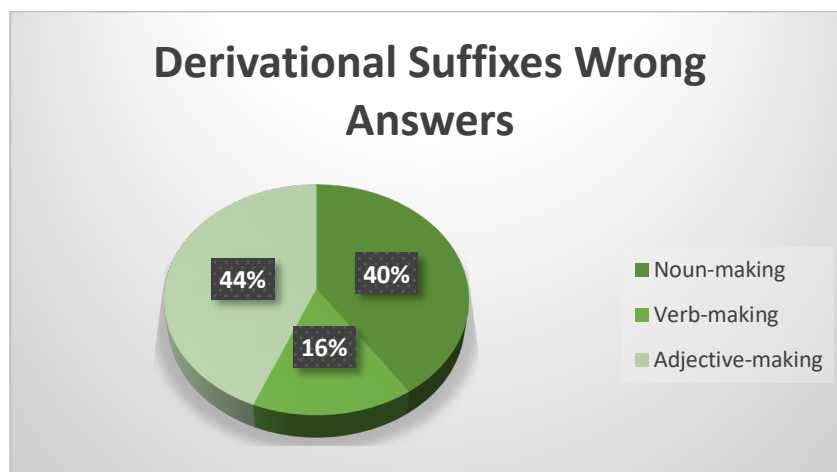


Figure 4.19 Pie chart displaying the categories of the wrong answers in MAT-1 sentence completion part

According to Figure 4.19, the most problematic category of suffix is adjective-making suffix group with the highest percentage among all three categories with %44 wrong answers. It is followed by noun-making suffix category with % 40 of the questions answered wrong by the participants and lastly verb-making category is observed to be the part where the test-takers made the highest amount of correct choices. According to various language acquisition theories, it is not uncommon that nouns are learned before verbs since they refer to everyday objects and more frequently used in daily language. The findings of the item analysis regarding the suffix categories, therefore, might be acknowledged as unexpected.

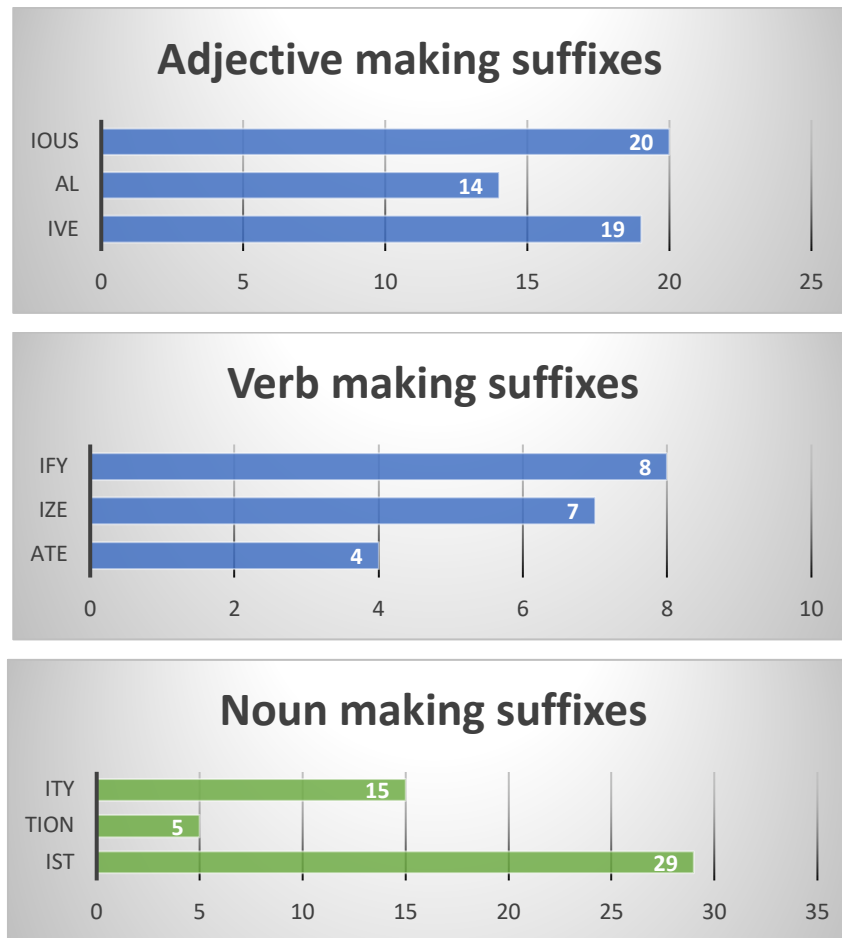


Figure 4.20 *Category based distribution of the wrong answers of the suffixes tested in MAT part 1 sentence completion*

Lastly, Figure 4.20 indicates which specific suffix in each category is more difficult for the test-takers and the number of participants who gave a wrong answer to the items measuring their ability to use these suffixes appropriately. Each suffix was tested in three different questions, therefore there were 9 questions for each category of suffix and 27 in total. According to what the figure suggests the most confused suffixes are “-ist” in noun-making category, “-ious” in adjective-making category, and “-ify” in verb-making category.

4.4. Relationship Between Turkish EFL Learners' Listening Proficiency Scores and Phonological Awareness Levels

To address the second research question, the scores obtained from participants' IELTS were correlated with their PAT scores using linear regression analysis. Table 4.4

demonstrates the results of the possible correlation between the participants' listening scores and their phonological awareness levels measured via PAT.

Table 4.4 *Correlations between IELTS and PAT scores*

Correlations (N=54)			
		IELTS	PAT
Pearson Correlation	IELTS	-	-
	PAT	.432**	-

**Correlation is significant at the .01 level

According to Table 4.4, there is a moderate positive correlation between the listening scores of the participants and their phonological awareness levels measured via PAT ($r = .432, p < .01$). According to simple linear regression analysis calculated to predict the effect of phonological awareness on listening comprehension scores of the participants, regression equation was found to be significant ($F(1, 52) = 11.908, p = .001$) with an R^2 of .186 as presented in the Table 4.5 and Table 4.6. R^2 reported here suggests that 18% of the variation in the participants' listening scores can be explained with their phonological awareness levels. In addition, Table 4.7 demonstrates that participants' predicted listening comprehension score is equal to $3.559 + .110$ (PAT) when phonological awareness level is measured in listening scores. In other words, participants' listening scores increased .110 for each score in phonological awareness levels.

Table 4.5 *Linear regression model summary between IELTS and PAT scores*

Model Summary				
Model	R	R Square	Adjusted Square	R Std. Error of the Estimate
1	.432 ^a	.186	.171	.7302

a. Predictors: (Constant), PAT

Table 4.6 ANOVA for linear regression analysis of IELTS and PAT scores

ANOVA ^a						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	6.350	1	6.350	11.908	.001 ^b
	Residual	27.729	52	.533		
	Total	34.079	53			

a. Dependent Variable: IELTS

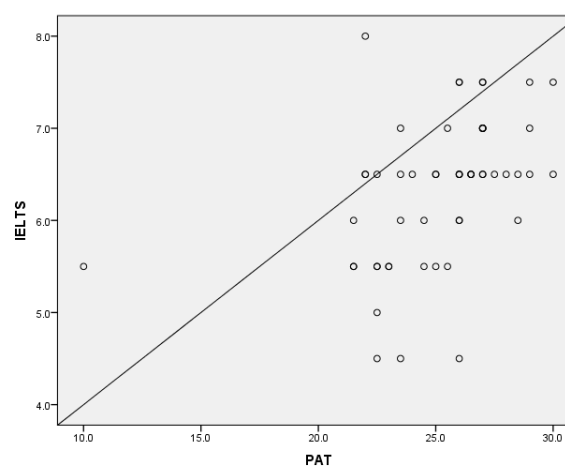
b. Predictors: (Constant), PAT

Table 4.7 Coefficients for linear regression analysis for PAT

Coefficients ^a							
		Unstandardized		Standardized		95.0%	Confidence
		Coefficients		Coefficients		Interval for B	
Model		B	Std. Error	Beta	t	Sig.	
1	(Constant)	3.559	.807		4.409	.000	1.939 5.179
	PAT	.110	.032	.432	3.451	.001	.046 .174

a. Dependent Variable: IELTS

Figure 4.21 below demonstrates how the IELTS listening scores of the participants correlated with their phonological awareness test scores on a scatter plot diagram. The diagram suggests there is a positive correlation between the listening scores and the phonological awareness test scores obtained from PAT, although the correlation is not very strong. It can be said that, participants of this study scored above 20 no matter what their IELTS scores are, with only one exception which can be accepted as an outlier.

**Figure 4.21** Scatterplot diagram for IELTS listening test and PAT scores

To summarize, the relationship between phonological awareness measured via PAT and listening scores of the participants in the current study show a statistically significant correlation although regression analysis results suggest there could be only a mild relationship between the variables.

4.5. The Relationship Between Turkish EFL Learners' Listening Proficiency Scores and Morphological Awareness Levels

In order to answer this research question, a correlation analysis was utilized. Table 4.8 presents the relationship between the variables mentioned in the research question. The dependent variable of this correlation analysis was 'IELTS' scores and the independent variables were 'MAT', 'MAT1' and 'MAT2' scores which respectively correspond to total score the participants got from both sections in MAT, namely Sentence Completion and Word Relation parts. According to Table 4.8, Pearson Correlation is highest for MAT and MAT Section 1 ($r=.804$, $p<.01$), suggesting the Sentence Completion Part of the morphological awareness test was more predictive of the total morphological awareness levels of the participants when compared to Word Relation Part of the same test ($r=.559$, $p<.01$). Another significant correlation shown in this table is between MAT Section 1 and IELTS scores of the participants ($r=.340$, $p<.05$). Again, the scores participants got from their listening test correlated positively with their scores on the Sentence Completion Part of the MAT.

Table 4.8 *Correlations among IELTS, MAT, MAT 1-sentence completion and MAT 2-word relation*

Correlations (N=54)s					
Pearson Correlation (r)		IELTS	MAT	MAT 1	Mat 2
	IELTS	-	-	-	-
	MAT	.249	-	-	-
	MAT 1	.340*	.804**	-	-
	MAT 2	.062	.559**	.217	-

*Correlation is significant at the .05 level

**Correlation is significant at the .01 level

Apart from the correlation analysis, a simple linear regression was calculated to predict the effect of morphological awareness on listening comprehension scores of the

participants. Alpha level .05 and .01 were used in all statistical tests. A non-significant regression equation was found ($F(3, 50) = 2.228, p = .096$) with an R^2 of .118 as presented in the Table 4.9 and Table 4.10. R^2 reported here suggests that 17% of the variation in the participants' listening scores stem from their morphological awareness levels. Moreover, Table 4.11 demonstrates that participants' predicted listening comprehension score is equal to $3.215 + -.026$ (MAT) when morphological awareness level is measured in listening scores. In other words, participants' listening scores increased -.026 for each score in morphological awareness levels.

Table 4.9 *Linear regression model summary between IELTS and MAT scores*

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.343 ^a	.118	.065	.7754

a. Predictors: (Constant), Mat_2, MAT_1, MAT

Table 4.10 *ANOVA for linear regression analysis of IELTS and MAT scores*

ANOVA^a

Model	Sum of Squares	df	Mean Square	F	Sig.
1 Regression	4.018	3	1.339	2.228	.096 ^b
Residual	30.061	50	.601		
Total	34.079	53			

a. Dependent Variable: IELTS

b. predictors: (Constant), Mat_2, MAT_1, MAT

Table 4.11 *Coefficients for linear regression analysis for MAT*

Coefficients^a

		Unstandardized Coefficients		Standardized Coefficients		95.0% Confidence Interval for B		
Model		B	Std. Error	Beta	t	Sig.	Lower Bound	Upper Bound
1	(Constant)	3.215	2.348		1.369	.177	-1.501	7.932
	MAT	-.026	.080	-.099	-.331	.742	-.187	.134
	MAT_1	.155	.095	.414	1.634	.109	-.035	.345
	Mat_2	.023	.154	.027	.151	.881	-.285	.332

a. Dependent Variable: IELTS

Another visual representation of the data can be found in Figure 4.22, which shows the scatter plot diagram representing the correlation between morphological awareness test and listening scores of the participants. Figure below suggests that the participants scored mostly between 40 and 47 from the morphological awareness test regardless of their IELTS listening scores.

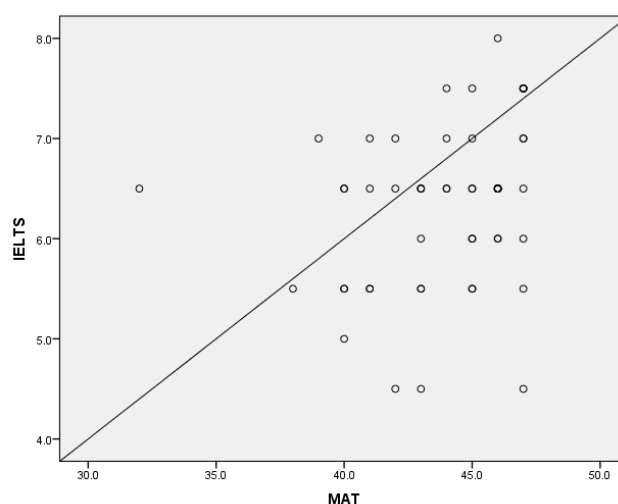


Figure 4.22 Scatterplot diagram of IELTS listening test and MAT scores

Taken together, the results of the statistical analysis suggest that morphological awareness levels positively correlate with the participants listening scores obtained from IELTS listening test when measured via MAT used in this study. This suggest that participants who got higher results in the listening test tend to score higher in the morphological awareness test as well, although regression analysis revealed that the participants scored high from the morphological awareness in general.

4.6. The Relationship Between Turkish EFL Learners' Phonological Awareness and Morphological Awareness Levels

Correlation analysis was conducted to explore the relationship between phonological awareness and morphological awareness among second year ELT learners. Table 4.12 demonstrates that there is not a significant correlation between the two variables since Pearson Correlation is reported to be .136 which is considered as no correlation as suggested by Cohen and Manion (2002).

Table 4.12 *Correlations among PAT, MAT, MAT 1-sentence completion and MAT 2-word relation*

		Correlations			
		PAT	MAT	MAT 1	MAT 2
PAT	Pearson Correlation	-			
MAT	Pearson Correlation	.136	-		
	Sig. (2-tailed)	.326			
MAT_1	Pearson Correlation	.122	.804**	-	
	Sig. (2-tailed)	.379	.000		
MAT_2	Pearson Correlation	.148	.559**	.217	-
	Sig. (2-tailed)	.284	.000	.115	

**. Correlation is significant at the 0.01 level (2-tailed).
; PAT= *Phonological awareness test*; MAT= *Morphological awareness test*; MAT_1= *Sentence completion*; MAT_2= *Word relation*;

Another representation of the non-significant correlation between the participants' phonological and morphological awareness levels can be found in Figure 4.23. The scatter diagram validates the results obtained from the correlation analysis presented in Table 4.12 above. It can be observed that the scores obtained from the two awareness tests are cumulated at the higher end of the diagram, suggesting that most of the participants got high scores from both tests. Therefore, in lack of lower scores it is uncommon to interpret the relationship as a significant correlation.

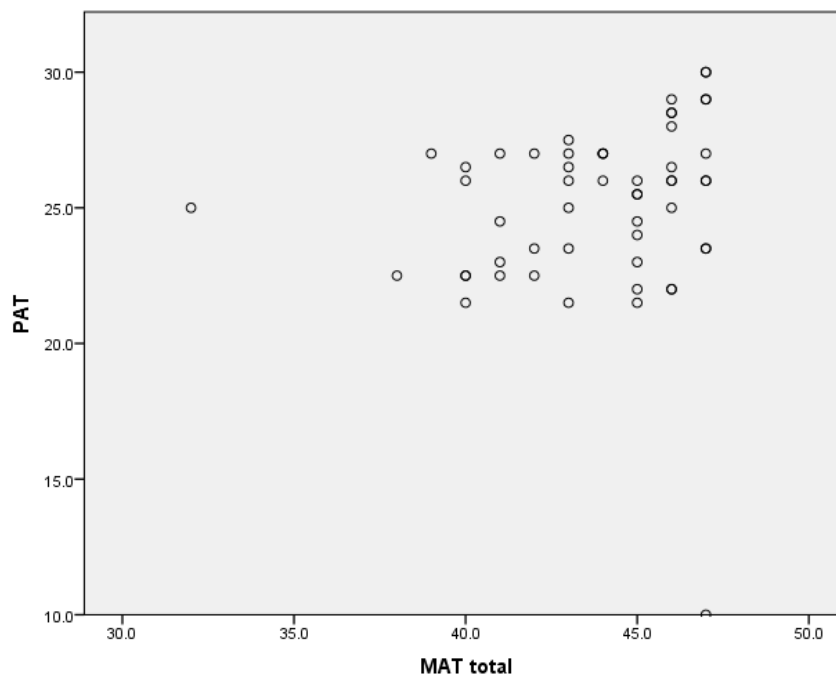


Figure 4.23 *Scatterplot diagram of PAT and MAT scores*

4.7. The Effects of Compulsory Courses on Listening Proficiency, PAT and MAT

The possible contribution of the compulsory courses participants take as part of their field education was another interest of the current study. It might be regarded as a valuable investigation because the participants in this study are explicitly instructed on these awareness types unlike the participants of studies aimed to reveal the significance of the two awareness types in terms of listening proficiency. Therefore, the relationship between the related courses (*i.e. INO 119-120 Contextual Grammar I and II, INO 135-136 Listening Comprehension and Listening Comprehension and Note-Taking, INO 213-214 Linguistics I and II*) and the variables of the current study was investigated through correlational analysis. The results are reported in the correlation matrix presented in Table 4.13 below. According to what the table suggests, there are seven pairs of variables that are statistically significantly correlated with each other. The first of these seven pairs is the positive correlation between the scores the participants obtained from IELTS listening test and their INO 135 Listening Comprehension and INO 136 Listening Comprehension and Note Taking course grades ($r=.685, p<.01$; $r=.685, p<.01$). This particular result is not unexpected since both the courses are targeted to develop the students' awareness regarding listening comprehension tasks by teaching the students strategies such as recognizing various questions, sequence markers, key terms and definitions, cause and effect relationships, comparison and contrasting and problem solving (see Appendix F). These listening courses are found to be effective not only in terms of listening skill, but they also have a positive relationship with MAT Total and MAT-1 scores of the participants. According to the matrix below, the Pearson Correlations for INO 135 Listening Comprehension and INO 136 Listening Comprehension and Note-Taking and MAT Total are successively .370 ($p<.05$) and .347($p<.05$), which indicates a slight to moderate correlation between the two listening courses and the participants' morphological awareness scores. This correlation is even more meaningful when the relationship between MAT-1 scores and the two listening courses are investigated ($r=.444$; $r=.392, p<.01$). It can be interpreted as the listening courses that are offered as part of field training are useful for the learners not only in advancing in listening comprehension, but these courses are proved useful in contributing to morphology as well. Another course that contributes to the awareness types this study investigates is INO 119, which has a positive correlation with morphological awareness scores they obtained from MAT Total and MAT-1 of the participants ($r=.343, r=.417, p<.05$). It

means the skills students acquired through receiving instruction on various grammatical structures and their functional and syntactic characteristics had a positive impact on their morphological awareness as well (see Appendix G). However, other than three compulsory courses offered in the department, no other course has been verified to have a statistically significant correlation to any of the awareness types and listening proficiency.

Table 4.13 *Correlation matrix demonstrating the relationship among test scores and compulsory course grades of the participants*

Correlations		IELTS	PAT	MAT	MAT_1	MAT_2	BD_1	BD_2	LC_1	LC_2	LING_1	LING_2
IELTS (n=54)	Pearson Correlation	-										
PAT (n=54)	Pearson Correlation	.432**	-									
	Sig. (2-tailed)	.001										
MAT (n=54)	Pearson Correlation	.249	.136	-								
	Sig. (2-tailed)	.069	.326									
MAT_1	Pearson Correlation	.340*	.122	.804**	-							
	Sig. (2-tailed)	.012	.379	.000								
MAT_2	Pearson Correlation	.062	.148	.559**	.217	-						
	Sig. (2-tailed)	.657	.284	.000	.115							
BD_1 (n=51)	Pearson Correlation	.169	-.008	.343*	.417**	.076	-					
	Sig. (2-tailed)	.235	.955	.014	.002	.597						
BD_2 (n=52)	Pearson Correlation	-.127	.093	.122	.110	.121	.477**	-				
	Sig. (2-tailed)	.368	.513	.387	.438	.394	.000					
LC_1 (n=52)	Pearson Correlation	.685**	.132	.370*	.444**	.147	.370**	-.004	-			
	Sig. (2-tailed)	.000	.351	.007	.001	.299	.008	.976				
LC_2 (n=52)	Pearson Correlation	.685**	.270	.347*	.392**	.101	.417**	.062	.811**	-		
	Sig. (2-tailed)	.000	.052	.012	.004	.478	.002	.664	.000			
LING_1 (n=47)	Pearson Correlation	.032	.239	-.037	-.036	-.150	.219	.316*	.064	.109	-	
	Sig. (2-tailed)	.833	.105	.806	.811	.315	.148	.032	.677	.477		
LING_2 (n=50)	Pearson Correlation	.152	-.030	.103	-.036	.039	.074	.171	.052	.164	.372**	-
	Sig. (2-tailed)	.291	.835	.475	.807	.787	.616	.240	.728	.264	.013	
** Correlation is significant at the 0.01 level (2-tailed). * Correlation is significant at the 0.05 level (2-tailed). IELTS=Listening Test; PAT= Phonological awareness test; MAT= Morphological awareness test; MAT_1= Sentence completion; MAT_2= Word relation; BD_1= Contextual grammar 1; BD_2= Contextual grammar 2; LC_1=Listening comprehension; LC_2= Listening and note taking; LING_1= Linguistics 1; LING_2= Linguistics 2												

5. CONCLUSION AND DISCUSSION

The present chapter is devoted to providing a summary of the findings of the current study as well as a discussion and suggest implications regarding these findings. The limitations of the study and suggestions for further studies are also provided in this chapter.

5.1. Discussion of the Findings

In this part, major findings are summarized and discussed with regards to the existing studies in the literature.

The relationship between Turkish EFL learners' listening comprehension scores and their phonological awareness levels. The phonological awareness test used as the primary data collection instrument in this study consisted of six different tasks targeting four different levels of the awareness under investigation, namely rhyme recognition, rhyme production, phoneme categorization and blending phonemes. The total scores obtained from PAT implied that the participants have a high level of grasp of the phonological awareness at the mentioned levels. In other words, descriptive statistics of the phonological awareness test indicated that the participants of this study showed a great level of phonological awareness, pointing out to the ability to understand that oral language can be divided into smaller components and to be able to recognize and manipulate these smaller components at a proficient level (Pan, Song & Su, 2016; Cassady, Smith and Huber, 2005; Chad & Dickson, 1999). The results also indicated that 2nd year ELT learners who participated in this study have “shallow” levels of phonological awareness although their scores of PAT are relatively higher than expected prior to the data analysis. The reason of this might be attributed to the nature of the testing instrument, namely PAT used in our study. As Stanovich (1992) suggests the tasks included in the first two parts of PAT might rely more on the shallow end of the continuum since they were targeted to measure the participants’ awareness at the rhyme level although deeper levels of sensitivity were targeted in the parts 3-4-5-6 with phoneme categorization and phoneme blending tasks. Although the target items in the questions were not written, the options were both written on the paper and heard by the students, which might be another factor the students got relatively high results since they provided orthographic clues as well as auditory help. However, it is important to mention that the literature suggests

providing the options is a good idea to be able to eliminate the individual differences might occur during the test.

Correlation analysis, on the other hand showed that the scores obtained from PAT are positively and moderately correlated with the listening comprehension scores of the participants. The results of the current study do not comply with the study conducted by Park (2015) where the relationship between phonological awareness and degree of foreign accents was found to be statistically non-significant. According to Mihara (2015), the effect of phonological input as a pre-listening activity was found to be statistically non-significant although the participants reported that they benefitted from pre-listening activities involving phonological input. Therefore, the results yielded from the current study do not comply with Mihara's study.

However, the statistical analysis of the current study was similar to another study conducted with L2 learners. Mayberry (2006) found out explicit phonological awareness instruction in L2, remarkably facilitates the overall listening comprehension of learners of Spanish as an L2. The study by Li, Cheng and Kirby (2012), similarly produced results supporting our findings. Despite their shortcomings, both studies showed that show that individual differences in sensitivity to phonological units in the oral language significantly influences the listening ability in a foreign language.

A reason of the different results obtained from the current study than the aforementioned studies might be the number of items used to test different levels of phonological awareness in this study. Although, different levels of the skill under investigation was targeted in PAT, for each different level only 5 questions were used. There were six parts, two of which targeted the rhyme recognition and rhyme production, three aimed to detect the odd sound in the beginning, final and middle positions of the word and the last part asked the participants to blend the phonemes they heard separately into a word and recognize it among for options. Among these levels of the phonological awareness, the most advanced is to be able to blend phonemes into words, which only had 5 questions. However, it is important to note that PAT is the first step in developing an instrument to measure phonological awareness at different complexity levels while also allowing for data collection from multiple participants in one sit. In a similar vein, it is important to keep in mind that different data collection instruments used in the studies mentioned above, the number of participants, the nature of data collection and the

procedure of data analysis is quite divergent. In Park's study (2005), the data was obtained solely from 12 adult ESL learners and it was analysed according to how 4 native speakers perceived the participants' foreign accents, therefore the study should be evaluated critically. On the other hand, the results of the study by Mayberry (2006) posits a more reliable research design with fewer and less critical limitations.

The relationship between Turkish EFL learners' listening comprehension scores and their morphological awareness levels. The findings of the descriptive statistics showed that the participants of this study have a good grasp of the following derivational suffixes: **-tion, -ist, -(i)ty; -ate, -ize, -fy and -ous, -ive, -al**. It means, the participants are able to reflect on and manipulate the morphemes as well as recognize roots, suffixes and apply the word formation rules of English to new lexical items they encounter to a great extent (Kuo & Anderson, 2006; Aksoy, 2015). The fact that the scores of the participants from the second section of MAT (Word Relation) were considerably higher than their first section (Sentence Completion) results can also be accepted as a significant finding. It might suggest that the participants are better at judging whether two words are morphologically related to each other than identifying suffixes and their grammatical functions in a given context. The high level of morphological awareness among the 2nd year ELT students can be attributed to the fact that they received explicit instruction on English language morphology within the context of their formal education throughout the first two years in the department. It can also be stated that although the test was found to be a reliable instrument for the prior study, it did not provide the same results for the target group in the current study. According to many scholars when the target participant group changes, a new pilot session is required to test the instrument to see if the measuring tool would yield reliable results. Therefore, the reason that the results of the MAT is relatively high when compared to IELTS listening might be because the instrument did not work as estimated for this target learner group.

Apart from descriptive analysis, correlation analysis was conducted to investigate the effect of morphological awareness on listening comprehension scores of the participants. The results revealed a positive correlation between the two variables, though regression analysis shows the effect size is only small. This particular finding might suggest that the participants tend to score higher from the morphological awareness test if their scores from the listening comprehension test are high as well. When these results

are compared to the studies conducted by Droop and Verhoeven (2003), Jeon (2011), Karimi (2013) and Li and Kirby (2014) it can be said that the numbers are not quite compatible. The aforementioned studies found either strong or moderate positive correlation between the two variables under investigation, while in this study the correlation is positive but weak. However, the results of our study yielded similar results with the study by Kieffer et al. (2013). In their study with 101 Spanish-speaking minority learners, they reported that morphological awareness has no significant correlation with listening comprehension of the participants although their findings suggested the moderate to strong correlations between the morphological awareness and literacy measures (p. 710). On the other hand, the studies by Kieffer (2013) and Droop and Verhoeven (2003) are also limited by design as the measures of listening used in both studies were reported to have provided no printed cues whereas Jeon (2011) presented a written listening measure. Divergent findings might result from the differing measures of listening and morphological awareness in the studies annotated above.

The relationship between phonological awareness and morphological awareness. The studies which were conducted to examine if morphological awareness has a distinct role in reading rejected the idea that morphological awareness is secondary to phonological awareness (Nagy et. al, 2006; Deacon and Kirby, 2004; Singson, Mahony, & Mann, 2000). The researchers put forward that morphological awareness should not be perceived as a deeper level of phonological awareness, rather it should be seen as a distinct variable. Therefore, in the current study the nature of the relationship of these two linguistic components were evaluated through correlation analysis.

Having found a nonsignificant correlation between these two awareness types using PAT and MAT, the present study suggests that the two linguistic sources are not dependent on each other. In other words, one cannot expect a rise in the scores of participants in one awareness to produce any change in those of others. Therefore, the view that “morphological awareness is derivative of phonological awareness” (Fowler & Liberman, 1995) is estimated to be rather faulty when the findings of the current study are taken into account. Nagy et al. (2006) stresses that some factors explaining the divergent results are rooted in the linguistic aspects of the target words, such as phonological transparency and opacity in the tests. To illustrate, if the words are phonologically transparent, it means that the roots do not reflect any change after

followed by a suffix. However, if a word is phonologically opaque, then the suffix would shift the root of the target word, which would result in extra difficulty in detecting the derivational relationship between the root and the derived word because of the phonological change lexical item goes through. In the latter case, the role of morphology is, therefore less important. However, it does not imply that the role of morphology in listening should be disregarded, instead, perhaps the significance of the morphology should be associated with other linguistic tasks.

On the other hand, the view defending the role of morphological awareness on its own (Nagy et. al, 2006; Deacon and Kirby, 2004; Singson, Mahony, & Mann, 2000) might be accepted as correct to an extent although the correlation between the two variables are found to be nonsignificant based on the results of the present study. One reason for the findings could be attributed to the level at which phonological and morphological awareness were measured. This particular phenomenon is explained by Nagy et al. (2006) as follows:

“For example, morphological awareness might make more of a contribution to spelling than to decoding, because spelling rules often involve the nature of the last letter or last two letters in a base word that affect whether any letter is dropped or added when adding a suffix (e.g., dropping final e when adding -ing to refine to create refining or adding a vowel when adding -tion to add to create addition). The relative contribution of morphology and phonology to different literacy outcomes is also likely to change with development in different ways for different literacy outcomes.” (p.137)

To conclude, there are many ways morphology can contribute to other language skills at various developmental stages of learning. It might be better to evaluate the interconnectedness of morphology and phonology with alternative tasks and participant groups in different environments (i.e. non-English majors vs English majors) to be able to establish a more comprehensive reflection.

The contribution of compulsory courses on participants’ listening proficiency, phonological awareness and morphological awareness test scores. Statistically significant correlations were found between some of the compulsory course grades and listening, phonology and morphology test scores. One observation regarding the positive contribution of the two listening courses on listening scores can also be extended to the positive effect of the same courses on morphological awareness. In other words, INO 135 and INO 136 are two beneficial sources for the learners since they grant access to more

developed morphological awareness levels. Another course that has been confirmed as a positive impact on morphological awareness is INO 119 Contextual grammar I. On the other hand, the courses that were expected to have a positive impact on the participants' were unravelled not as useful as expected. Therefore, we might conclude that while some courses are found to be more useful than others in helping students develop more advanced levels of phonological and morphological awareness, some courses might contribute to other linguistic skills which were not one of the interests of the current study.

5.2. Conclusion

The present study aimed to investigate whether the role of morphological awareness and phonological awareness can be extended beyond their contributions on reading comprehension and applied into listening comprehension studies. Another aim of the present study was also to clarify the nature of the contribution of compulsory courses related to these linguistic knowledge sources. The results of our study add a humble amount of significance to the existing body of L2 listening research by helping to broaden and deepen our understanding of how linguistic components such as morphology and phonology might contribute to this neglected area of research as well as explaining the roles of instructional practices in this process.

For the purposes of the present study, the data collected from 54 2nd year ELT students through the means of IELTS listening test, morphological awareness test and phonological awareness test. These performance-based scores were correlated among each other to see which awareness types and listening skill have a statistically significant correlation. In addition to these performance scores a transcription analysis was conducted where the grades of the participants were analysed one by one and computed onto an Excel sheet to be correlated with their scores on IELTS, PAT and MAT to determine the nature of the effect of these compulsory courses on their listening proficiency, phonological and morphological awareness levels.

It is not unexpected that phonological awareness can predict listening proficiency scores of foreign language learners, although its effect size is not as big as expected according to the findings of the current study. Since phonological awareness deals with recognizing phonological representations of oral input, it is believed to enhance listening proficiency in a foreign language more in the participants who have higher levels of listening proficiency than the lower level participants according to Li and Kirby (2014).

Therefore, the reason there is a positive but moderate correlation between phonological awareness and listening proficiency scores of the participants could as well be attributed to that particular assumption.

The relationship between listening proficiency and phonology is considered as a significant positive moderate correlation while the same results could not be reached when examining the relationship of the “Cinderella” skill of language teaching and morphological awareness. However, the findings of the current study should be interpreted with caution since many factors are intertwined. Integration of morphological awareness raising activities are still significant in helping learners develop a comprehensive understanding of “learning to learn”.

The results of the research questions also hinted various possible correlations between L2 listening proficiency scores and some of the compulsory field-training courses for 54 second year ELT students while no compulsory course adds to the participants’ phonological awareness levels as explained by the present study.

5.3. Implications

The current study might bear significance regarding the classroom implications. Although having failed to reveal a unique contribution of morphological awareness and L2 listening among 2nd year ELT students, the present study found out phonological awareness has a moderate effect size on listening comprehension scores of the same group of participants. The findings suggested that the more advanced levels of the phonological awareness were not as difficult as was expected. Therefore, one possible suggestion for the classroom practice could be to integrate activities to make learners aware of different levels of phonology during listening lessons, such as syllable rhyming/deleting/ inserting and rhyme producing as well as more advanced level activities like phoneme blending, phoneme segmenting and phoneme deleting. Another suggestion when teaching listening comprehension skill could be to present listening strategies, such as top-down and bottom-up strategies to listeners. In top-down processes listeners rely more on their world knowledge although when adapting bottom-up strategies, they use phonological awareness to build their ways up from smaller components (i.e. phonemes) to bigger chunks (i.e. words) to interpret the aural input. Therefore, if the learners are instructed on how to make use of those listening strategies, they might get benefitted from their own phonological knowledge inventories.

Although the present study did not produce a meaningful correlation between morphological awareness and listening proficiency, there might be various explanations of this particular finding. Since integrated approach in teaching basic linguistic skills, like listening, might be argued to be supportive of the development of other skills as well, the activities that would sharpen the students' morphological awareness levels, such as suffix insertion/deletion, root finding, sorting words into grammatical categories might be also included in the courses offered in the department to overcome the lexical difficulties listeners might have.

It is also important to note that the phonological awareness test designed for the purposes of the current study, namely PAT might be seen as a step towards creating a test battery which will measure different complexity levels of phonological awareness efficiently and practically as opposed to available tests to measure the same awareness. It might be enhanced by adding more items at various levels of phonological awareness.

5.4. Limitations of the Current Study

The present study has a number of limitations stemming from its methodological nature, hence the results of it should be interpreted with caution. One possible source of limitation could be the number of the participants of this study, which was 117 at the first stage, though lowered to 54 after the initial data collection procedure due to the voluntary nature of the study. Although the number of participants was enough for the statistical analysis, the tests might have generated more reliable results with a greater population. However, it should be noted that after the data collection is completed, before missing data was extracted, the data regarding all three tests from all participants were computed into the SPSS program, and not surprisingly, the results did not reflect a major change regarding the scores of the tests. The mean scores of each test remained almost identical. Another important point to keep in mind regarding the results of the study is that PAT was designed by the researcher since phonological awareness tests available require a data collection procedure where the researcher needs to collect data from each participant individually in a separate session. Therefore, the need for a test which allows us to obtain the data from participants, preferably all at the same time in one sit emerged and PAT was designed modelling available tests.

PAT could have included various tasks such as phoneme counting, segmentation, substitution and deletion to test meta-phonological sensitivity of the learners. Similarly,

more advanced levels of the morphological awareness could be touched upon with other testing instruments or different questions in addition to MAT used in the present study. However, due to time constraints and impracticality, more questions or additional tests were avoided.

Qualitative data could be collected through interviews with the students to support the quantitative data obtained from the participants. That way, a more comprehensive picture could have been portrayed regarding the contribution of the compulsory and elective courses on the listening proficiency, phonological and morphological awareness of the participants. Demographic data could also be collected to see if there were bilingual or multilingual students among the participants to test the effects of knowing another language on the same variables in this study.

Lastly, despite all the participants were 2nd year ELT students, their overall English proficiency levels remain unknown to us; though according to what Feyten (1991) suggests, there is a strong link between L2 listening comprehension and overall L2 proficiency.

5.5. Suggestions for Further Studies

The current study is a humble attempt to model the potential intricate relationship between listening comprehension and phonological awareness along with the relationship between listening and morphological awareness in L2. To our knowledge, the current study is one of its kind in the Turkish EFL environment, therefore might posit an example for further studies. Therefore, the limitations of this study should be seen as suggestions for future studies. To be more precise, future studies might focus on different and more complex levels of both phonological and morphological awareness and conduct study with more participants. Also, since morphological and phonological awareness develop at younger ages, more studies have been conducted in L1 environments, therefore, young learners in EFL or ESL environments could be targeted in future studies. Another suggestion might be to conduct interviews with the participants, in addition to collecting quantitative data, to have a deeper insight regarding the thought processes they undergo while answering the tests. The same study could be replicated with both bilingual/multilingual and monolingual participants to see how knowing another language effects the linguistic awareness of a learner. Similarly, to test the effect of explicit instruction on those awareness types and listening comprehension, the same

design could be extended to non-ELT majors in comparison to ELT major students with a correlational design. Another suggestion might be to conduct a similar study with an experimental design to test the contribution of the awareness-raising tasks implemented as part of the courses offered in the departmental studies.

Students might be tested on reading comprehension as well to compare the correlations of the two linguistic components with both of the receptive skills in language learning. Since the literature suggests the linguistic components investigated in this study, namely phonological and morphological awareness are mostly related to reading comprehension and vocabulary, future studies might be designed so as to include a comparison between the effects of the two variables on both reading and listening comprehension scores of the same group of participants as well. Another consideration when designing future studies could be to include participants who have the same overall English proficiency levels as well as students who are in their 1st year, 3rd year and 4th year in an ELT program to unveil the changes in the performances of the participants at various developmental stages. Last but not least, the performances of the same group of students could be followed closely throughout the years in order to conduct a case study which would help deepen the insights regarding the advancement of listening comprehension skill, phonological and morphological awareness levels.

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APPENDICES

Appendix 1-Listening Comprehension Test (IELTS Sample) and Answer Key

Questions 1-5

Example question	Answer
Destination?	Harbour City

Complete the notes below.

Write no more than two words and/or a number for each answer.

Questions: transport from Bayswater
a. Express train leaves at (1) b. Nearest station is (2) c. Number 706 bus goes to (3) d. Number (4) bus goes to station. e. Earlier bus leaves at (5)

Questions 6–10

Complete the table below.

Write no more than one word and/or a number for each answer.

Transport	Cash fare	Card fare
Bus	(6) \$	\$1.50
Train (peak)	\$10	\$10
Train (off-peak) – before 5pm or after (7) pm)	\$10	(8) \$
(9) ferry	\$4.50	\$3.55
Tourist ferry ((10))	\$35	–
Tourist ferry (whole day)	\$65	–

Questions 11–14

Which counsellor should you see?

Write the correct letter, A, B or C, next to questions 11–14.

A	Louise Bagshaw
B	Tony Denby
C	Naomi Flynn
Questions	
11) if it is your first time seeing a counsellor	
12) if you are unable to see a counsellor during normal office hours	
13) if you do not have an appointment	
14) if your concerns are related to anxiety	

Questions 15-20

Complete the table below.

Write no more than two words for each answer.

Workshop	Contact	Target group
Adjusting	what you need to succeed academically	(15) students
Getting Organised	use time effectively, find (16) between study and leisure	all students
Communicating	talking with staff, communicating across cultures	all students, especially (17)
Anxiety	(18), breathing techniques, meditation, etc.	students about to sit exams

(19)	staying on track for long periods	(20) students only
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Questions 21–30

Complete the notes below.

Write no more than three words for each answer.

Questions
Novel: (21)
Protagonists: Mary Lennox; Colin Craven
Time period: Early in (22)
Mary moves to UK – meets Colin who thinks he’ll never be able to (23) They become friends.
Point of view: “Omniscient” – narrator knows all about characters’ feelings, opinions and (24)
Audience: Good for children – story simple to follow
Symbols (physical items that represent (25)): • the robin redbreast • (26) • the portrait of Mistress Craven
Motifs (patterns in the story): • the Garden of Eden • secrecy – metaphorical and literal transition from (27)
Themes: Connections between • (28) and outlook • (29) and well-being • individuals and the need for (30)

Questions 31–35

Complete the table below.

Write one word only for each answer.

Time Perspectives		
Time Zone	Outlook	Features & Consequences
Past	Positive	Remember good times, e.g. birthdays. Keep family records, photo albums, etc.
	(31)	Focus on disappointments, failures, bad decisions.
Present	Hedonistic	Live for (32) ; seek sensation; avoid pain.
	Fatalistic	Life is governed by (33) , religious beliefs, social conditions. Life's path can't be changed.
Future	(34)	Prefer work to play. Don't give in to temptation.
	Fatalistic	Have a strong belief in life after death and importance of (35) in life.

Questions 36–40

Choose the correct letter, A, B or C.

Questions
36) We are all present hedonists A) at school B) at birth C) while eating and drinking
37) American boys drop out of school at a higher rate than girls because A) they need to be in control of the way they learn B) they play video games instead of doing school work C) they are not as intelligent as girls
38) Present-orientated children A) do not realise present actions can have negative future effects

B) are unable to learn lessons from past mistakes
C) know what could happen if they do something bad, but do it anyway
39) If Americans had an extra day per week, they would spend it
A) working harder
B) building relationships
C) sharing family meals
40) Understanding how people think about time can help us
A) become more virtuous
B) work together better
C) identify careless or ambitious people

You now have ten minutes to copy your answers to all four sections of the Listening test on to your answer sheet. Do that now.

You have reached the end of your Listening test; download the answers and see how well you have done.

IELTS Listening practice test 1

Answers

SECTION 1

1. 9.30 (am)
2. Helendale
3. Central Street/St
4. (number/no./#) 792
5. 8.55 (am)
6. 1.80
7. 7.30
8. 7.15
9. commuter
10. afternoon

SECTION 2

11. C
12. C
13. A
14. B
15. first/1st year
16. (right) balance
17. international/foreign (students)
18. relaxation
19. motivation
20. research/advanced

SECTION 3

21. The Secret Garden
22. (the) 20th/twentieth century
23. walk
24. motivations/motivation
25. abstract ideas
26. roses
27. dark(ness) to light(ness)
28. health
29. environment
30. human companionship

SECTION 4

31. negative
32. pleasure
33. poverty
34. active
35. success
36. B
37. A
38. C
39. A
40. B

Appendix 2- Phonological Awareness Test (PAT)- Recording Version

Part 1. Rhyme Recognition

In this part you will hear a word. You need to choose another word that rhymes with the word you hear. Circle the correct option.

e.g. “**hat**” and “**bat**” rhyme.

Which word rhymes with **brown**?

- f. Drone b. Drown c. Clone d. Draw

“Brown” rhymes with “drown” in option B.

Now, it is your turn. Listen to the words and circle the correct answer. You will hear the words only once.

	A	B	C	D
e.g.	drone	drown	clone	draw
1. fat	cute	sat	fed	vet
2. shake	eight	snack	snake	paint
3. chair	clear	choir	care	chore
4. dump	dumb	bum	damp	grump
5. prizes	crisis	rises	plays	please

Now, you have ten seconds to check your answers.

Part 2. Rhyme Application

In this part you will hear a word. Write the word you hear in the first blank. Then, write a second word that rhymes with the word you hear in the second blank.

e.g. **hat** rhymes with _____ **cat** _____.

6. Summer rhymes with _____.

7. Decorate rhymes with _____.

8. **Spring** rhymes with _____.

9. **Year** rhymes with _____.

10. **Week** rhymes with _____.

Now, you have ten seconds to check your answers.

Part 3. Oddity- Beginning Sounds

In this part you will hear four words. You need to decide which word **starts with a different sound**. Circle the correct option.

e.g. **milk**, book, bank, break. “**Milk**” starts with a different sound. Which word below **starts with a different sound?**

- a. Crown b. Cruise c. Celebrity d. Cream

“Celebrity” starts with a different sound.

Now it is your turn. Which word **starts with a different sound?** Circle the word.

	A	B	C	D
e.g.	Crown	Cruise	Celebrity	Cream
11.	Physics	Practice	Finish	Fabric
12.	Whale	Wreck	Writing	Rhino
13.	Knife	Life	Nice	Knee
14.	Smell	Snake	Shower	Surprise
15.	Thorough	Thanksgiving	Trumpet	Theory

Now, you have ten seconds to check your answers.

Part 4. Oddity- Final Sounds

In this part you will hear four words. You need to decide which word **ends with a different sound**. Circle the correct option.

e.g. milk, book, silk, bring. “**Bring**” ends with a different sound. Which word below **ends with a different sound?**

- b. Occurred b. Puzzled c. Stopped d. Proud

“Stopped” ends with a different sound.

Now it is your turn. Which word **ends with a different sound**? Circle the word.

	A	B	C	D
e.g.	Occurred	puzzled	stopped	proud
16.	Smooth	teeth	tenth	filth
17.	Hand	bound	command	meant
18.	Handsome	cream	reform	clown
19.	Rumba	replica	alibi	coma
20.	Bang	long	thing	singe

Now, you have ten seconds to check your answers.

Part 5. Oddity- Middle Sounds

In this part you will hear four words. You need to decide which word **has a different middle sound**. Circle the correct option.

e.g. milk, book, silk, bring. “**Book**” has **a different middle sound**. Which word below has a **different middle sound**?

- a. How b. Aloud c. Crowd d. Poor

“Poor” has a different middle sound.

Now, it’s your turn, circle the word that has a **different middle sound**.

	A	B	C	D
e.g.	How	aloud	crowd	poor
21.	Bug	hut	hat	hug
22.	Frog	snob	pot	broke
23.	Put	nut	cut	but
24.	Point	quoit	moist	quick
25.	Allow	brown	throne	crown

Now, you have ten seconds to check your answers.

Part 6. Blending- Phonemes

In this part you will hear each sound of a word separately. You need to choose the word you hear among the options. Circle the correct option.

e.g. /'b/, /əʊ/, /t/ becomes /boat/. How about /'k/, /əʊ/, /t/?
 _____/coat/_____

Now it's your turn. Listen carefully and circle the word you hear among the four options.

	A	B	C	D
e.g. /'k/, /əʊ/, /t/	coke	cute	coat	goat
26. /'θ/, /ɔ:/, /t /	thought	fought	drought	great
27. /'eə/	hair	air	pair	are
28. /'dʒ/, /əʊ/, /k/	choke	joke	rake	juke
29. /b/, /i:/, /f/	believe	bleed	beef	beat
30. /s'/ /k/, /ɔ:/, /d/	scored	soared	swore	sword

Now, you have ten seconds to check your answers.

This is the end of the practice. Thank you for your participation.

Appendix 3- Morphological Awareness Test (MAT)

Section I. Sentence Completion Test

Instruction: Each of the following 20 sentences contains a blank and is followed by four words. Each of the four words has the same root (base) with a different suffix (ending). Chose the best word for each sentence.

Note: The four words may be new to you; therefore, use your knowledge of suffixes.

1. In spite of his _____, he did a great job.

A. dispribize B. dispribation C. dispribational D. dispribify

2. They _____ the data in the back office.

A. curfamic B. curfamation C. curfamate D. curfamity

3. Their solution for the problem is fundamentally _____.

A. torbatify B. torbative C. torbativize D. torbatuate

4. You can't even begin to _____ without modern equipment

A. equamanize B. equamanizable C. equamanity D. equamanive

5. The most _____ samples were not used.

A. birendal B. birendment C. birendalize D. birendify

6. They hope to _____ the two sides together.

A. uniromosity B. uniromify C. uniromous D. uniromative

7. Dr. Jones, a well-known _____, is speaking tonight.

A. circumtarious B. circumtarist C. circumtarify D. circumtarize

8. Please try to be as totally _____ as possible.

A. progenalism B. progenalize C. progenious D. progenify

9. His _____ is greatly admired.

A. superfilize B. superfilive C. superfilial D. superfilation

10. We should _____ the money that we need.

A. relaptification B. relaptian C. relaptify D. relaptable

11. Too much _____ is bad for the economy.

A. malburnity B. malburnify C. malburnicious D. malmurnable

12. Their progress was stopped by an unexpected _____.

A. postramify B. postramic C. postramity D. postramicize

13. You must _____ them quickly or you'll ruin the colors.

A. premanicism B. premanicize C. premanicity D. premanic

14. Desert animals are not normally _____.

A. commalianization B. commalious C. commalianism D. commalianize

15. They presented the highly _____ evidence first.

A. credenthive B. credenthification C. credenthicism D. credenthify

16. The story of the _____ was repeated every year.

A. vergalize B. vergaliat C. vergalify D. vergalist

17. He is so _____ that he offends almost everyone.

A. dichhopithify B. dichhopithification C. dichhopithial D. dichhopithity

18. The new equipment will _____ everything automatically.

A. transurbate B. transurbativity C. transurbatist D. transurbative

19. The breeders _____ their stock every four generations.

A. genilify B. genility C. genilification D. geniliar

20. All those models are _____ and old-fashioned.

A. ambilemptify B. ambilemptivist C. ambilemptity D. ambilemptive

21. If we can overcome its _____, we should complete the project on schedule.

A. antiflidify B. antiflidize C. antiflidacious D. antiflidicity

22. The meeting was highly _____ and invigorating.
A. loquarify B. loquarial C. loquarialize D. loquarialism
23. Please _____ these forms as soon as possible.
A. scribsumptist B. scribsumptious C. scribsuptian D. scribsumptize
24. She met her first _____ when she moved out west.
A. benedumptist B. benedumptify C. benedumtize D. benedumtuous
25. All the _____ specimens are kept in a separate place.
A. tribacize B. tribacion C. tribacism D. tribacious
26. No one liked the manager's obvious _____.
A. spectitious B. spectitionalize C. spectition D. spectitive
27. He wants to _____ while he still can.
A. fidamoration B. fidamorian C. fidamorational D. fidamorate

Section II: Word Relation

The purpose of this section is to find out if the participants could identify whether the two words are morphologically related or not. Some of the test items in this section have been taken from Mahony (1993), while some others have been designed accordingly by the researcher.

Instruction: Below are 15 pairs of words followed by YES and NO.

For each pair, if you think that the second word comes from the first word, circle the word YES. If not, circle NO.

- | | |
|---------------------------------------|--------|
| Practice Items: creative - creativity | YES NO |
| part - party | YES NO |
| 1. magic - magician | YES NO |
| 2. man - many | YES NO |

3. sun - sunny	YES	NO
4. maintain - maintenance	YES	NO
5. fry - Friday	YES	NO
6. consume - consumption	YES	NO
7. corn - corner	YES	NO
8. numb - number	YES	NO
9. conscious - consciousness	YES	NO
10. dust - industry	YES	NO
11. active - activist	YES	NO
12. let - letter	YES	NO
13. win - winner	YES	NO
14. intelligent - intelligence	YES	NO
15. flu - affluence	YES	NO
16. popular - popularity	YES	NO
17. chair - charity	YES	NO
18. environment - environmentalist	YES	NO
19. ear - earth	YES	NO
20. apple - applause	YES	NO

Appendix 4- Individual scores the participants received from each testing instrument

Participants	# of Corr. Ans. on IELTS	IELTS	PAT	MAT	MAT-1	MAT-2
1	19	5,5	25,0	43,0	23,0	20,0
2	32	7,5	29,0	47,0	27,0	20,0
3	15	4,5	26,0	43,0	24,0	19,0
4	28	6,5	24,0	45,0	26,0	19,0
5	26	6,5	27,0	44,0	25,0	19,0
6	17	5,0	22,5	40,0	22,0	18,0
7	24	6,0	26,0	46,0	26,0	20,0
8	23	6,0	26,0	47,0	27,0	20,0
9	30	7,5	27,0	44,0	24,0	20,0
10	27	6,5	26,0	44,0	25,0	19,0
11	29	6,5	30,0	47,0	27,0	20,0
12	30	7,0	27,0	42,0	25,0	17,0
13	28	6,5	27,5	43,0	23,0	20,0
14	30	7,0	27,0	39,0	20,0	19,0
15	22	5,5	10,0	47,0	27,0	20,0
16	28	6,5	28,5	46,0	26,0	20,0
17	22	5,5	25,5	45,0	26,0	19,0
18	25	6,5	26,5	46,0	26,0	20,0
19	28	6,5	25	32	24	18
20	13	4,5	22,5	42	22	20
21	30	7,0	27,0	44,0	24,0	20,0
22	27	6,5	26,5	43,0	24,0	19,0
23	30	7,0	29,0	47,0	27,0	20,0
24	15	4,5	23,5	47,0	27,0	20,0
25	29	6,5	22,0	45,0	25,0	20,0
26	27	6,5	27,0	43,0	24,0	19,0
27	23	6,0	21,5	45,0	26,0	19,0
28	32	7,5	27,0	47,0	27,0	20,0
29	34	7,5	30,0	47,0	27,0	20,0

30	21	5,5	23,0	45,0	25,0	20,0
31	18	5,5	22,5	40,0	22,0	18,0
32	27	6,5	26,0	40,0	24,0	16,0
33	18	5,5	24,5	41,0	23,0	18,0
34	23	6,0	24,5	45,0	25,0	20,0
35	21	5,5	23,0	41,0	21,0	20,0
36	31	7,0	27,0	41,0	21,0	20,0
37	28	6,5	23,5	42,0	24,0	18,0
38	29	6,5	22,5	41,0	23,0	18,0
39	27	6,5	26,5	40,0	21,0	19,0
40	25	6,0	28,5	46,0	26,0	20,0
41	30	7,0	25,5	45,0	25,0	20,0
42	23	6,0	23,5	43,0	23,0	20,0
43	32	7,5	26,0	45,0	27,0	18,0
44	32	7,5	26	47	27	20
45	29	6,5	28,0	46,0	26,0	20,0
46	22	5,5	21,5	40,0	22,0	18,0
47	26	6,5	25,0	46,0	26,0	20,0
48	30	7,0	23,5	47,0	27,0	20,0
49	27	6,5	26,0	46,0	26,0	20,0
50	36	8	22	46	27	19
51	26	6,5	29,0	46,0	26,0	20,0
52	22	5,5	21,5	43,0	25,0	18,0
53	21	5,5	22,5	38,0	18,0	20,0
54	26	6,5	22,0	46,0	27,0	19,0

Appendix 5- Research Ethics Committee Report

Evrak Kayıt Tarihi: 11.04.2019

Protokol No: 31215

Tarih: 29.04.2019



ANADOLU ÜNİVERSİTESİ
SOSYAL VE BEŞERİ BİLİMLER BİLİMSEL ARAŞTIRMA VE YAYIN ETİĞİ KURULU
KARAR BELGESİ

ÇALIŞMANIN TÜRÜ:	Yüksek Lisans Tez Çalışması
KONU:	Eğitim Bilimleri
BAŞLIK:	Contribution of L2 Morphological Awareness and L2 Phonological Awareness to L2 Listening Comprehension among English Major Adult Turkish EFL Learners İngilizceyi Yabancı Dil Olarak Öğrenen Yetişkin Türk Öğrencilerinin Yabancı Dilde Dinleme Becerilerine Yabancı Dilde Sözcük Biçim Bilgisi ve Yabancı Dilde Sesbilimsel Farkındalığın Katkısı
PROJE/TEZ YÜRÜTÜCÜSÜ:	Prof. Dr. Gül DURMUŞOĞLU KÖSE
TEZ YAZARI:	Eylül SÖZEN
ALT KOMİSYON GÖRÜŞÜ:	-
KARAR:	Olumlu
Prof.Dr. Emel ŞIKLAR (Başkan-İkt. ve İdari Bil. Fak.)	
Prof.Dr. T. Volkan YÜZER (Başkan Yardımcısı-Açıköğretim Fak.)	Prof.Dr. Esra CEYHAN (Eğitim Fak.)
Prof.Dr. Münevver ÇAKI (Güzel Sanatlar Fak.)	Prof.Dr. M. Erkan ÜYÜMEZ (İkt. ve İdari Bil. Fak.)
Prof.Dr. Handan DEVECİ (Eğitim Fak.)	Prof.Dr. Hasan TUTAR (İkt. ve İdari Bil. Fak.)

Appendix 6- INO 135 Listening Comprehension and INO 136 Listening Comprehension and Note Taking Courses Learning Outcomes

Learning Outcomes

- Recognizes and uses abbreviations and symbols.
 - Recognizes symbols and abbreviation.
 - Uses symbols and abbreviations while taking notes.
- Takes notes effectively.
 - Recognizes sequence markers, examples, key terms and definitions, cause-and effect relationships, lists, numbers and statistics, comparison and contrast, problem-solution relationships.
 - Marks important information and organizes notes

Learning Outcomes

- be able to recognize various questions and numbers
 - Responds to various question types.
 - Notes down numbers they hear.
- Distinguishes reductions and intonation, and recognizes idioms.
 - Define reductions in speech.
 - Distinguishes intonation.
 - Expresses idioms.
- Takes notes effectively.
 - Defines main ideas, supporting ideas, and details.
 - Makes inferences.
 - Organizes notes.

Appendix 7- INO 119 Contextual Grammar I Learning Outcomes

Learning Outcomes

- recognize various grammatical structures.
 - Defines grammatical structures.
 - Distinguishes the different types of grammatical structures.
- Describes grammatical structures.
 - Defines the functional and syntactic characteristics of the grammatical structures.
 - Compares the relevant structures.
 - Analyzes the contextual functions of grammatical structures.
- Applies the grammatical structures in oral and written language skills.
 - Uses grammatical structures appropriately in basic English courses.
 - Applies relevant structures in their ELT courses.
- Questions the appropriateness of any grammatical structure within the discourse and situational context.
 - Defines various functions of cohesion and coherence in context.
 - Applies grammatical relationship between form and function in various situations.

Appendix 8- Excel Sheet Showing Compulsory Course Grades

B	C	D	E	F	G	H	I	J	K	L	M
INÖ 119 BD-1	LG1	INÖ 120 BD1	LG1	INÖ 135 LC-1	LG1	INÖ 136 LC-1	LG1	INÖ 213 Ling-1	LG1	INÖ 214 Ling-1	LG1
49,2	DD	48,4	DC	41,5 61,5	FF CD	46,5	CD	65	BB	41,5	FF
76,6	BB	60,4	CB	92	AA	80	AB	68,45	BB	65,8	BC
62	CD	60,4	CB	51	DC	50	CD	60,95	BC	50,35	DC
79,8	BA	74,8	AB	90,5	AA	84,5	AB	73,8	AB	80,65	AB
78,4	BA	79,2	AA	73,5	BC	71	BB	73,5	AB	34,7	FF
83	AB	68	BB	67,5	CB	63	BC			9,5	DZ
75,2	BB	61,2	CB	78,5	BB	58,5	CB	42,45	DD	27,6	FF
70	CB	62,4	CB	75	BB	63,5	BC	66,6	BB	9,5	DZ
75,6	BB	46,4	DD	90,5	AA	77	BA	61,3	BC	37,95	FF
67,2	CB	41,6 58,4	FF CC	66	CB	43,5	DD	10,75	FF		
73,4	BC	69,6	BB	85	AB	88,5	AB	50,25	CC	14,25	FF
83,8	AB	73,6	AB	88	AB	77	BA	77,3	AB	73,25	BB
61,6	CD	71,6	BA	67	CB	65	BC	83,2	AA	68,1	BC
48 55,8	FF DC	35 44,8	FF DD	87	AB	74	BB	0 55,75	DZ CC	55,6	DC
84,8	AB	54,8	BC	87,5	AB	75	BA	6	DZ		
83	AB	75,2	AB	87,5	AB	85	AB	47,5	CD	61,7	CB
24,8 0 75,2	FF DZ BB	43 50,8	DD DC	71,5	BC	59,5	CB	5,2 37,3	DZ FF	0	FF
								66,25	BB	72,55	BB
68,6	CB	58,8	CB	74	BC	62	CB	36,5	FF	8	DZ
69,6	CB	76,8	AB	46	DD	43,5	CD	52,45	CC	54,9	CD
68,4	CB	59,2	CB	43 90,5	DD AB	85,5	AB	7,75	FF	6	DZ
72,2	BC	41,6 56	FF CD	76,5	BB	82	AB	60,25	CB	67,7	BC
76,8	BB	66,8	BB	89,5	AB	83,5	AB	65,55	BB	65,15	CB
75	BB	51,6	CD	59,5	CC	49	CD	61,3	BC	39,9	FF
74	BC	65,6	BC	90	AB	72,5	BB	42	DD	56,3	CD
78,4	BA	56,8	CC	64	CB	68	BC	68,2	BB	56,55	CD
69,6	CB	59,6	CB	84	BA	76	BA	60,75	BC	67,65	BC
79,8	BA	51,2	DC	88,5	AB	92	AA	61,2	BC	62,95	CB
83,8	AB	53,5	CC	0 43 93,5	FF DZ AA	89	AA	13,65 65	DZ BB	0 0 44,95	DZ FF FF
57,2	CD							52,95	CC	10,75	DZ
72,2	BC	54,8	CD	58	CD	53	CC	44,95	DC	32,65	FF
65,4	CC	50	DC	69	BC	68,5	BC	52,7	CC	43,8	FF
72	BC	59,6	CB	58	CD	63,5	BC	35,5	FF	51,15	DC
71	BC	71,2	BA	74,5	BC	57,5	CB	37	FF	0	DZ
61	CD	56,4	CC	62,5	CC	49	CD	14,25	FF	44,15	FF
70,4	CB	53,2	CD	74	BC	74,5	BB	52,75	CC	51,9	DC
71,2	BC	56,8	CC	76,5	BB	74	BB	44,25	DC	57,05	CD
53,2	DC	44,8	DD	81	BA	59	CB	36,75	FF	46,45	DD
61	CD	56,4	CC	54	CD	54	CC	45,2	DC	48	DD
64	CC	47 21,6 58,8	DC DZ CC	66,5	CB	59,5	CB	39,5 12,45	DD DZ		
68	CB	45,2 54,4	DD CD	82,5	BA	79,5	AB	4,75	DZ	41,2	FF
57,4	DD	40,5 45,2 56,4	FF DD CD	73	BC	52,5 74	CD BB	35 4,75	FF DZ	29 56,05	FF CD
74,4	BC	56	CD	82,5	BA	87,5	AA			35,8 7,75	FF FF
53,8	DC	47,6	DD	70	BC	75,5	BA	26,75	FF	49,25	DD
76,8	BB	49	DC	70,5	BC	72,5	BB	0,8 00	DZ DZ	52	DD
49,8	DD	39,6 45,2	FF DD	68	CB	59	CB	51,95	CC	61,55	CB
83,6	AB	73,6	AB	69	BC	69,5	BB			69,55	BB
73,4	BC	55,6	CC	82,5	BA	76,5	BA			61,25	CC
				72	CB	53,5	DC				
83	AB	56,8	CC	81	BA	69	BC	46,45	DC	50,65	DC
79	BA	69,2	BB	78	BB	73,5	BB			78,4	BA
74,6	BC	58	CC	72	BC	64	BC	64,45	BB	61,05	CC
80	BA	68,8	BB	67,5	CB	64,5	BC	75,35	AB	73,7	BB
73,4	BC	72	BA	70,5	BC	66,5	BC			83,8	AB
INÖ 119 BD-1	LG	INÖ 120 BD2	LG2	INÖ 135 LC-1	LG3	INÖ 136 LC-2	LG4	INÖ 213 Ling-1	LG5	INÖ 214 Ling-2	LG6