IDENTIFYING FACTORS RELATED TO STUDENTS' ENGLISH
PROFICIENCY LEVELS THROUGH A SEGMENTATION METHOD

A MASTER'S THESIS

BY

BUKET BEKDAŞ

THE PROGRAM OF CURRICULUM AND INSTRUCTION
İHSAN DOĞRAMACI BİLKENT UNIVERSITY
ANKARA

MAY 2015

To my family

IDENTIFYING FACTORS RELATED TO STUDENTS' ENGLISH
PROFICIENCY LEVELS THROUGH A SEGMENTATION METHOD

The Graduate School of Education

of

İhsan Doğramacı Bilkent University

by

Buket Bekdaş

In Partial Fulfilment of the Requirements for the Degree of

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THESIS TITLE: IDENTIFYING FACTORS RELATED TO STUDENTS'
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BUKET BEKDAŞ

MAY 2015

I certify that I have read this thesis and have found that it is fully adequate, in scope and in quality, as a thesis for the degree of Master of Arts in Curriculum and Instruction.

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ABSTRACT

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PROFICIENCY LEVELS THROUGH A SEGMENTATION METHOD

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English is regarded as the common language all over the world. It is used as the

language to communicate in politics, economy, tourism, and education in addition to

many other fields. As the need to communicate in English increases, teaching

English as a foreign language and testing of English become more significant in

Turkey as well as worldwide, and methodologies for the development of proficiency

in English has already become a predominant research area. This study aimed to

explore via a segmentation method the relationship between reading and listening

sub-dimensions of English language proficiency and selected background factors

related to high school and university placement examination. The research was

conducted at a foundation university, in Ankara, Turkey. The sample consisted of

645 students. The data were provided by university database. The results revealed

different predictor variables for reading and listening proficiency.

Key words: Proficiency in English, high school type, academic achievement

ÖZET

BİR KÜMELEME YÖNTEMİ İLE ÖĞRENCİLERİN İNGİLİZCE DİL
YETERLİLİKLERİNE İLİŞKİN FAKTÖRLERİN BELİRLENMESİ

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İngilizce tüm dünyada ortak dil olarak kabul görmektedir. Politika, ekonomi, turizm ve eğitimi de içeren birçok alanda iletişim dili olarak İngilizce kullanılmaktadır. İngilizce iletişim kurmaktaki ihtiyaç arttıkça yabancı dil olarak İngilizce eğitimi ve İngilizce sınavları Türkiye'de de tüm dünyada olduğu gibi giderek önem kazanmaktadır ve bu sebeple İngilizce yeterliliği pek çok araştırmanın konusu olmaya başlamıştır. Bu çalışma bir kümeleme yöntemi kullanarak, İngilizce yeterliliğinin alt boyutları olan dinleme ve okuma ile lise türü ve üniversite sınavlarının bazı seçilmiş faktörlerinin arasında nasıl bir ilişki olduğunu araştırmayı hedeflemiştir. Araştırma Ankara, Türkiye'de bir vakıf üniversitesinde gerçekleştirilmiştir. Katılımcılar 645 öğrenciden oluşmaktadır. Veriler üniversite veri tabanı tarafından sağlanmıştır. Sonuçlar dinleme ve okuma yeterliliği için farklı yordayıcı değişkenler ortaya çıkarmıştır.

Anahtar Kelimeler: İngilizce yeterliliği, lise türü, akademik başarı

ACKNOWLEDGEMENTS

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CHAPTER 1: INTRODUCTION

Introduction

English is used worldwide in a variety of fields and is used as a medium for global communication (Jeraltin Vency, & Ramganesh, 2013). Graddol (2007) suggests that English has spread due to globalization and likewise globalization has spread owing to English. In an increasing number of international companies, workers are supposed to communicate in English. In popular culture, many games are produced in English. English is also the language that is most commonly used within the academic field. As a consequence of the need to communicate in English, several forms of assessment are being utilized to gather information on language learners' abilities and/or achievement in using the language (Brindley, 2006). This study focused on the test scores of a language proficiency exam and with variables related to a number of student background factors.

Background

English is regarded as the global language of the contemporary world (Stephen, Welman, & An, 2004). English is being more widely used in international contexts and this causes English programs to be more preferred (Matsuda, 2012). As Turkey is in the process of becoming a member of European Union, foreign language learning is being required both for state and private schools in Turkey (Demirel, 2005; Yılmaz & Akcan, 2012). In the curriculum of Turkish schools, both in secondary and tertiary levels, English is selected as the dominant foreign language to

be taught as it is the international language in communication, science, and technology (Genç, 2004).

Proficiency of language is tested by measuring the ability of an individual's language use and communication skills in the learned language (Stephen et al., 2004). In Turkey, students who are non-native speakers and have been qualified to attend an English-medium university must prove their proficiency in English to pursue their studies. Therefore, students are given options to prove their proficiency by taking Test of English as a Foreign Language (TOEFL), International English Language Testing System (IELTS) or, specifically in Turkey, YDS (Foreign Language Proficiency Exam). Otherwise, they need to take a proficiency test administered by the university where they plan to study.

Teaching English as a foreign language in Turkey differs according to the high school a person attends, although there is a common curriculum mandated by the Ministry of National Education (MoNE). At the end of middle school, students take the High School Entrance Exam (HSEE) to be able to enter Anatolian or Science high schools. The main high school type groupings are social sciences, science, Anatolian, vocational, technical, and teacher training high schools (Bahar, 2013b). As of 2014, with the new regulation in high school education, the high schools are moving towards being mainly grouped as Anatolian and Anatolian religious high schools. In MoNE curriculum, the weekly hours for English show differences with regard to grade level and high school type. Students in Anatolian High schools take four hours of English from the 10th grade to 12th grade. At Science High Schools, the English hours are seven for 9th graders and three from 10th grade to 12th grade, each week. At General High Schools, students get three hours of English in 9th grade and

from 10th to 12th grade this number diminishes to two hours per week (Ministry of Education Board of Education and Discipline, 2015). As a result of the difference in the weekly teaching hours of English, the amount of all subjects covered in English classes at each school may differ due to the regulations for different high schools in the Turkish education system.

In Turkey, the proficiency level of students is likely to change in line with the high school type and the implementation of its English program. Güneş (2011) concluded in her study that Science/Anatolian high school graduates' English proficiency level is higher than that of general high school graduates. This difference might have occurred due to the difference in the hours of English teaching in different school types.

In addition to the type of high school students attend, there are other factors affecting the proficiency of language. The high school students attend may influence their academic achievement, and research suggests that academic achievement may show differences according to the school type (Bahar, 2013a). The academic success of students may have a relationship with their language proficiency. That means that, provided students' proficiency level is high, they may get higher scores from the exams in their academic fields of study. According to Vinke and Jochems (2013), improvement of English proficiency expands the likelihood of academic success to a certain extent. Also, Sert (2006) found that there was a relationship between English language proficiency and academic attainment. The research suggests that the higher the students' proficiency is, the more probable it is for them to accomplish academic success because English language proficiency is associated with academic success (Stephen et al., 2004). The reasons behind this may be students' level of understanding the lectures and the exam questions presented to them in English.

Problem

A scrutiny of the MoNE standards of English teaching hours reveals that students have limited hours of English lessons and reaching the desired proficiency level is difficult. Some schools in Turkey, like Anatolian and Science high schools and private schools, differentiate the implementation and teaching of English as a foreign language in terms of weekly sessions. Some private institutions implement different curricula, like the International Baccalaureate Diploma Programme (IB DP), the International General Certificate of Secondary Education (IGCSE), or they design a syllabus paying attention to MoNE standards, for the subject area of English. In IB DP and IGCSE curricula, the medium of instruction for almost all subjects is English, and the students getting their high school education in one of these curricula are more exposed to English compared to students who get their high school education in the MoNE curriculum. In addition, students attending general high schools are deprived of the opportunity of being taught in such a program where exposure to English is more intensive. Abedi (2010) suggests English language proficiency may have an impact on students' performance on reading, science and math. The results of PISA 2003 revealed that students attending private high schools had better performance in reading, science, math, and problem solving (OECD, 2004). Based on the academic records of students attending the high schools whose curricula provide more exposure to English, there is a difference in performance among the students in the subject fields of math, science, and language proficiency, in addition to the results of Student Selection Exam (SSE), Programme for International Student Assessment (PISA), and Trends in International Mathematics and Science Study (TIMSS) (İş Güzel, 2009; Kalender & Berberoğlu, 2005; Kalender & Berberoğlu, 2009; Özbay, 2015).

The definition of language proficiency according to Llurda (2000) is to use the language by transforming the knowledge of the skills needed into practice. According to Davies (1997), a test used for language proficiency should measure the learned level of the foreign language. While designing these tests, training and the objectives in the syllabus of any course should not be considered within the content of a proficiency test (Hughes, 2003). Proficiency tests should not be prepared to meet the requirements of a particular program or curriculum; instead, they should assess test takers' overall ability at developmental levels (Coombe, Folse, & Hubley, 2007).

Students graduating from different high school types take the proficiency exams such as TOEFL, IELTS or the exams that the universities administer to prove their proficiency in English; hence, they are expected to have a valid score from one of these tests, although the academic background of the students differs. Students who take the proficiency test and fail are placed into preparatory schools based on the test scores. In the literature, it was shown that there may be several subgroups of students that can be defined under the whole group (Borden, 1995; Kalender, 2014; Marsh & Hocevar, 1991; Trivedi, Pardos, & Heffernan, 2011; Young & Shaw, 1999). Kalender (2014) and Young and Shaw (1999) concluded in their study that students have varying definitions for effective instructors across subgroups. Despite the fact that relationships between several factors and proficiency levels of students have been studied in the literature, these studies are mainly based on correlational studies. The number of studies about the profiles of students with different proficiency levels has been limited. This study seeks to fill this gap by defining student subgroups with varying background characteristics in English proficiency.

Purpose

This study aims to explore whether there are any student subgroups, among the students who intend to study in a foundation university in Ankara, at the post-secondary level with varying levels of English proficiency in Turkey, and provided there are any, to define the student subgroups. To this end, the whole body of students was segmented. Through this process, the study investigates whether there is a relationship between the proficiency level of students and some selected background factors. These variables are: academic tracks, placement ranks and the high school from which they graduated. A classification tree method was used to explore the significant predictors for the proficiency levels of English by dividing the student body into segments.

Research questions

The research questions of this study are:

1. What are the factors related to reading proficiency in English as a foreign language of post-secondary students intending to study in a foundation university in Ankara?

2. What are the factors related these students' listening proficiency in English as a foreign language?

3. Which are the student profiles with significantly better reading proficiency levels than the whole body?

4. Which are the student profiles with significantly better listening proficiency levels than the whole body?

Significance

This study provides information about the existence of student subgroups with significant differences compared to the whole body in terms of English proficiency levels.

English proficiency is measured through using different test types and examining the relation between gender, school background, social background and other factors (Güneş, 2011; Flege, Yeni-Komshian, & Liu, 1999; Engin, 2012). However, little research has been conducted about the relationship between achievement in high school and proficiency in English language. The findings of this study may provide information about the importance of student profiles for reading and listening proficiency levels in English. Consequently, the findings of this study may help teachers to evaluate students' background in teaching English as a foreign language.

Definition of key terms

University placement scores: In Turkey students take university entrance exams, and according to the results, they are placed in a university department which is on their selection list. Their placement is done with regard to the score they get from different tests in the university entrance exam, and it is called a university placement score.

Score type: Graduates of high schools in Turkey take SSE tests in relation with their academic tracks and/or their choice of departments at university. There are 18 distinct score types and students' scores are estimated based on the tests they take.

Placement rank: The students taking SSE tests are given an overall score according to the tests they have taken. Then, students' scores from SSE in the related score type are put in an order and students are given a placement rank in line with their scores.

State of education: This is used to define students' state of current education while applying for SSE. Students' state of education may vary. For instance, students could be currently attending a university, could be 12th grade students in high school, or could have taken the exam in previous years but had not been placed in a university.

Order of preference: Students who achieve the valid score from SSE make selections in accordance with their preferences to the university and to the department where they desire to continue their higher education. They can choose up to 30 universities, and order of preference refers to the order students make their selections.

High school types: In the Turkish education system there were various high school types; however, by 2014 the types of high schools are reduced to a few distinct types. These are Anatolian, Science, Social Sciences, Anatolian Teacher Training, Fine Arts, Sport, Anatolian Religious, Vocational and Technical, and Comprehensive Anatolian High Schools as well as Military, Open, and Private high schools.

High school academic tracks: In Turkey, students who finish grade 10 are required to select their academic tracks. The academic tracks consist of branches of Turkish and Social Sciences (Verbal), Turkish and Math (Equal-weighted), Science and Math (Quantitative), and Foreign Languages.

Language Proficiency: Language proficiency can be defined as the skill of using a foreign language. Tests are implemented to check an individual's ability in performing the language with regard to receptive and productive skills. Test such as TOEFL, and IELTS, can be used to check the achievement level of an individual in reading, writing, listening, and speaking as well as proficiency in grammar and vocabulary of the foreign language.

CHAPTER 2: REVIEW OF RELATED LITERATURE

Introduction

The main purpose of this chapter is to provide the literature relevant to the present study. For this purpose, the chapter begins with the discussion of high stakes examinations in general followed by the discussion of SSE, one of the most important high stakes exams in Turkey owing to its competitive nature. Then, language proficiency, proficiency of English, and English proficiency tests are explained. In addition, brief information about the studies on the relationship between language proficiency and academic success as well as some factors affecting language proficiency are provided. At the end of this chapter, a conclusion is included.

High-stakes examinations

High stakes means to be in a situation that will end either in winning or losing something. High stakes examinations can be described as the standardized exams somebody takes to attain a certificate, license, or a degree and they may be implemented as nationwide examinations like the Scholastic Aptitude Test (SAT), or as international examinations like the Test of English as a Foreign Language (TOEFL). High stakes examinations may enable people to gain advantages in their lives, such as the right to drive a car or being accepted to a university, however failure in these examinations may result in a negative outcome for the test takers (Embse & Hasson, 2012).

The results of high stakes examinations can be used to give important decisions about the test takers; therefore, they are accepted as substantial (Kane, 2002). The

fact that the results can influence a person's life on a large scale may create anxiety for the test takers and may hinder them from displaying their true performances (Embse & Hasson, 2012). The results of a study conducted in Ireland with lower and upper secondary students show that high stakes exams increase the amount of work for students, and that they reported feeling pressure and stressed because of the increase in their workload (Smyth & Banks, 2012). In instructional and curricular grounds, the results of high stakes tests can be used to make instructional decisions and to alter the way of teaching and learning (Kiany et al., 2012). Teachers may feel obliged to make changes in their instructions to help students to be successful in high stakes tests without considering their professional background and the students' need to adapt themselves to real world situations (Shepard, 1991). A research study suggests that individuals with low economic conditions feel more stressed than their privileged peers owing to the fact that they cannot afford private tutorials for preparing themselves for these tests (Nichols et al., 2012). These factors can be considered as disadvantages of high stakes examinations.

High stakes exams may also be advantageous. The results of high stakes examinations may be used as an indicator for the necessity of change in the curriculum to help students to reach better achievement levels. They may guide teachers in their planning, motivate students for success, and indicate students' academic performance and so help parents, teachers, and schools to understand their students' performance (Amrein & Berliner, 2002). According to Heyneman (2002), high stakes examinations have the benefit of relative objectivity as they are standardized. The outcome of high stakes examinations may be beneficial for countries where there are central examinations. As Amrein and Berliner (2002) state,

the scores of those tests can be used as measures to standardize the education in the country and provide equal chances for the test takers.

In Turkey, one of the most important high-stake examinations that have an immense effect on people's lives is SSE. SSE is the centralized university entrance examination that every secondary school graduate needs to take in order to pursue their education at the tertiary level. The number of test takers gradually increases every year. In 2014, 2,086,115 students applied to take SSE, 1,903,242 students had a right to make selections and 922,275 students were placed to higher education institutions among 1,239,761 students who had made a selection to be placed in a university program (ÖSYM, 2014a). When the number of the high school graduates taking the exam and the number of high school graduates placed in a university program are considered, SSE clearly plays an important role in individuals' lives due to its competitive nature.

Student selection examination (SSE)

Student Selection Examination (SSE) is a standardized test students need to take to enroll in a university and pursue their education at the tertiary level upon the completion of their secondary education in Turkey. The Center of Selection and Placement of Students in Higher Education Institutions (ÖSYM) prepares the exam and places the students in universities according to their scores and their preferences (ÖSYM, 2015).

Between 1974 and 1975, SSE was implemented in two sessions on the same day as one in the morning and one in the afternoon. From 1976 to 1980, it was implemented on the same day and session. After 1981, it has been turned into a two-stage exam, the first stage (SSE 1) applied in April, and the second stage (SSE 2) in June.

Students were eligible to take SSE 2 provided they were successful in SSE 1. Since 1987, students were given the option to take the tests related to their own academic track and personal choice and leave out the others. In 1999, the exam was applied in one stage as SSE consisting of 180 multiple choice questions in the subjects of Turkish language, math, geometry, biology, physics, chemistry, geography, philosophy, and history. With the change in 2006, the content of the exam was designed to include the high school curriculum, and the exam consisted of SSE1 and SSE 2 tests. With the introduction of these tests, students were required to answer SSE 1 test questions without taking their academic tracks into account. SSE 2 test were designed specifically for students to answer based on their academic tracks (ÖSYM, 2015).

Since 2010, the exam has been implemented in two stages like SSE 1 and SSE 2. Students take the first test, Higher Education Exam (HEE) in April and the successful ones can take the second test, Undergraduate Placement Examination (UPE) in June. HEE is like SSE 1 in which students need to answer all the questions regardless of their academic tracks. UPE is similar to SSE 2 and includes questions from the high school curriculum of the students' academic tracks. HHE and UPE are multiple choice tests. In HEE, there are 160 questions in the subjects of Turkish language, math, geometry, biology, physics, chemistry, geography, philosophy, religious studies, and history. Students are given 160 minutes for 160 questions. In order to take UPE, students need to get at least 140 from HEE. UPE consists of five sections and students can choose to take one or more than one based on their academic tracks and their selection of department in universities. UPE 1 includes questions from Math, and Geometry; UPE 2 from Physics, Biology, and Chemistry;

UPE 3 from Turkish Language and Literature, and Geography; UPE 4 from History, Geography, and Philosophy; UPE 5 from Foreign Languages (ÖYSM, 2015).

After taking both HEE and UPE tests, students' scores are calculated by adding their high school grade point average (GPA) to both exam scores. High school GPA has a minute effect on the overall score of the students. When the scores are announced students make selections for the universities and the departments they want to attend and the highest number of selections is 30, then, they are placed to a university in line with their preferences and the order of their preferences (ÖSYM, 2015).

Language proficiency, proficiency of English and English proficiency tests

Proficiency is regarded as a continuum (James, 1985, p.2) which means proficiency can be considered as a scale of related skills of language slightly and continuously changing in each level. As a continuum, proficiency is split into levels that include the gradually changing successive abilities in the use of language with the prior levels prerequisite to accomplish the following levels (Heilenman & Kaplan, 1985, p. 61). For the use of language "function, context/content, and accuracy" are accepted as the three basic criteria. Function represents the individual's ability to complete a task linguistically, like asking questions, or describing; context/content refers to the setting of the functions; and accuracy means the level of correctness in the delivery of the message. These three factors are used to assess the ability of an individual's language use and each factor extends in breadth as the level of proficiency increases (Bragger, 1985, p. 80).

Proficiency is defined as "the outcome of language learning"; and is about "learning the skills of the language" (James, 1985, p. 3). It necessitates the demonstration of skills and use of the language (Hielenman & Kaplan, 1985, p. 59). There are a

variety of forms of assessment to evaluate the language ability and/or the achievement of the language learners (Brindley, 2006). The amount of language a person has learned can be assessed with proficiency tests (Davies, 1997). Proficiency tests measure an individual's overall linguistic ability (Magnan, 1985, p. 121). These are criterion-referenced, standard-driven tests (Davidson, 2009). Speaking, writing, listening and reading skills are tested in a language proficiency test (ACTFL, 2012). The assessment of four skills may provide information for test takers whose cognitive ability levels differ. When four skills are measured separately, language learning fulfills its aim (Sankar, 2014).

According to O'Sullivan (2012), it is difficult to define the limits of the language that is used in a context, although identification of the specific aspects of language use, like vocabulary or syntax, can be described in a given context. In order to attain information about the cognitive processing used by the task performers, it is necessary to broaden the needs analysis of the language use given in a specific context (O'Sullivan, 2006). The aspects of language used should be specified and what language to use in the given context needs to be determined so as to assess the language proficiency level.

English language proficiency is utilized as a scale to measure the degree of an individual's relation in the fields of economy, business, politics, society, and education (Nallaya, 2012). There are a multiple options to measure the language proficiency level of language learners. Some of the proficiency tests are standardized international tests, such as Test of English as a Foreign Language (TOEFL), and International English Language Testing System (IELTS). These two high stakes tests measure the test takers ability in using the language skills in reading, listening, writing, and speaking. Based on the test taker's performance on the whole range of

tasks, an overall mark is given for TOEFL and IELTS (Roca-Varela & Palacios, 2013). Students may take these tests to validate their English proficiency and can choose to use the scores of these tests in the application of English-medium universities. The role of English proficiency is fundamental for students to attain their degrees in English- medium universities (Li, Chen, & Duanmu, 2010; Wardlow, 1999). Some universities accept an overall score for these tests, while some highlight the scores for each skill students should attain to pursue their education in English-medium universities.

Language proficiency is about to what degree a person can use reading, listening, writing, and speaking skills as well as how much a person can understand the language in context (Richards & Schmidt, 2002). In Turkey, English-medium universities require students to prove their English language proficiency, and for that reason accept scores of international exams like TOEFL or IELTS, as a proof of applicants' English language proficiency. Those universities also accept the scores of Foreign Language Examination (YDS), a language exam that is specific to Turkey. YDS is designed to find students' proficiency levels mostly in reading and slightly in writing. It focuses on grammar, vocabulary, and reading comprehension (Biltekin, 2004). In addition, some universities implement their own English proficiency examinations to test their applicants' proficiency level when applicants cannot provide the scores from one of these tests. Table 1 represents the levels and the basic skills the learners should have in a foreign language for each level (Council of Europe, 2001). Some universities take the Common European Framework Reference for Languages into consideration while preparing their proficiency exams and a number of English-medium universities expect the test takers to be at least at B2 level to be successful in the proficiency exams they implement.

Table 1
Common reference levels: Global scale

Proficient User	C2	Be able to understand real-life communication easily, summarize information from different spoken and written sources, express him/herself spontaneously, very fluently and precisely, even in more complex situations.
	C1	Be able to comprehend longer texts and make inferences, express himself/herself fluently and spontaneously, interact in social, academic, and professional communication, write clearly using well-structured, detailed sentences on complex subjects.
Independent User	B2	Be able to comprehend main ideas of complex texts, communicate without strain with a native speaker, write clearly on several topics, express his/her viewpoint by giving advantages and disadvantages.
	B1	Be able to understand information on commonly encountered matters, know how to interact on topics of interest, familiarity and personal experience, express opinions or reasons simply.
Basic User	A2	Be able to understand and use common speech for daily needs, give information about his/ her personal details such as his/her background, able to communicate with frequently used phrases.
	A1	Be able to use daily language for basic needs, introduce himself/herself, describe his/ her personal details, speak in a slow pace and understand slow talking.

The MoNE curriculum also refers to the levels in Common European Framework Reference for Languages. It suggests that upon the completion of each year at high school education, students getting their high school education will be able to reach the desired proficiency in English in their grade level.

Teaching English as a foreign language in Turkey

English has been taught as the prominent foreign language in Turkey since 1980 (Demircan, 1988; Biçer, 2015) due to its being regarded as the common language across the world. Moreover, the importance of teaching English as a foreign language in national curricula has gradually increased since 1980 (Dinçer, Takkaç, & Akalın, 2010). In Turkey, there are different high school types that provide differentiated hours of English teaching. The earliest state schools that had intensive English teaching, Anatolian high schools, started in 1955. In addition to a preparatory year of English, the teaching of subjects like science and math were also in English until the year of 2002 (Kirkgoz, 2007, p. 218). In addition to Anatolian high schools, Foreign Language Intensive high schools were established in 1994 (Kirkgoz, 2007, p. 218). State schools started teaching English as a foreign language in middle school at grade 4 in 1998 and continued until 2010 when students had four hours of English weekly. In 2010, with the new regulation in the curriculum, English language education began to be given in the second grade of primary school with a weekly three-hour schedule and in the middle school seven or eight hours a week (Biçer, 2015, p. 21).

With the new regulation in 2014, most of the General High schools were turned into Anatolian high schools (Biçer, 2015, p. 21), and as the education in high schools became four years in 2005, few schools continued to provide the additional

preparatory English year (Kirkgoz, 2007, p. 220-224). According to the high school type, the hours of English teaching may vary. In Anatolian high schools, students have four hours of English. In Science high schools there are three hours of English in a week, and in general high schools the number of English language teaching hours is two per week (Ministry of Education Board of Education and Discipline, 2015).

English-medium instruction in Turkey

The institutions using English as the instructional language is increasing in number in many countires in Europe and the Middle East including Turkey. In non-English-speaking countries, English-medium instruction in university level is rapidly growing with the foundation of international universities (Coleman, 2006; Costa, Coleman & Bialystok, 2012; Nurlu, 2015). The reason for the expansion in the number of English-medium universites may be the increasing use of English in the global community in the fields of business, technology, and science and its being regarded as the lingua franca. Turkey, like China, considering the need to communicate in the international arena has introduced English-medium instruction at the university level (Kırkgöz, 2009). In 1996, in order to address the need to communicate in English, the Turkish Higher Education Council required universities providing English-medium education to establish a foreign language centre. The purpose of these centres is to support students who have inefficient proficiency in English to continue their education in English-medium classes through offering English preparatory year to improve students' proficiency in English (Kırkgöz, 2009).

English-medium instruction aims at providing students with the efficient knowledge within their academic grounds and enhances their expertise in their future profession

to be able to face the challenges in an international area. Within that respect, English is regarded as "a tool for academic study", and gaining proficiency in English is accepted as "attaining content knowledge in academic subjects" (Taguchi, 2014). English is generally selected as a foreign language to be taught in both state and private universities in Turkey (Collins, 2010). English-medium universities require higher scores from SSE, and they are regarded as more advantageous because their graduates with attained proficiency in English are more likely to be hired by private companies or by state institutions thanks to their ability to adapt themselves in international communities with the help of their ability to communicate in English. Parents also favor English-medium universities in addition to high schools that give intensive education in English for their children's future job security (Collins, 2010, p. 99). Lueg and Lueg (2015) found that students from higher social strata tend to select English-medium universities to improve their proficiency in English and the prospects for their future professions.

The relationship between language proficiency and academic success

Success in education is generally referred as "academic success" (Bahar, 2013a). In the English- medium universities, the education is given in English and the level of English language proficiency plays a crucial role in the understanding of the lessons; therefore, students' proficiency level may have a positive impact on their success at the tertiary level. Cummins (1976) claimed that the cognitive ability of individuals was related with the development of their age-appropriate language proficiency. In other words, provided an individual had low cognitive advantages, it was likely to attain a low level of language proficiency. Research suggest that high cognitive ability is the prior condition for academic achievement, and GPA or school leaving

results is considered to indicate the level of academic achievement (Blustein, et al., 1986; Jones, 1990; Van Overwalle, 1989; Johnes & Taylor, 1980).

Çakan (2005) searched the relationship between French proficiency and cognitive style. The sample consisted of 258 grade eight students in Turkey. Students' French proficiency was tested and the results indicated no difference in proficiency between genders; students' cognitive style was found to be a significant predictor for their reading and listening scores. Andreou and Karapetsas (2004) found that high-proficient bilinguals were superior on cognitive measures compared to low-proficient bilinguals in the verbal tests. Stewart (2005) stated that learning a foreign language contributed to cognitive abilities and had a positive effect on achievement in reading and math.

Within the Turkish context, academic achievement of students can be related to the results of SSE, students' grade point averages in high school and in higher education. Karakaya and Tavşancıl (2008) conducted a research in Turkey investigating the relationship between different score types of 2003 SSE, high school grade point average (HGPA), and freshman grade point average (FGPA). The findings demonstrated that the relationship between HGPA and FGPA was higher than the relationship between SSE scores and FGPA.

A research study conducted in a state university in Ankara, Turkey examined the relationships of foreign language achievement with academic tracks in the SSE, the scores of SSE, and gender. The sample consisted of 1,289 students from the preparatory class of the school of English language. It was concluded that students whose academic track was Quantitative (Math-Science) were more successful in foreign language than students whose academic track was Verbal (Turkish-Social

Sciences). In terms of gender, female students had higher achievement levels than male students. There was a positive correlation between SSE scores and foreign language achievement for students of Quantitative academic track rather than other academic tracks. Also, the relationship between foreign language achievement and SSE scores were at a medium level. In addition, academic achievement was found to be the most important factor for foreign language achievement (Deniz, Gülden, & Apaydın Şen, 2013).

Some researchers found a significant relationship between academic success and language proficiency, while some concluded that there was no significant relationship between the two. Bayliss and Raymond (2004) found a significant relationship between language proficiency and academic success. Sert (2006) conducted a case study at an English-medium university in Turkey. The data were gathered both from the students and the lecturers using questionnaires. She found there was a relationship between English language proficiency and academic attainment. In another study that investigated the effect of English language proficiency on the academic success of black and Indian freshman students at university, the findings indicated that English language proficiency is associated with academic success (Stephen et al., 2004). The findings of another study conducted in Iran with 151 English Literature major students demonstrated that there is a significant relationship between students' academic success and language proficiency (Sahragard, Baharloo, & Soozandehfar, 2011).

As Vinke and Jochems (2013) concluded in their study, improvement of English proficiency increases the possibility of academic success to a certain extent. They claim that when one is good at English, academic success is more likely to occur because the classroom settings tend to be more context-reduced and cognitively-

demanding. Maleki and Zangani (2007) compared the results of the TOEFL test and students' grade point averages (GPAs) and found a significant correlation between them. This indicates that there is a significant relationship between proficiency in English and academic achievement.

Garcia-Vázquez et al. (1997) investigated the relationship among proficiency in English, Spanish and academic success. The findings concluded that there was a significant connection between English proficiency and standardized achievement scores. Research in Iran whose participants were medical students at a university suggested that English proficiency may be an influential predictor for medical students' academic success (Sadeghi, Kashanian, Maleki, & Haghdoost, 2013). Another study by Fournier and Ineson (2013) showed that students' level of English on the entry to the university had high predictive value for the successful completion of the Swiss hospitality course, which was instructed in English, and also for students' cumulative grade point average.

In contrast to research that suggested a significant relationship between academic success and language proficiency, a study conducted in Iran with 327 Iranian students in English Institutes found a low correlation between proficiency level and achievement scores (Aliakbari & Qsemi, 2012). A meta-analysis conducted by Wongtrirat (2010) concluded that there was a weak relationship between academic achievement, GPA or school leaving results, and TOEFL results of international students (p. 45). Similarly, research proposes that there is no significant relationship between second language proficiency and academic achievement (Stevens, Butler, & Castellon-Wellington, 2000).

To conclude, the findings of the research on the relationship between academic success and language proficiency show differences. While some studies suggest a relationship between language proficiency and academic success, others conclude no relationship exists between them.

Factors affecting proficiency of English

Attitude toward learning English

According to research there is an important relationship between students' attitudes and their academic success with respect to English courses (Kazazoğlu, 2013). Students' attitude in learning English affect their productivity and as Yang and Lau (2002) point out, university students believed in the importance of learning English as a foreign language to get better jobs. The fact that all of the students in Yang and Lau's (2002) study passed all of their English courses at the tertiary level may be the indicator that attitude is likely to affect the learning process of students. Kazazoğlu (2013) conducted a study in Ankara, Turkey with 8th and 9th graders. The study showed that if students had a positive attitude, it was more likely for them to attain success in their English courses in 8th and 9th grade.

İnal, Evin and Saracaloğlu (2003) conducted a study in Turkey. The purpose of the study was to explore the relationship between students' achievement and their attitudes towards learning English as a foreign language. Four hundred and twenty one students from different school types (Anatolian, Regular or Vocational high schools) comprised of the participants of the research. The findings showed there was no significant relation between high school type, second language, medium of instruction, parents education, living abroad, and students' achievement; however,

there was a high positive correlation between students' achievement and their attitudes.

Tılfarlıoğlu and Delbesoğlugil (2014) conducted a study at a public university in Gaziantep with 383 preparatory year students who were mostly graduates of public high schools and had varying levels of English language proficiency. They concluded that when students had self-esteem, self-regulation, and positive attitude toward language, students were more likely to attain better foreign language proficiency levels (p. 2227).

Socio-economic status, age and gender

The type of high school as well as the place of the school may have an effect on language proficiency. The environment that schools are surrounded by and the type of the high school may indicate the socio-economic status of place and students' parents, and these factors may influence students' language proficiency. In Turkey, the instruction in English may show differences according to the school the students attend, although there is a centralized curriculum in high school education. Students of high socio-economic status are more likely to attend private institutions where they start learning English in kindergarten. Nevertheless, students attending state schools start learning English in the second year of primary education. Therefore, the age students start their English education can be different in accordance with the school they attend.

Güneş (2011) examined the relationship between high school type and language proficiency using students' placement test scores which were applied at the beginning of the year to place students in classes according to their level in university preparatory class. There were 80 questions in the placement test and they

mostly focused on grammar and reading passages. When she checked the high school type of the participants, she found out that students were either from Anatolian or Science high schools, or from general high schools with the exception of one student from a private high school. The results indicated that students from Anatolian/Science high schools had higher scores in the placement test than the students of general high schools.

It is usually regarded that if started at a young age, it is more natural and easier to acquire a second language while as one gets older, the struggle for the acquisition increases (Harley, 1986). The results of research (Güneş, 2011) indicate that the starting age does not make one more advantageous in attaining language proficiency. Likewise, there is a research study concluding that there is no significant relationship for language acquisition between early and late learners (Cepik & Sarandi, 2012).

On the other hand, Krashen's (1982) theory claims that provided the natural exposure to second language occurs during childhood, acquirers are more probable to achieve higher proficiency than those who begin in adulthood. The findings of the study by Al-Quatami (2013) are in alignment with Krashen's claim. He found that exposure to English at an early age helps students to develop higher English proficiency levels. Moreover, a study conducted in Jordan examined the relationship of English language proficiency with the starting age of learning English. The sample consisted of students of a private elementary school and intermediate students of a public school. Students who started learning English at the age of five in private elementary school were found to be significantly better in performing the language than the public school students who started learning English at the age of 13 (Al-Zu'be, 2013).

Socio-economic status of students may also have an impact on students' higher education in terms of university entrance. Caner and Ökten (2013) found that the students whose families had higher incomes and were more educated, were more likely to be successful in university examination and select English-medium private institutions for their higher education. This result indicates that students with higher socio-economic status would prefer English-medium universities to improve their proficiency in English language. Additionally, the students who were placed in a public university had higher income levels than the ones who were not able to enter a university. Nonetheless, the study, which was conducted in two separate colleges in India, showed that economic status and the area of residence do not have significant impact on students' language proficiency (Jeraltin Vency & Ramganesh, 2013). This study revealed economic status and the place of the school does not have a considerable impact on language proficiency.

Another study, however, suggested a significant relation between academic achievement and students' expectation of achievement in foreign language and concluded that males were low-achievers and females were high-achievers in foreign language proficiency (Onwuegbuzie, Bailey, & Daley, 2000). According to statistical analysis of a research in Turkey at university level, gender does not influence the total scores of the students in language proficiency tests (Engin, 2012). Sarıcaoğlu and Arıkan (2009) examined the relationship between students' gender and intelligence types and the type of intelligences and the success in writing and listening in English as well as English grammar. The results demonstrated that the number of female students with linguistic intelligence was significantly higher than male students.

Conclusion

This chapter includes the summary of relevant literature, the background information about teaching English as a foreign language in Turkey, high stakes exams, proficiency in English, and some factors affecting language proficiency.

In the next chapter, information about the methodology of the present study, the sample, the method of data collection and analysis, and context will be provided.

CHAPTER 3: METHOD

Introduction

The main purpose of this study is to define post-secondary student subgroups which may show differences in English proficiency levels. In order to do this, segmentation was implemented to the whole body of students who had graduated from high school and were placed in a foundation university in Turkey. Using segmentation, the study investigated whether there is a relationship between the English language proficiency level of students and selected background factors. The variables included reading and listening test scores of the English language proficiency exam implemented by the university as well as placement ranks, academic tracks, the high school from which students graduated, gender, state of education, order of preference, and score type. These factors were chosen to create a student profile as they provide information about students' academic background. To find the significant predictors for the proficiency levels of English, a classification tree method was conducted through dividing the student body into segments.

Research design

The current study is mainly an exploratory study. Using a segmentation method, a large data including students' listening and reading proficiency levels and information about background factors set were explored to get in-depth information about subgroups which are hidden in the whole body. This method was used to answer the following research questions:

1. What are the factors related to reading proficiency in English as a foreign language of post-secondary students intending to study in a foundation university in Ankara?

2. What are the factors related these students' listening proficiency in English as a foreign language?

3. Which are the student profiles with significantly better reading proficiency levels than the whole body?

4. Which are the student profiles with significantly better listening proficiency levels than the whole body?

Context

The research was conducted in a foundation university in Ankara, Turkey. The institution was selected due to the convenience and acceptability. It is compulsory that all students who have passed the national university entrance exam and had a right to attend this university have a valid score in an English proficiency test before they begin their education at the tertiary level because the medium of instruction is English.

In Turkey, high school education is compulsory and lasts for four years and there are various high school types. One of the high school types is general high schools that accept every student graduating from elementary schools without specific conditions. There are science high schools, and Anatolian high schools which require students to attain high scores from HSEE so as to pursue their high school education. There are foreign intensive high schools some of which have an additional preparatory year for language learning. Also, there are private science high schools and foreign language intensive private high schools that necessitate higher scores from HSEE as well as

tuition for the services they provide. In addition to these, students may attend other types of high schools to complete their high school education.

Students at secondary level are required to take a test before they are placed into a high school in line with the regulations of MoNE. According to the test results, students make a selection to be placed in high schools like Anatolian and science high schools. These schools necessitate a higher result from HSEE than general high schools. Students who cannot attend Anatolian, science and foreign intensive high schools are placed in a general high school which has the closest location to their neighborhood. There are also private high schools which follow a different path in their registration policy. Considering the test results and the socio-economic conditions of the families and students, private high schools accept students into foreign language intensive private high schools or private science high schools. They get tuition from the students.

The conditions in language learning may differ in accordance with the high school a student attends although there is a common curriculum mandated by MoNE. In general high schools, in 9th grade, students have three hours of English weekly and from 10th to 12th grade, they have two hours each week. In Anatolian high schools, weekly hours of English classes are 6 for 9th grade, and 4 for 10th, 11th, and 12th grade. In science high schools, for 9th grade, there are 7 hours of English each week and 3 hours from 10th to 12th grade (MoNE, 2014). In private high schools the number of English classes may change according to the facilities the school provides for its students. Some schools hire native speakers of English to teach English classes. The teachers at private high schools are selected by the school administration and hired. However, in public high schools, teachers are appointed to the schools by MoNE. Upon graduation from the education faculties, teacher candidates take a test

to be appointed as a teacher at public high schools and according to their test results they make selections and then they are assigned to a school. Therefore, teacher qualifications may show differences in public and private high schools.

Sampling

As for sampling strategy, convenience sampling was utilized. The university was chosen owing to its being an English-medium university and requiring relatively better scores form SSE. The sampling consisted of the students' language proficiency exam results of reading and listening subtests from the year of 2013 and the university placement scores from the year of 2012, the year that students were placed at the university. The proficiency exam results and university placement scores of the students were provided by university's database. The sample consisted of 645 students. The proficiency test was implemented by the university in June 2013. The scores were provided by the university's database.

The sample included 321 (49.8%) males and 324 (50.2%) females. The state of education of the sample showed differences in itself. Five hundred and fifty-five students (86%) were senior students at a high school. Sixty four students (9.9%) took the national exam before but had not made any selection and had been placed to a department at tertiary level. Seventeen (2.6%) students were already registered in a program at a university. Three (.5%) students were placed in a university but had not been registered. Two (.3%) students had an undergraduate degree. Four (.6%) students' records had been deleted at a university.

The sample consisted of students with different high school types. From general high schools, there were 42 (6.5%) students. From Anatolian high schools, there were 319 (49.5%) students; 161 (25%) students were from foreign language intensive private

high schools. Private high schools, Social sciences high schools, military high schools, and Anatolian hotel management and tourism vocational high schools each had two (.3%) students included in the sample. There were 47 (7.3%) students from science high school; 38 (5.9%) students from private science high schools; 18 (2.8%) students from Anatolian teacher training high schools. Anatolian vocational high school, Anatolian vocational high school for girls, private evening high school, and industrial vocational high school each had one (.2%) student in the sample. There were four (.6%) students from open high school and four more students from Anatolian technical high school for boys. Students attending high schools other than Anatolian, Science, Private Science, General, and Foreign Language high school were grouped as "Other" in the classification tree for school type category.

Students who have been registered to the foundation university need to prove their English proficiency to be able to continue their education in their chosen faculty. To do this, they have to provide the school with a valid test score. The accepted tests and their valid scores are 87 from Yabancı Dil Sınavı (YDS) (Foreign Language Proficiency Exam), "C" from Certificate in Advanced English (CAE), "B" from First Certificate in English (FCE), and 87 from Test of English as a Foreign Language (TOEFL IBT). When students cannot provide any of these valid test scores, they have to take the test of the English proficiency examination implemented by School of English Language (SEL). The students who get a valid score from one of these tests pursue their education in their faculty. However, the ones who cannot pass any of them attend the English Language Preparatory Program for one to two years.

Instrumentation

The English proficiency examination is implemented in two stages. In the first stage, students answer 200 multiple choice questions that have different difficulty levels. The questions include grammar and vocabulary. There are five alternatives for each question and four wrong answers cancel out one correct answer. Students who pass the first stage can take the second stage. The second stage consists of four written papers and a speaking exam. The written and speaking exams are carried out on separate days. The four papers involve writing, reading, listening, and language. Listening and reading papers consist of multiple choice questions. The reading exam has three parts with reading texts of different lengths. The listening exam has two tasks based on lectures. Students take notes while listening and later in 25 minutes they answer questions after they finish listening to both lectures. The language exam is made of cloze tests that require filling in the gaps in the reading texts with appropriate words. In the writing exam, two optional topics are given to students and students select one and write a 350-word essay. Two students in pairs take the speaking exam and there is an interlocutor asking the questions and an assessor grading. The exam has two parts and lasts almost 15 minutes. In part one, three questions were asked and the questions are from basic to complex. In part two, students choose cards and talk about the chosen topic. Then, there are follow-up questions which are followed by a discussion. Provided that students do not fail either or both stages, they are accepted as students at SEL and placed at the suitable level in accordance with the results of the English proficiency examination Stage 1 and 2.

The reading test involved 35 multiple choice and short answer questions and listening tests included 30 questions. As these tests contain multiple choice

questions, it makes the questions easier to assess. The results of the reading and listening skills tests are referred to be more reliable than the writing and speaking tests because they are generally more objectively measured due to the nature of multiple choice and short answer questions (Sankar, 2014). Therefore, the present study utilized the listening and reading test scores to analyze the relationship of them with other factors related to Student Selection Examination (SSE).

Student Selection Examination (SSE) in Turkey is a national exam administered since 2010 every year in two stages. The ones who registered for the exam have to take the first stage that is named as Higher Education Exam (HEE) that includes Turkish, Math, Science, and Social Sciences multiple choice questions. The individuals who pass HEE become eligible to take UPE. Students take UPE based on their academic tracks at high school. The academic tracks for high school students are Turkish-Math, Science-Math, Social Sciences, and Foreign Languages. Students select their academic tracks at the end of grade 10 at high school and the courses they take vary in accordance with the academic track they select. For instance, Social Science students mostly take verbal courses, while Science-Math students' courses are generally quantitative. In the CHAID analysis academic tracks were defined as Science, Turkish-Math and Other. "Other" consists of students whose academic tracks are Foreign Languages, Information Technologies, Social Sciences, and Accommodation and Tourism Services. UPE is implemented in different sessions and each session includes multiple choice questions. In total, there are 18 distinct score types in SSE and six of them belong to HEE. Other score types are separated into four main groups. MF means Math and Science and it has four categories of scoring. Students who get their score from this category can attend university departments like engineering, architecture, medicine, or science. TM stands for

Turkish and Math and students of this scoring can select to get education in the departments like law, psychology, international relations, or public administration. DİL represents foreign language and they each have three scoring categories and can attend faculty of letters and be interpreters or language teachers. TS indicates Turkish and Social Sciences and it has two scoring categories based on UPE. Students can choose to attend journalism, personal relations, literature, media or communication departments (ÖSYM, 2014b). To conduct CHAID analyses, students whose score type was different from MS-4, TM-1, TM-2, and TM-3 were grouped as "Other".

Once students' scores from HEE and UPE are estimated, they are given a placement rank among the test-takers of the same score type as well as across other score types. Then, in accordance with their score type or placement rank, students select the departments they would like to attend at the universities they choose. There is a negative correlation between the score and the placement rank. The higher the score gets, the lower the placement rank becomes. They can make 30 selections in total, and according to their order of preference they are placed with a university by Student Selection and Placement Center (ÖSYM, 2014b).

Table 2 presents numbers of students who were placed with a university based on different placement scores in higher education entrance examination. As can be seen from the table 2, most of the students were placed with the university based on MF-4, TM-1, and TM-2 scores. The least number of students' scores belong to MF-1 and MF-2.

Table 2
Score types

	Frequency	Percent	Valid Percent	Cumulative Percent
DİL-1	20	3.1	3.1	3.1
MF-1	5	0.8	0.8	3.9
MF-2	6	0.9	0.9	4.8
MF-3	23	3.6	3.6	8.4
MF-4	241	37.4	37.4	45.7
TM-1	136	21.1	21.1	66.8
TM-2	137	21.2	21.2	88.1
TM-3	32	5	5	93
TS-1	10	1.6	1.6	94.6
YGS-1	16	2.5	2.5	97.1
YGS-6	19	2.9	2.9	100
Total	645	100	100	100

Table 3 shows the descriptives for placement, reading, and listening scores who took the English proficiency examination after one-year education in English language preparatory school. Corrected scores were used for listening and reading as four wrong answers cancel out one true answer. Based on the means for placement scores and reading and listening parts, the difficulty level can said to be slightly difficult.

Table 3
Listening and reading corrected scores' statistics

	list_corr	read_corr
n	645	645
Mean	17.39	19.54
Median	17.5	19.75
Mode	20	25
Std. Deviation	4.93	6.75
Skewness	-.14	-.08
Kurtosis	-.33	-.65
Minimum	3	0
Maximum	30	33.75

Figure 1 and 2 show the histograms for reading, and listening parts of the English proficiency examination. As can be interpreted from Table 3, most of the students were accumulated around the central score and scores were normally distributed.
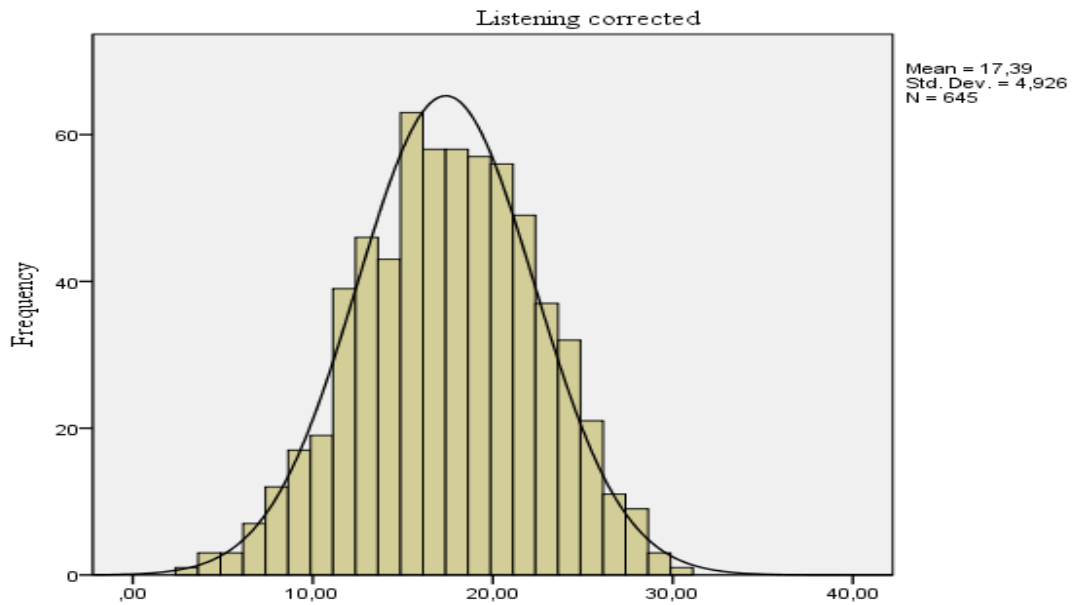
Figure 1. Histogram for listening score
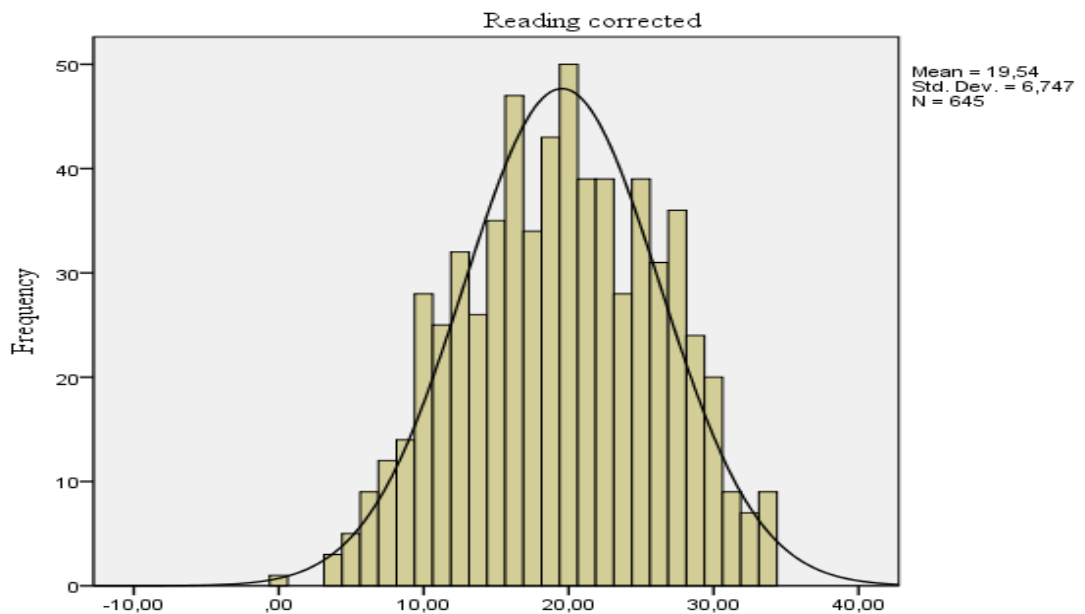
Figure 2.Histogram for reading score

Method of data collection

Data set about proficiency levels and data including students' university placement

scores were provided by the university's database. Required permission was granted

by the ethical committee of the university. To protect the anonymity of the students, the researcher was provided with the data which did not include students' identity numbers.

Method of data analysis

This study aimed to explore significant predictors of English language proficiency by splitting student body into segments using selected variables related to the English proficiency examination and SSE. Corrected listening and reading scores were taken as dependent variable, and academic track, order of preference, gender, state of education, school type, score type, and placement rank of students were taken as independent variables to conduct CHAID analysis.

Chi-squared Automatic Interaction Detection (CHAID) is one of the segmentation methods proposed in the literature. It is used to identify the determinants of segments and demonstrates the results in the form of the branches of a tree (Kayri & Boysan, 2007; SmartDrill, 2015). A dependent or target variable is used by CHAID for classification and then the independent or predictor variables according to their relation to the target variable are put into clusters in the classification tree. CHAID splits the whole group into nodes repetitively (Türe et al.,2005) CHAID provides a variety of options like the arrangement of the depth of the tree before conducting the analysis, the addition of categorical and continuous variables to the same model, the determination of significant factors maximizing differences between segments, the identification of the relationship between dependent and independent variables in more detail, demonstration of the independent variables which explain the dependent variable, and interpretation of the tree diagram and the results with ease (Kalender, 2013; Üngüren & Doğan, 2010). CHAID analysis produces segments that maximize

differentiation from the whole group. When a segment does not have any significant predictor related to it, they produce no nodes and they are called terminal nodes (Kalender, 2013). Since CHAID is a non-parametric method, there were no statistical assumptions to check.

CHAID analysis was run using a classification tree module of SPSS 21 (Norusis, 2005). After student body was divided into segments, One Sample t-tests were conducted to check mean differences between each segment and the mean of whole body, both in reading and listening. By this way, clusters with significantly higher and lower means than the whole body were determined. Then, the segments which showed no difference from the whole group were removed from the data to focus only significant clusters. It was followed by One-Way ANOVA so as to determine the mean differences among the significant segments. As post-hoc test, Post-Hoc Scheffe test was used to investigate which paired student segments indicated difference. Finally, significant clusters were described in terms of the independent variables to define student profiles which had significantly different reading and listening levels than whole group.

CHAPTER 4: RESULTS

Introduction

This study aimed to investigate the relationship between English Language proficiency and variables related to Student Selection Examination (SSE) and to define profiles of students with significantly different language proficiency levels. This chapter consists of the results of the analyses. The chapter begins with the segmentation based on reading scores followed by several analyses to check the differences of segments from the whole group. Then segmentation based on listening scores was presented with subsequent further analyses. Finally, the summary of the overall results were given at the end of this chapter.

The factors related to post-secondary students' reading proficiency in English as a foreign language

The decision tree produced by the CHAID procedure using reading scores as the dependent variable is presented in Figure 3. In the CHAID analysis, the independent variables included were school type, placement rank, score type, academic track, gender, order of preference, and state of education. Results included school type, placement rank, academic track, and score type as the significant predictors. School type was found to be the most associated independent variable (the first variable in the tree) with dependent variable among the independent variables entered into CHAID analysis. There were 18 nodes and 11 terminal nodes (nodes with no further nodes) in the classification tree.
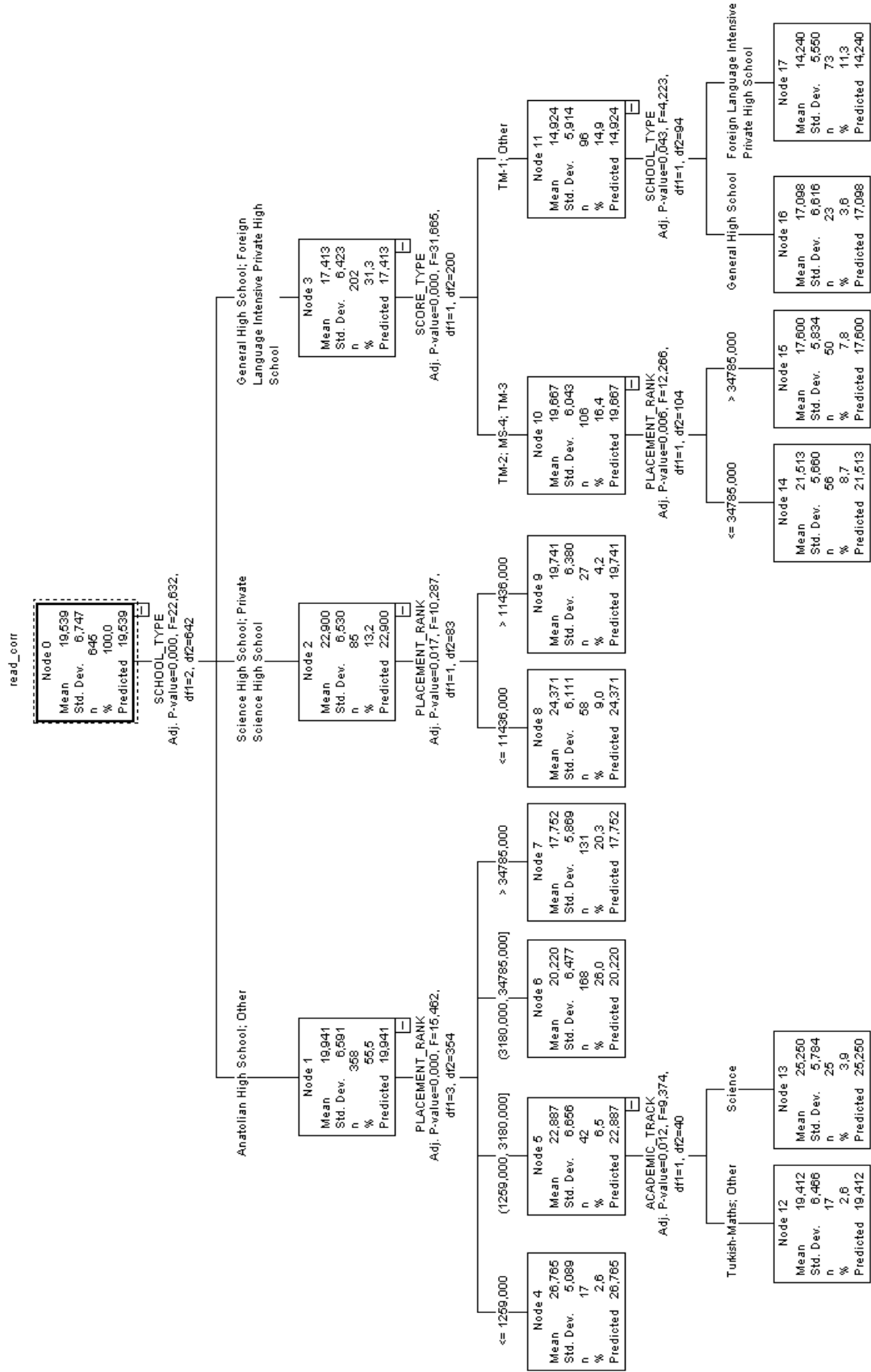
Figure 3. Tree structure explaining predictors of reading score

Students were split into three subgroups with respect to school type in the first level. Students of Anatolian High School and Other (Node 1, n=358) were split into four subgroups; Science High School and Private High School (Node 2, n=85) were divided into two subgroups with respect to placement rank, which is the next independent variable for those clusters. General High School and Foreign Language Intensive Private High School (Node 3, n=202) was separated into two subgroups with respect to score type. None of the nodes terminated at second level; they had been divided into subgroups at next level. At level three, Node 5 (n=42), 10 (n=106), and 11 (n=96) each split into two subgroups. Other nodes terminated in third level.

Node 1 had been split into four subgroups and Node 2 was split into two subgroups with respect to placement rank. Nodes 4, 5, 6, and 7 were comprised of students' placement ranks in Anatolian and Other school types. Node 4 indicated the students' placement ranks lower than 1,259. Node 5 included 42 students whose placement rank was between 1,259 and 3,180. Node 6 (n=168) involved students with a placement rank between 3,180 and 34,785. Node 7 (n=131) was comprised of students who had a placement rank higher than 34,785. Nodes 8, and 9 demonstrated placement rank of Science and Private Science High School students. Node 8 (n=58) included the students who had a placement rank less than or equal to 11,436. Node 9 (n=27) consisted of students whose placement rank was higher than 11,436. Node 5 was divided into two subgroups with respect to students' academic track. Node 12, and 13 indicated academic track of Anatolian and Other High School students whose placement rank was between 1,259 and 3,180. Node 12 (n=17) indicated Turkish-Math and Other; Node 13 (n=25) showed Science students' reading achievement levels.

Node 3 was split into two subgroups with respect to score types. Node 10, and 11 demonstrated General, and Foreign Language Intensive Private High School students' reading achievement level with respect to their score type. Node 10 (n=106) indicated students' scores in TM-2, MS-4, and TM-3 with a mean of 19.67. Node 11 included 96 students from TM-1, and Other score types. Node 14, and 15 showed TM-2, MS-4, and TM-3 students' reading score means with regard to their placement rank. Node 14 (n=56) involved the students whose placement rank was less than or equal to 34,785 and Node 15 (n=50) indicated students with a placement rank higher than 34,785. Node 11 was divided into two subgroups with respect to school type. Node 16, and 17 indicated General, and Foreign Language Intensive Private High School students' reading score means with regard to TM-1, and Other students' school type. Node 16 was comprised of 23 general high school students and Node 17 included 73 students from foreign language intensive private high school. In summary, Table 4 presents the features of the student segments.

Table 4
Characteristics of the student segments for reading score

Node #	n	School Type	Placement Rank	Score Type	Academic Track
4	17	Anatolian, Other	<= 1259	-	-
6	168	Anatolian, Other	(3180-34785)	-	-
7	131	Anatolian, Other	>34785	-	-
8	58	Science, Private Science	<= 11436	-	
9	27	Science, Private Science	>11436	-	-
12	17	Anatolian, Other	(1259-3180)	-	TM, Other
13	25	Anatolian, Other	(1259-3180)	-	Science
14	56	General, FL Intensive Private	<=34785	TM-2,MS-4,TM-3	-
15	50	General, FL Intensive Private	>34785	TM-2,MS-4,TM-3	-
16	23	General	-	TM-1, Other	-
17	73	FL Intensive Private	-	TM-1, Other	-

Nodes 1, 6, 9, 10, 12, and 14 had the mean closest to the mean of the whole group.

Nodes 2, 4, 5, 8, and 13 had a higher mean than the mean of the whole group.

Nonetheless, Nodes 3, 7, 11, 15, 16, and 17 had lower means than the mean of the

whole group. Node 4 (M=26.77) and 13 (M=25.25) had the highest mean for reading

scores.

The student profiles with significantly better reading proficiency than the whole body

Further analysis was conducted using One Sample t-tests to define the student

segments with statistically significant mean differences in reading score of whole

group (M=19.54). Table 5 presents the results. According to results seven out of 11

nodes were found statistically different from the whole group. For statistically

significant nodes 4, 7, 8, 13, 14, 15, and 17, reading scores means were represented

in Table 5. Nodes 4, 8, 13, and 14 had a higher mean than the mean of the general

group while Nodes 7, 15 and 17 had a lower mean than the mean of the whole group.

Table 5
Results of one sample t-tests for student segments for reading score

Node #	Test Value = 19.54				
	t	df	Sig.	Mean Diff.	Means of Reading Score
4	5.9	16	0	7.23	26.77
6	1.4	167	.2	.68	
7	-3.5	130	0	-1.79	17.75
8	6	57	0	4.83	24.37
9	.2	26	.9	.02	
12	-.1	16	.9	-.13	
13	4.9	24	0	5.71	25.25
14	2.6	55	0	1.97	21.51
15	-2.4	49	0	-1.94	17.6
16	-1.8	22	.1	-2.44	
17	-8.2	72	0	-5.3	14.24

Table 6 represents the characteristics of significant student segments for reading score.

Table 6
Characteristics of significant segments for reading score

Node #	n	School Type	Placement Rank	Score Type	Academic Track
4	17	Anatolian, Other	<= 1259	-	-
7	131	Anatolian, Other	>34785	-	-
8	58	Science, Private Science	<= 11436	-	-
13	25	Anatolian, Other	(1259-3180)	-	Science
15	50	General, FL Intensive Private	>34785	TM-2,MS-4,TM-3	-
17	73	FL Intensive Private	-	TM-1, Other	-

To check the mean differences among the significant clusters, One-Way ANOVA was conducted. As indicated in Table 7, there was an overall significant result.

Table 7
ANOVA results for reading score

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	6148.07	10	614.81	16.83	.00
Within Groups	23165.76	634	36.54		
Total	29313.82	644			

Post- Hoc Scheffe test was used to find out which pairs of segments were statistically significant. Table 8 represents the mean differences between the means of student segments. 21 pairs of segments were compared with regard to their means, and 11 of them were estimated to be statistically significant. Among the student segments, Node 4 had the highest mean, and Node 17 had the lowest mean. Therefore, the greatest mean difference among pairs was estimated between Node 4 and 17. Node 13 had the second highest mean. A slight mean difference between Node 13 and Node 4 (Mean difference= 1.52) was estimated. Node 7 had the second

lowest mean after Node 17. Between Node 17 and Node 7, the mean difference was found to be 3.51.

Table 8
Multiple comparisons of student segments for reading score

Node 1	Node 2	Mean Diff.	Sig.	Node 1	Node 2	Mean Diff.	Sig.
	7	9.01*	.00		8	-6.62*	.00
	8	2.39	.89		13	-7.50*	.00
4	13	1.52	.10	7	14	-3.76*	.01
	14	5.25	.10		15	.15	1.00
	15	9.17*	.00		17	3.51*	.01
	17	12.53*	.00				

Node 1	Node 2	Mean Diff.	Sig.	Node 1	Node 2	Mean Diff.	Sig.
	13	-.88	.10		14	3.74	.30
8	14	2.86	.33	13	15	7.65*	.00
	15	6.77*	.00		17	11.01*	.00
	17	10.13*	.00				

Node 1	Node 2	Mean Diff.	Sig.	Node 1	Node 2	Mean Diff.	Sig.
14	15	3.91	.06	15	17	3.36	.13
	17	7.27*	.00				

*. The mean difference is significant at the 0.05 level.

The comparison among the student segments with higher means indicated that there was not statistically meaningful difference between them. Student segments 4, 8, 13, and 14 had approximately the same achievement level. Furthermore, the comparison among the student segments with lower means demonstrated that while there was statistically meaningful difference between node 7 and 17, there was not a statistically significant difference between node 7 and 15.

Reading achievement level was estimated to be higher than the whole group for Anatolian and Other high school students who had a placement rank less than or equal to 1,259; for Science and Private Science high school students who whose placement rank was less than or equal to 11,436; for General and Foreign Language Intensive Private high school students with the score type of TM-1 and Other as well

as the students with the score type of TM-2, MS-4, TM-3, and whose placement rank was less than or equal to 34,785. The results indicated that students with a low placement rank, which means they had a high score from SSE, had also a high reading achievement level. On the other hand, students from Anatolian and Other, General and Foreign Language Intensive Private high school whose placement rank was higher than 34,785, and students from Foreign Language Intensive Private high school who had a score type of TM-1 and Other were found to have a lower reading achievement level than the whole group. The overall results demonstrated that students with low placement ranks had a high reading achievement level regardless of their English background.

The factors related to post-secondary students' listening proficiency in English as a foreign language

The decision tree produced by CHAID procedure using listening scores as the dependent variable is represented in Figure 4. In the CHAID analysis, academic track, gender, score type, school type, placement rank, order of preference, and state of education were included as the independent variables. Results included academic track, gender, score type, school type, placement rank, and order of preference. Among the independent variables that entered into CHAID analysis, academic track was found to be the main predictor for dependent variable. There were 21 nodes and 14 terminal nodes in the classification tree.
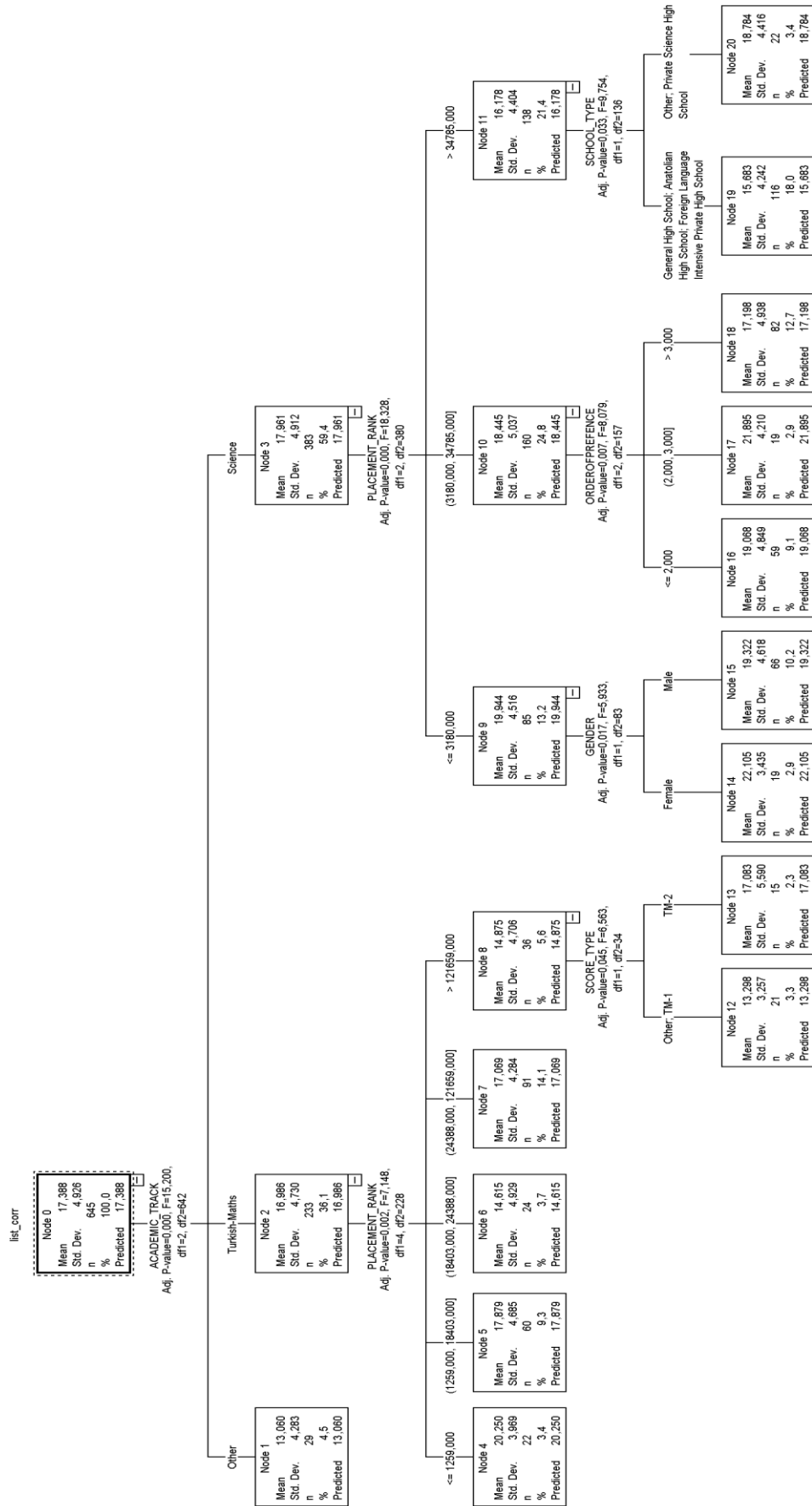
Figure 4. Tree structure explaining predictors of listening score

Students were split into three subgroups with regard to their academic track. Node 1 (Other, n=29) was a terminated in the first level. Turkish-Math (Node 2, n=233) were split into five subgroups; Science (Node 3, n=383) were divided into three subgroups with respect to placement rank. Placement rank was the next predictor for those clusters. Only Node 1 terminated at the second level and the other nodes were split into subgroups in the next level. At level three, Nodes 8 (n=36), 9 (n=85), 10 (n=160), and 11 (n=138) each split into two subgroups. Other nodes terminated in the third level.

Node 1 was a terminal node that terminated in the second level. Node 2 was split into five subgroups with respect to placement rank of Turkish-Math students. Nodes 4, 5, 6, 7, and 8 indicated Turkish-Math students' listening score means with regard to their placement rank. Node 4 (n=22) indicated students' placement rank lower than 1,259. Node 5 included 60 students with a placement rank between 1,259 and 18,403. Node 6 had 24 students whose placement rank was between 18,403 and 24,388. Node 7 was comprised of 91 students with a placement rank between 24,388 and 121,659. Node 8 involved students who had a higher placement rank than 121,659.

Node 3 (n=383) was divided into 3 subgroups (Node 9, 10, and 11) with respect to placement rank of Science students. Node 9 (n=85) consisted of students whose placement rank was less than or equal to 3,180. Node 10 indicated the 160 students with a placement rank between 3,180 and 34,785. Node 11 had 138 students who had a placement rank higher than 34,785. Node 8 was divided into two subgroups with respect to score type. Nodes 12, and 13 showed the score types of Turkish-Math students whose placement rank was higher than 121,659. Node 12 (n=21) indicated

students' scores in TM-1, and Other and Node 13 included 15 students from TM-2 score type.

Node 9 was split into two subgroups with respect to gender. Nodes 14, and 15 included Science students whose placement rank was less than or equal to 3,180. Node 14 was consisted of 19 female students and Node 15 included 66 male students whose placement rank was lower than 3,180. Node 10 was divided into two subgroups with regard to students' order of preference. Node 16 had 59 students whose order of preference was less than or equal to two. Node 17 (n=19) involved students whose order of preference was between two and three. Node 18 illustrated 82 students whose order of preference was higher than three. Node 11 was split into two subgroups with respect to school type of Science students with a placement rank higher than 34,785. Node 19 was consisted of 116 students from General, Anatolian, and Foreign Language Intensive Private high schools. Nodes 20 had 22 students from Science and other high schools. In summary, Table 9 demonstrates the features of student segments for listening scores.

Table 9
Characteristics of the student segments for listening score

Node #	n	Academic Track	Placement Rank	Score Type	Gender	Order of Preference	School Type
1	29	Other	-	-	-	-	-
4	22	Turkish-Math	<=1259	-	-	-	-
5	60	Turkish-Math	(1259,18403)	-	-	-	-
6	24	Turkish-Math	(18403,24388)	-	-	-	-
7	91	Turkish-Math	(24388,121659)	-	-	-	-
12	21	Turkish-Math	>121659	TM-1, Other	-	-	-
13	15	Turkish-Math	>121659	TM-1, Other	-	-	-
14	19	Science	<=3180	-	Female	-	-

Table 9 (con't)
Characteristics of the student segments for listening score

15	66	Science	<=3180	-	Male	-	-
16	59	Science	(3180,34785)	-	-	<=2	-
17	19	Science	(3180,34785)	-	-	(2,3)	-
18	82	Science	(3180,34785)	-	-	>3	-
19	116	Science	>34785	-	-	-	General, Anatolian, FL Intensive, Private
20	22	Science	>34785	-	-	-	Private Science

Nodes 3, 5, 7, 13, and 18 had the closest mean to the mean of the whole group (M= 17.39). Nodes 4, 9, 10, 14, 15, 16, 17, and 20 had a mean higher than the mean the mean of the whole group whiles Node 1, 2, 6, 8, 11, 12, and 19 had lower means than the mean of the whole group. Nodes 14, and 17 had the highest mean for listening scores (M= 22.11, M= 21.99).

The student profiles with significantly better listening proficiency than the whole body

Further analysis was conducted using several One Sample t-tests to define the student segments with statistically significant mean differences in listening score. Table 10 presents the results of One Sample t-tests. According to the results 9 out of 20 nodes were estimated to be statistically different from the whole group. For statistically significant nodes 1, 4, 6, 7, 12, 14, 15, 16, 17, and 19 listening scores were represented in Table 10. Nodes 4, 5, 14, 15, 16, 17, and 20 had a higher mean than the mean of the whole group. Nonetheless, Nodes 1, 6, 7, 12, 13, 18, and 19 had a lower mean than the mean of the whole group.

Table 10
One sample t-tests for student segments for listening score

Node #	Test Value = 17.39				
	t	df	Sig.	Mean Diff.	Means of Listening Score
1	-5.44	28	.00	-4.33	13.06
4	3.38	21	.00	2.86	20.25
5	.81	59	.42	.49	
6	-2.76	23	.01	-2.77	14.61
7	-.71	90	.48	-.32	
12	-5.76	20	00	-4.09	13.30
13	-.21	14	.84	-.31	
14	5.98	18	.00	4.72	22.10
15	3.40	65	.00	1.93	19.32
16	2.66	58	.01	1.68	19.07
17	4.66	18	.00	4.50	21.99
18	-.35	81	.73	-.19	
19	-4.33	115	.00	-1.71	15.68
20	1.48	21	.15	1.39	

Table 11 shows the characteristics of significant student segments for listening score.

Table 11
Characteristics of significant segments for listening score

Node #	n	Academic Track	Placement Rank	Score Type	Gender	Order of Preference	School Type
4	22	Turkish-Math	-	-	-	-	-
6	24	Turkish-Math	-	-	-	-	-
12	21	Turkish-Math	>121659	TM-1, Other	-	-	-
14	19	Science	<=3180	-	Female	-	-
15	66	Science	<=3180	-	Male	-	-
16	59	Science	(3180,34785)	-	-	<=2	-
17	19	Science	(3180,34785)	-	-	(2,3)	-
19	116	Science	>34785	-	-	-	General, Anatolian, FLIP

One-Way ANOVA was conducted to check the mean differences among the significant clusters. As indicated in Table 12, there was an overall significant result.

Table 12

ANOVA results for listening score

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	2889.45	13	222.27	11.01	.00
Within Groups	12735.76	631	20.18		
Total	15625.21	644			

To estimate which pairs of segments were statistically significant, Post-Hoc Scheffe test was conducted. Table 13 represents the mean differences between the means of student segments. Thirty-seven pairs of segments were compared with respect to their means, and 15 of them were found to be statistically significant. Among the student segments, Node 14 had the highest mean, and Node 1 had the lowest mean. Hence, the greatest mean difference among pairs was found to be between Node 14 and 1. Node 17 had the second highest mean. Between Node 14 and 17, the mean difference was estimated to be 3.39. Node 12 had the second lowest mean after Node 1. There was a slight mean difference between Node 1 and 12 (Mean difference= -.24).

The nodes had been split into two groups with regard to their means. The nodes with higher means were found to be 4, 5, 14, 15, 16, 17, and 20. The lower nodes were estimated to be 1, 6, 7, 12, 13, 18, and 19. Firstly, 4, 14, 15, 16, and 17, were compared to see if there was any statistically significant difference among the higher means of student segments. The results demonstrated that there was not statistically meaningful difference when nodes with higher means were paired and compared. Then, to estimate whether there was a difference, the student segments with lower means were compared. Nodes 1, 6, 12, and 19 were compared with each other and the results revealed that there was not statistically significant difference between the

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nodes with lower means. In addition, a statistical mean difference was estimated between Nodes 1 and 4, 14, 15, 16, 17, between Nodes 4 and 12, between Nodes 19 and 15, 17, between Nodes 6 and 17, and lastly between 12 and 14, 15, 16, 17.

Table 13
Multiple comparisons of student segments for listening score

Node#	Node#	Mean Diff.	Sig.	Node#	Node#	Mean Diff.	Sig.
1	4	-7.19[*]	.00	4	6	5.64	.16
	6	-1.55	1		12	6.95[*]	.02
	12	-.24	1		14	-1.86	1
	14	-9.04[*]	0		15	.93	1
	15	-6.26[*]	0		16	1.18	1
	16	-6.01[*]	.00		17	-1.64	1
	17	-8.83[*]	0		19	4.57	.12
	19	-2.62	.85				
Node#	**Node#**	**Mean Diff.**	**Sig.**	**Node#**	**Node#**	**Mean Diff.**	**Sig.**
6	12	1.32	1	12	14	-8.81[*]	0
	14	-7.49[*]	.00		15	-6.02[*]	.00
	15	-4.71	.12		16	-5.77[*]	.02
	16	-4.45	.21		17	-8.59[*]	.00
	17	-7.28[*]	.01		19	-2.40	.97
	19	-1.07	1				
Node#	**Node#**	**Mean Diff.**	**Sig.**	**Node#**	**Node#**	**Mean Diff.**	**Sig.**
14	15	2.78	.96	15	16	.25	1
	16	3.04	.92		17	-2.57	.98
	17	.21	1		19	3.64[*]	.01
	19	6.42[*]	.00				
Node#	**Node#**	**Mean Diff.**	**Sig.**	**Node#**	**Node#**	**Mean Diff.**	**Sig.**
16	17	-2.83	.95	17	19	6.21[*]	.00
	19	3.38	.05				

Listening achievement level was found to be higher than the whole group for Science students whose placement rank was less than or equal to 3,180 for both females and males in addition to Science students who had a placement rank between 3,180 and 34,785 and whose order of preference was either two or three. It was found that students with a low placement rank had higher scores in the listening test than the whole group. Furthermore, Turkish- Math students who had placement rank higher than 121,659 with a score type of Other, TM-1, and students form General,

Anatolian, and Foreign Language Intensive high schools whose placement rank was higher than 34,785 had a low listening achievement level than the whole group. The results showed that students with high scores from SSE and low placement ranks reached a higher achievement level in listening as well without taking students' academic tracks, high school types or English background into consideration.

Summary

To sum up, CHAID analysis was conducted to find the significant predictors for reading and listening scores as target variable. It was followed by multiple One Sample t-tests to find the student segments with statistically meaningful mean differences in reading and listening achievement. The results for reading scores indicated that out of 11 student segments, seven of them were statistically important. The results for the listening score demonstrated that out of 20 student segments, nine of them were statistically meaningful. Then, One-Way ANOVA was used to define the mean differences among the significant segments for listening and reading scores. The results showed an overall significance. Lastly, Post-Hoc Scheffe test was conducted to see if the paired student segments were statistically different from each other. For the reading score it was found that 11 pairs out of 21 showed statistically meaningful difference. Also, the multiple comparisons for the listening score revealed 14 statistically meaningful different pairs out of 37 pairs compared.

CHAPTER 5: DISCUSSION

Introduction

This study aimed at analyzing whether there are any differences between student subgroups with respect to proficiency in English. The main results of the present study revealed to be;

1. Anatolian and Science high school students have a better English reading proficiency levels than other high school students.

2. Anatolian high school students whose placement rank was less than or equal to 1,259 are the most successful group in English reading proficiency.

3. Foreign Language Intensive Private high school students had lowest performance among student groups for English reading proficiency.

4. Students with the score types of TM-2, MS-4, TM-3 had better English reading proficiency than students with score types of TM-1 and Other.

5. Females' performance in English listening proficiency is better than males.

6. Students whose academic track is Science displayed a better performance in English listening proficiency than students from other academic tracks.

7. Students with lower order of preference showed better English listening proficiency levels than students with higher order of preference.

8. Private Science and Science high school students attained better scores from English language proficiency test than other high school students.

This chapter consists of the summary and interpretation of the major findings with regard to research questions, implications for future practice and research and finally limitations of this study.

Overview of the study

The present study was conducted in a foundation university, Ankara, Turkey. The sample involved 645 preparatory year students' English reading and listening proficiency test scores, SSE scores and students' background such as high school type, academic track, placement rank and score type in SSE and gender. There were 321 males and 324 females in the sample.

The data were analyzed using CHAID analysis. Data were split into segments for reading and listening scores of students; then, two classification trees were formed using reading and listening as the target variables for each tree. CHAID analysis was followed by several one sample t-tests to find the significant segments for the target variable. One-way Anova was used to check the differences between the means of significant segments. As a final step, Post-Hoc Scheffe test was conducted to analyze which paired segments were statistically significant. This procedure was completed both for the segmentation based on listening score and reading score. Finally, profiles of student groups with significantly different reading and listening scores were defined. As a result of two CHAID analyses conducted with reading and listening as dependent variables, it was found that there are some variables related to these scores, and these variables were also found to create some significant differences in students' English proficiency levels.

Major findings

This study focused on the subgroups rather than the whole group of students. In order to attain respectively homogenous clusters, a segmentation method was used and differences among subgroups were examined with respect to the predictor variables which were found to be significant for the reading score.

Student profiles based on reading proficiency levels

The classification tree formed by CHAID analysis for which the reading score was defined as the target variable indicated the school type as the most significant predictor for reading achievement. It means the school type of the students is the factor that has the highest relationship with students' reading scores, and depending on the school students attended, the reading achievement level in English showed differences. Depending on the high school students attended, weekly hours for English differentiate, and this may be one of the reasons for the differences in reading achievement levels. Students who are exposed to English classes more during their high school years seem to be more successful in reading proficiency in English language. As Güneş (2011) reported, students of Anatolian and Science high schools tend to be more successful in language proficiency. The results of this study also suggested that students from Anatolian and Science high school have a better reading proficiency level than students of General and Foreign Language Private Intensive high schools.

The second significant predictor for reading achievement is found to be the placement rank of students. The placement rank of students from SSE in different school types can be related to students' academic success. As the placement rank of students in SSE decreases, their score from SSE increase; therefore, placement rank

may be accepted as an indicator of academic success (Karakaya & Tavşancıl, 2008). The finding that students with lower placement rank had higher reading scores is in alignment with prior research which suggests that academic achievement of students has a positive relationship with students' language proficiency (Fournier & Ineson, 2013; Maleki & Zangani, 2007; Sadeghi, Kashanian, Maleki, & Haghdoost, 2013; Vinke & Jochems, 2013).

Contrary to expectations Foreign Language Intensive high schools displayed a lower performance than the whole group. A general view would expect Foreign Language Intensive Private high school students to perform better because of their intense language education during high school years. They were outperformed by General high school students, which would be regarded as unusual. The private institutions are considered to be providing better education for foreign languages as they start learning a foreign language at an earlier age than General high school students and integrate more hours of foreign language teaching in their curriculum. The results of this study seem to contradict prior research that starting at an early age to learn foreign languages would result in better proficiency levels (Al-Zu'be, 2013; Al-Quatami, 2013). Dolado and Morales (2008) concluded in their study that students whose high school specialization was based on technical education displayed higher academic success in their first year of university than the students whose background education was social sciences. As studies found relation between the academic success and language proficiency (Bayliss & Raymond, 2004; Sert, 2006; Stephen et al., 2004), students whose educational background was mostly technical would be expected to attain better language proficiency levels than students of social sciences.

Anatolian and Other high school students whose placement rank was between 1,259 and 3,180 showed differences in reading achievement with regard to their academic

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track. In Anatolian and Other high school students' subgroup, Science students were estimated to have higher reading scores than Equal-weighted students. Considering students' background and SSE, students whose academic track was Equal-weighted were expected to reach a better achievement level in reading than students of Science because it is assumed that Equal-weighted students had better reading comprehension skills and that they take verbal courses during their education in high school. It is claimed that students who were successful in their native language would also perform well in another language (Akbari & Hosseini, 2008). However, Deniz et al. (2013) also found that Science students demonstrated higher foreign language achievement levels than students of other academic tracks. The results of the present study and the study of Deniz et al. (2013) seem to support Hart's (1993) claim that there is a positive relationship between students' foreign language proficiency and proficiency in math. In addition to that, Stewart (2005) concluded that foreign language learning had a relationship between reading achievement and achievement in math. The reading achievement scores of General and Foreign Language Intensive Private high school students who were split into two subgroups with respect to their score type also align with this claim. Students whose score type was TM-1 and Other had lower reading achievement levels than students whose score type was TM-2, MS-4 or TM-3. The students with the score types that attained higher scores from reading focused on a relatively limited number of verbal courses during their high school education.

The highest achievement level in reading belong to Anatolian and Other subgroup students who had a placement rank less than or equal to 2,159. On the other hand, the lowest reading achievement level belongs to TM-1 students from Foreign Language Intensive Private high school. The achievement of the Anatolian high school students

is expected as students in Anatolian high schools are regarded to be multifaceted (Kırkgöz, 2007). In contrast to a common belief that private school students are considered to be advantageous in term of foreign language education, and the fact that the students were the graduates of Foreign Language Intensive Private high schools where foreign language education is thought to be privileged in comparison with other school types, the students whose score type was TM-1 and Other and who were the graduates of Foreign Language Intensive Private high schools demonstrated the lowest performance of the all other subgroups. This result does not correspond with Aydın's study (2006) which reported the graduates of Foreign Language Intensive high schools as the most successful group in foreign language proficiency examination implemented in a university in Turkey.

Student profiles based on listening proficiency levels

The classification tree for listening scores found the academic track as the most influential factor and students' achievement in listening level in English varied based on their academic track. The reason for that might be students' background in terms of the courses they took during high school years. The courses students take during high school education show differences based on their academic track. Students of Science mostly take quantitative lessons while students of Turkish-Math and Social Sciences take more verbal courses. As language is accepted as a verbal course, the difference in courses caused by students' academic tracks may be the factor creating variety in listening achievement level.

The highest listening scores belong to female Science students whose placement rank was less than or equal to 3,180. The academic tracks and the placement ranks of students suggest that females have a tendency to be more successful in listening than

males. Another interpretation for this may be that when students have relatively similar achievement levels in term of academic success, it is likely for females to outperform males in listening achievement. There are a number of studies supporting this finding. Vatanartıran, Dalgıç, and Karadeniz (2014) conducted a nationwide research in Turkey with seventh grade students and found that females had higher results than males in foreign language tests. Deniz et al. (2013) also concluded that females outperformed males in foreign language achievement tests. In addition, Onwuegbuzie et al. (2000) found that females were high-achievers in foreign language contrary to males who were low-achievers. This finding may also be related to Sarıcaoğlu and Arıkan's study (2009) as they found that females had relatively higher linguistic intelligence than males; therefore, it is more likely for them to be successful in foreign language studies. The results also correspond with Khodaday and Dastgahian's study (2012). They reported that female students scored significantly higher than male students on structure, listening, and reading comprehension subsets. Nevertheless, this result contradicts with Çakan (2005) and Güneş (2011) who found no relationship between gender and foreign language proficiency.

In addition, students whose academic track was Other had lower achievement levels in listening proficiency. This subgroup was the only one that terminated in the first level of the listening classification tree; in other words, it was not divided into subgroups at next level. The subgroup named as Other included students from diverse academic tracks such as Social Sciences, Foreign Language, accommodation and tourism, and information technologies. Owing to the diversity in that subgroup, results might have been found as the lowest for the listening achievement level. However, the majority of this subgroup included students of Social Sciences and

Foreign Languages. In that respect, it is surprising that this subgroup was the lowest

listening achievement group among all the other subgroups owing to the fact that

their prior education involved more verbal and language courses. Therefore, it was

expected that they would have relatively higher scores from listening proficiency

tests (Aydın, 2006). Deniz et al. (2013) also found corresponding results in their

study. The results of their study indicated that students from Social Sciences had

lower achievement levels than Science students.

The higher scores for listening mostly were displayed in the students whose

academic track was Science. Among the subgroups whose academic track was

Science, the students whose placement rank was less than or equal to 3,180 had a

better achievement level in listening than the whole group. The fact that Science

students with a lower placement rank had higher academic achievement with respect

to SSE scores and demonstrated a better performance in listening proficiency is in

line with the prior studies. Research also concluded that academic achievement has a

positive relationship with proficiency level in language. Furthermore, the result that

Science students outperformed their peers from other academic tracks is supported

by research as well. Studies suggested that Science students achieve higher levels in

language proficiency than the students of other academic tracks (Deniz et al., 2013).

The order of preference for students was found to be an important predictor for

Science students whose placement rank was between 3,180 and 34,785. Their

listening scores were slightly higher than the scores of the whole group. The students

who were placed in their first, second or third choice of university had a better

performance in listening proficiency than students who were placed to their fourth or

higher number of university choice. It may be assumed from this finding that

students who were placed to their first three choices at university selection might

have fostered a positive attitude toward their school and learning, and this might have reflected on their performance in their language studies during the preparatory year of their schooling. As research proposes, students with a positive attitude toward learning a foreign language are more likely to develop better proficiency levels (Huang & Tsai, 2003; İnal, Sevin & Saracaloğlu, 2003; Kazazoğlu, 2013).

Equal-weighted students' scores in listening were mostly lower than the score of the whole group. The only subgroup that displayed a higher performance than the whole group consisted of students whose placement rank was less than or equal to 1,259. This result suggests that students with lower placement rank and with higher academic achievement levels exhibits a better performance in listening proficiency regardless of their academic track. This finding is in alignment with the previous research findings that concluded there was a positive relationship between academic achievement and language proficiency (Deniz et al., 2013; Sert 2006; Stephen, Welman, & An, 2004; Sahragard, Baharloo, & Soozandehfar, 2011).

School type was displayed as a subgroup that differs from the whole group in the third level. Science students who had a placement rank higher than 34,785 were split into two subgroups with regard to their school type. In these two subgroups, Private Science and Other high school students showed higher achievement levels in listening than students of Anatolian, General, and Foreign Language Intensive Private high schools. The difference between the school types in terms of listening proficiency might have occurred due to the difference in students' academic achievement level. Students of Science high schools, whether private or state institutions, enter these schools by providing a high score from the HSEE after they finish their middle school. HSEE measures students' academic achievement and Science high schools accept students with the highest scores from HSEE. Hence,

students of Science high schools are regarded as students who had high academic success (Bahar, 2013b). In that respect students of Private science high schools are expected to be successful in language proficiency as they have high academic achievement level (Güneş, 2011; Deniz et al., 2013).

In summary, both expected and unexpected results were rendered as a result of this study with regard to the relationship between foreign language proficiency and high school type, SSE scores, and placement rank. Some findings of this study correspond with the literature, while some oppose. Further research may suggest contradiction or support for the results which indicate the differences in language proficiency with regard to high school type and SSE scores.

Implications for practice

Upon the completion of the present study, the results suggest to place the students who had approximately similar results from the language proficiency examination into the same classes considering their academic success in SSE. Students with proximate placement ranks or scores from SSE can be placed in the same classroom depending on their language proficiency levels for the preparatory year in the school of English languages. By this means, teachers can select their teaching approaches more appropriately as they would have some information related to their students' academic background. The classroom atmosphere and the activities for students may be equally challenging for students' understanding, and this may help them develop better proficiency in English.

As the results showed differences for particular school types in terms of foreign language proficiency, for students to face the challenge in English-medium universities and to avoid the differences between different groups with respect to

language proficiency, common core standards such as the weekly hours of English, may be brought to foreign language education although school types vary. The number of English teaching hours in a week can be standardized. In addition to this, the results of this study may be utilized to evaluate the implementation of foreign language curriculum by MoNE and the quality of teaching. The MoNE curriculum suggests that a student would reach the B2 level in English proficiency and be described as an independent user of language. However, results show that the curriculum objectives were not able to be fulfilled in the implementation and students lacked the abilities to present the expected foreign language proficiency of a high school graduate as stated by the common objectives. Therefore, the results of this study can be used to evaluate the teaching of English in different high school types with regard to English language objectives of MoNE curriculum.

In Turkey, assessment basically consists of written tests. Foreign language assessment requires the measurement of productive and receptive skills; therefore the assessment of listening and speaking should be given importance as much as reading and writing in language education. This study analyzed reading and listening scores of students and found a relation between SSE, high school type, and proficiency in English, revealing that students from different high schools vary in terms of their performance in reading and listening. Furthermore, during high school education, students may be taught reading and listening strategies to attain better proficiency levels in both areas. Variation in assessment for language skills may contribute to students' language proficiency. Some students take proficiency tests while they are unfamiliar with the types of questions presented to them in a language test such as a cloze test or a word formation question. Hence, unfamiliarity with diverse question types and assessment tools might be disadvantageous for students. Variation in

assessment for language skills can be a path to follow in order to help students attain better proficiency levels in English.

Implications for further research

This research analyzed the reading and listening scores of the proficiency test. Further research may utilize speaking and writing tests to describe the use of language in productive skills and create a wider picture for differences in the use of language taking both the receptive and productive skills into consideration.

This study was based on quantitative methodology. Another research may be conducted using qualitative data to supplement the findings of this research. Students' learning strategies can be gathered using surveys or interviews. As for quantitative studies, students' high school grade point averages and/or starting age to learn foreign languages can be added to the data, and the relationship of language proficiency with SSE and high school grade point average may be analyzed.

Limitations

The lessons of English may differ according to the high school types students attend in terms of the quality in teaching, the subjects covered, the teaching philosophy and the background of the teachers. As the high school types and the achievement in high school were examined in relation to proficiency in English, only numerical data were considered without discussing the differences of the curricula and the teacher quality.

In this study, only a limited number of predictor variables were used. Including more variables may produce more generalizable results. Other aspects of language proficiency such as speaking may also be investigated.

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