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## Research Article

# Direct Access to English-Medium Higher Education in Turkey: Variations in Entry Language Scores

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### **ABSTRACT**

The internalization of higher education has led to exponential growth in the number of English-medium (EMI) programs worldwide. The minimum level of English proficiency for prospective EMI students to manage the linguistics demands in these programs has recently been investigated. This study aims to explore the EMI higher education context in Turkey in terms of the language requirements for direct access to EMI undergraduate programs. In this study, 57 Turkish public universities offering EMI undergraduate programs were examined in terms of the language requirements, and the rationale behind setting those standards. The data were collected from the official policy documents and websites of the universities. The results indicated that required language scores are varied and the decisions of setting those scores are not empirically founded. This study implies the need for a common policy for language requirements based on the empirical studies and the international frameworks in Turkish higher education.

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#### **Statement of Publication Ethics**

In this study, only publicly available documents were used. Therefore, the current study does not require ethics committee approval. The author hereby confirms that research and publication ethics are complied with.

## **Conflict of Interest**

The author reports no conflict of interest to disclose.

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### Introduction

In higher education, the English medium of instruction (EMI) has appeared as one of the most popular global educational trends in the latest century as a result of the internalization processes of higher education (Wächter & Maiworm, 2014; Macaro et al., 2018) and emergent role of English as a lingua franca of academic communication (Rose & McKinley, 2018). This trend has been applied to higher education in Turkey where the number of university programs taught through EMI has dramatically increased over the past two decades (Karakaş, 2018; Kırkgöz, 2019; Yuksel et al., 2022). While the EMI is not a new phenomenon in the Turkish higher education system which dates back to 1863 when the Robert College (now Boğaziçi University) was founded (British Council & TEPAV, 2015), there is a rapid increase in the number of EMI programs due to the reasons such as local and global competitiveness and the desire for universities to increase their profits by recruiting more national and international students (Selvi, 2014; Kırkgöz, 2019; Kamasak & Ozbilgin, 2021).

In this study, EMI is defined as "the use of the English language to teach academic subjects other than English itself in countries or jurisdictions where the first language of the majority of the population is not English" (Macaro, 2018, p. 19). Several studies indicated that students in Turkey desire to enroll in EMI programs as a result of instrumental motivations to develop English skills at a certain level to have a prestigious and higher-paid job in the international market (Başıbek et al., 2014; Kırkgöz, 2019). However, the primary aim of EMI programs is not to boost the English proficiency level of students contrary to the dual aim of Content and Language Integrated Learning (CLIL) programs paying attention to the development of both content knowledge and language development (Aizawa et al., 2020).

In Turkey, all high-school graduates who achieved appropriate ranking from the national university exam can choose to study at EMI departments regardless of their language proficiency. Therefore, the universities in Turkey implement a "preparatory year model" (Macaro, 2018) where language support is provided before EMI studies (Aizawa et al., 2020; Richards & Pun, 2021), and the preparatory year is compulsory for EMI students unless they present a proof of their language proficiency by either submitting a passing score from national/international tests or getting a Pass grade from in-house proficiency tests administered by the language programs. While the centralized governing body, known as the Council of Higher Education (YÖK), governs all the activities related to higher education institutions in Turkey, the universities are autonomous in establishing their own EMI standards related to the organization of preparatory language programs, criteria for exemption from the language preparatory year, and language testing procedures carried out in those programs (Yuksel et al., 2022). As a result, it is possible for universities offering EMI programs to establish their prerequisite threshold levels of English proficiency to exempt students from a compulsory preparatory year of study.

In this study, these entry language scores and levels are considered a significant indicator of the language proficiency that universities deem sufficient for the EMI studies in the Turkish higher education context. There is a growing interest in different EMI settings to explore the threshold language proficiency level beyond which students face

fewer language-related challenges (Aizawa et al., 2020; Soruç et al., 2021). However, there are fewer studies documenting a country profile in terms of the entry language proficiency requirements set by the universities offering EMI provision around the globe (Jeffrey et al., 2019; Cicillini, 2021), and there is no study exploring the entry language requirements of full EMI programs in Turkey. Addressing this gap, this study investigates the undergraduate level entry requirements of 57 public universities in Turkey in terms of the recognized national/international tests, the entry requirement scores from those tests as well as the rationale behind these decisions.

#### Literature review

## Language proficiency threshold level for fewer challenges in EMI

The research on the positive relationship between language proficiency and academic success is inconclusive (Carlsen, 2018). While some research has found a negative or weak correlation between proficiency scores on international tests (such as TOEFL) and the general academic point average (GPA) of the students (Light et al., 1987; Ayers & Quattlebaum, 1992), other studies have revealed a strong positive relationship (Hill et al., 1999; Harrington & Roche, 2014; Yen & Kuzma, 2009; Rose et al., 2020). Nevertheless, the evidence from the research has shown that the students with lower-level English proficiency have more language-related challenges as they study through EMI (Sultana, 2014; Soruç et al., 2021), and "increases in proficiency result in increases in ease of learning" (Aizawa et al., 2020, p.19).

A threshold level of language proficiency for EMI studies beyond which students face fewer linguistic challenges during their studies has recently been under investigation. For example, Aizawa et al. (2020) have found a clear linear relationship between language proficiency and linguistic challenges with EMI studies. However, they found it difficult to set a clear threshold level of language proficiency for EMI as even the B2/C1 level of students had challenges with learning in a Japanese EMI university setting. Carlsen (2018), on the other hand, found the B2 level as a minimum language proficiency below which L2 students have significantly more linguistic struggles in a Norwegian university setting. Soruç et al. (2021) also investigated the relationship between English language proficiency and language-related challenges experienced by undergraduate students as they study through EMI in Turkey. They found a significant effect of CEFR levels on the linguistic challenges EMI students experience in different skills indicating that lower-level proficient students have more linguistic-related challenges. Their results revealed that the students studying a Social Science subject (International Relations) experience fewer linguistic challenges after they reach a B2 level of proficiency while no clear proficiency threshold was found for the students of Mathematical, Physical, and Life Sciences (Electronic Engineering). The results of these studies indicate that language proficiency may not be the only factor that guarantees fewer challenges associated with EMI studies and the threshold level of proficiency varies depending on the setting and the discipline of the EMI study (Dearden & Macaro, 2016).

## Entry language requirements in European universities and EMI settings worldwide

While the research exploring a threshold level of proficiency for EMI studies is in its early stage, the universities have tended to establish a threshold entry language requirement to admit students to the EMI programs. Since the publication of the Common European Framework of References (CEFR, Council of Europe, 2001) following the Bologna process, the CEFR has been the most widely used framework in higher education to set language requirements for admission to the European universities (Xi et al., 2014; Deygers et al., 2018). Following this trend, the scores on the standardized language tests such as TOEFL, IELTS, and PTE Academic have also been aligned with the CEFR level descriptors as a result of the standard-setting studies reported by the test agencies (see, for example, Tannenbaum & Wylie, 2008; Papageorgiou, 2010). Although Green (2018) warned against assuming the exact equivalence between different test scores at the same CEFR level, the use of the CEFR as a uniform scale "makes it more feasible to compare entrance requirements across different countries and educational contexts" (Carlsen, 2018, p. 4).

B2 is the most common prerequisite proficiency level for L2 students to access higher education across Europe (Xi et al., 2014; Deygers et al., 2018). Similarly, in EMI settings around Europe, B2 level of proficiency is often considered a threshold level for direct entry to EMI undergraduate programs. For example, Jeffrey et al. (2019) found out that the entry language requirement of EMI departments in Madrid province is mostly B2 according to the CEFR, which should be accredited by external examination bodies or internal examination through universities language centers. Cicillini (2021) also found that B2 level of proficiency is the most common required level in EMI undergraduate programs in Italy although the requisite language proficiency ranges from C1 to B1 among the universities. However, Deygers et al. (2018) displayed that the decisions of stakeholders on establishing a certain entry language requirement are often unjustified, and rarely made based on an empirical study.

## National foreign language tests in Turkey

In addition to the international tests, there are also two national foreign language tests accepted by some of the universities for admission to EMI undergraduate programs. One of them, the National Foreign Language Test (YDS) is a standardized test developed by a professional committee of test developers at the Student Selection and Placement Center (ÖSYM) which is the governing body organizing several large scale nationwide examinations in Turkey. The principal function of the YDS is to evaluate the foreign language skills of test-takers in many languages but the English exam is the most frequently taken exam among Turkish citizens (ÖSYM, 2018). A sufficient score from this standardized test can be used as proof of language proficiency for several purposes such as academic promotion, recruitment in academic positions, admission to graduate programs, and exemption from compulsory preparatory English courses in EMI programs. The test is designed to evaluate the knowledge of foreign language grammar, vocabulary, text comprehension, and translation skills from Turkish to English and from English to Turkish employing 80 multiple choice items that should be answered in 180 minutes. The test-

takers are evaluated over 100 points and each item has an equal weight by the point of 1.25. The test does not address all language skills and excludes assessment of listening, speaking, and writing. The test can also be taken online (e-YDS) in the specified examination centers, and the design and the content of the test are no different from its equivalent traditional paper-pen YDS test.

ÖSYM also documents which international tests can be used in the place of the YDS, and provides a document describing the YDS equivalence of the scores taken from international examinations (ÖSYM, 2021). In terms of the English language, the valid international tests that can be used in governmental institutions are the Test of English as a Foreign Language Internet-based Test (TOEFL IBT), The Cambridge English C2 Proficiency exam (CPE), Cambridge English: Advanced and the Certificate in Advanced English (CAE), and Pearson PTE Academic. According to the document, the equivalent scores on these international tests corresponding to the national YDS exam scores are provided in Table 1.

*		,			
YDS	TOEFL IBT	СРЕ	CAE	PTE Academic	
100	120	A	-	90	
95	114	-	-	87	
90	108	В	-	84	
85	102	-	-	81	
80	96	С	A	78	
75	90	-	-	75	
70	84	-	В	71	
65	78	-	-	67	
60	72	-	С	55	
55	66	-	-	50	
50	60	-	-	45	
45	54	-	-	38	
40	48	_	_	30	

**Table 1.** Equivalence Table of the ÖSYM (2021)

Other than score comparisons given by the equivalence table above, there are no descriptors related to the scores on the YDS exam nor a current document describing the alignment of the YDS with any international frameworks such as CEFR or Global Scale of English (GSE). Such correspondence was documented in 2013 by corresponding a score of 70 on the YDS to the CEFR B2 level of proficiency (ÖSYM, 2013), yet there is no current alignment in the recent document (ÖSYM, 2021).

Besides the YDS, another standardized national foreign language exam is Foreign Language Test for Higher Education Institutions (YÖKDİL) which is also organized and administered by the ÖSYM. The YÖKDİL is similar to the YDS as both tests have the same structure including 80 multiple choice items assessing the similar areas that the YDS test covers. The YÖKDİL test differentiates from YDS tests in terms of the sub-sections of the item types and the number of items included in each sub-section. Another difference is that the YÖKDİL test is developed in three different disciplines of Science, Social, and Health Sciences by paying attention to the language specific to each discipline. In terms of the score descriptions, there is no documented report for the YÖKDİL test, nor is there

equivalency of the YÖKDİL test to the YDS test or the other international tests presented by the ÖSYM.

## Methodology

## Purpose of the study and research questions

The purpose of this study is to explore language requirements of undergraduate level EMI programs offered by public universities in Turkey in terms of the recognized national/international tests, the entry requirement scores from those tests as well as the rationale behind these decisions. The research questions this study seeks to answer are:

- 1. What are the recognized international/national tests for exemption from preparatory year by public universities offering EMI undergraduate programs in Turkey?
- 2.What are the language threshold levels or scores set for exemption from preparatory year by public universities offering EMI undergraduate programs in Turkey?
- 3. What is the rationale of the public universities in Turkey informing their decision of establishing the EMI entry language requirement standards?

## Research design

This study was designed as a mixed-method research where both qualitative and quantitative methods were employed. The official websites of the universities were reviewed to find out recognized national/international tests and the scores from those tests necessary for direct admission to EMI programs. The names of the recognized tests and required scores for each test are coded for each university on an Excel document and descriptive analysis were conducted. In addition, the documents were qualitatively reviewed and analyzed to explore the standard-setting decision of each university related to language requirements to exempt students from preparatory year of study.

## **Research context**

This study was carried out in the higher education context of Turkey where the number of partial and full EMI undergraduate programs in different fields has been increasing over the last 20 years led by the internationalization of higher education following the Bologna Process in 2001 (Karakaş, 2018). These programs are popular among students mainly due to instrumental reasons such as to access better career opportunities or prestigious jobs after their education (Başıbek et al., 2013; Kırkgöz, 2019) and to improve their English proficiency. The universities are also tended to provide EMI programs for global competitiveness and to attract more international students (Kamasak & Ozbilgin, 2021).

In Turkey, the EMI programs are mostly higher-ranked programs compared to Turkish-medium equivalent programs. To enroll in those programs, students need to obtain necessary scores from the national university entrance exam and prove their English proficiency through language scores on the recognized language test or a pass score on the in-house proficiency exam conducted by the universities. If the student does not have a

sufficient score or proficiency, they need to take part in a year-long language preparatory program and pass the proficiency tests at the end of the program. This study focuses on the language proficiency requirements of public universities for direct access to EMI undergraduate programs because these requirements indicate a threshold level beyond which stakeholders think that students will have fewer linguistic challenges.

## **Data collection**

In order to collect data for this study, public universities that offer full English-medium instruction in at least one of the programs were identified through the official website of YÖK (www. yokatlas.yok.gov.tr). Later, official policy documents and student handbooks from the websites of the universities, as well as the related policy documents from the websites of YÖK and ÖSYM were collected to find out the valid tests and minimum test scores/levels required by these universities to exempt students from preparatory programs. In line with the research questions, the document reviews were designed to identify the exemption criteria by means of national/international test scores and to understand the rationale behind the decisions of universities regarding setting those test scores. The final date of the data collection was 28 February 2022. As a first step, all the public universities offering full English-medium instruction in at least one of the undergraduate programs were included in the dataset. Later, some of the public universities were excluded from the dataset based on the following exclusion criteria:

- 1. If the universities offer full EMI undergraduate degree programs only in soft-EMI programs including American Language and Culture, English Language and Literature, (English) Linguistics, English Language Teaching, (English) Translation and Interpreting and/or international undergraduate programs (UOLP programs).
- 2. If the universities do not provide publicly available information about the tests and/or scores required for the exemption from the preparatory program on the Internet.
- 3. If the valid tests or test scores required for the exemption from the preparatory program were not specified.

As a result, 57 public universities were included in the main dataset of this study. The list of the included universities was provided in the Appendix.

## Data analysis

In order to analyze the collected data, qualitative document analysis and descriptive statistics were utilized. The national and international tests and the required scores from these tests were coded in a separate file and descriptive statistics were conducted to find out the valid tests and threshold scores to directly admit students to the EMI undergraduate programs. Later, qualitative document analysis (Bowen, 2009) was employed on the reviewed documents to understand the rationale behind the universities' decisions of setting those test scores as threshold scores for EMI programs. For reliability purposes, the coding procedure was negotiated with an expert language instructor working in one of the preparatory programs of a public university in Turkey.

#### **Results**

Research question 1. What are the recognized international/national tests for exemption from preparatory year by public universities offering EMI undergraduate programs in Turkey?

The valid international/national tests accepted by the public universities to exempt prospective EMI students from compulsory preparatory programs were sought in the official policy documents of the universities, in the student handbooks of the preparatory programs, and on the official webpages of universities. As a result, several international and national tests as listed by the universities were found as valid tests to prove a certain level of language proficiency for direct admission to EMI departments. The valid national tests, the number, and the frequency of the universities that accept a certain score from those tests are shown in Table 2.

**Table 2.** National foreign language tests recognized by the public universities

Names of the National Language Tests	n	%
National Foreign Language Test (YDS/e-YDS)	41	71.9
Foreign Language Test for Higher Education Institutions (YÖKDİL)	18	31.6

As Table 2 indicates, the National Foreign Language Test (YDS) administered by the ÖSYM is a valid means of proving sufficient language proficiency for EMI studies in 41 public universities (71.9%) among the total number of 57 public universities included in this study. Compared to the number of the universities accepting Foreign Language Test for Higher Education Institutions (YÖKDİL) (n=18; 31.6%), YDS is the most valid national language test among the public universities offering EMI undergraduate programs. Still, the YDS test is not accepted by all the public universities for exemption purposes.

The recognized international language tests were also listed by the universities in the related documents. Table 3 outlines the names of the international language tests accepted by the public universities, the number, and the frequency of the universities that accept a certain score from those tests.

Table 3. International foreign language tests recognized by the public universities

Names of the International Language Tests	n	%
Test of English as a Foreign Language Internet-based Test (TOEFL IBT)		100
Pearson Test of English (PTE) Academic		91.2
Cambridge English: Advanced and the Certificate in Advanced English (CAE)		82.5
The Cambridge English C2 Proficiency exam (CPE)		77.2
The International English Language Testing System (IELTS)		12.3
Cambridge First Certificate in English (FCE)		10.5
Test of English as a Foreign Language Paper-based Test (TOEFL PBT)		5.3

Test of English as a Foreign Language Computer-based Test (TOEFL CBT)		3.5
Test of English as a Foreign Language Institutional Testing Program (TOEFL ITP)		1.8
Oxford Test of English (OTE)		1.8
LanguageCERT		1.8

Among the recognized international tests for direct admission to EMI, all public universities included in the dataset of this study accept the TOEFL IBT test as a valid language proficiency test (n=57; 100%) and allow students to be exempt from compulsory preparatory programs if they can prove a certain score from TOEFL IBT test. While most universities require a certain overall score from TOEFL IBT, two universities, Abdullah Gül University and Boğaziçi University ask for a separate threshold score from the writing section (TWE) of the test for direct admission to EMI undergraduate programs.

Following TOEFL IBT, the other most valid tests are PTE Academic (n=52; 91.2%), CAE (n=47; 82.5%), and CPE (n=44; 77.2%). It is not surprising that the four top valid tests are the four international tests whose equivalence to the national YDS is reported by the ÖSYM. Besides those international tests, English Language Testing System (IELTS) test is recognized by seven public universities only (12.3%). Although the IELTS test is one of the most widely accepted language proficiency tests around the world in higher education institutions, it has been removed from the equivalence list of ÖSYM in 2004. As a result, the use of IELTS scores for admission to EMI programs is not common in Turkish higher education. Similarly, the scores on the Cambridge First Certificate in English (FCE) are not compared with the scores on the YDS test and the FCE test is not included in the equivalence list of ÖSYM, yet six public universities (10.5%) documented that they recognize the FCE test as a valid international test.

Apart from these international tests, Test of English as a Foreign Language Paper-based Test (TOEFL PBT), Test of English as a Foreign Language Computer-based Test (TOEFL CBT), Test of English as a Foreign Language Institutional Testing Program (TOEFL ITP), Oxford Test of English (OTE) and LanguageCERT examinations are identified as recognized international tests in the related official documents of some universities but the number of universities that accept the scores on these tests for direct admission to EMI is quite a few.

# Research question 2. What are the language scores or grades set for exemption from preparatory year by public universities offering EMI undergraduate programs in Turkey?

According to the reviews of official policy documents of the universities and the descriptive analysis, the sufficient minimum scores over a total score of 100 from national language tests, YDS and YÖKDİL, for direct admission to EMI provision are presented in Figure 1.

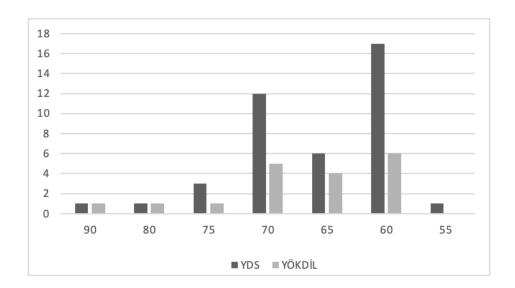
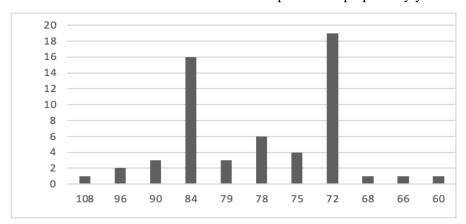


Figure 1. The minimum YDS/YÖKDİL scores set for exemption from preparatory year

As shown in Figure 1, the required minimum scores on YDS and YÖKDİL tests for exemption from preparatory programs range between the scores of 90 and 55 over total a score of 100. As the test does not have subskills to be tested, the score is determined as an overall score earned on the tests. The results show that a score of 60 on the YDS is determined as the most frequent threshold score by the universities among the ones that accept the YDS as a valid test for direct EMI admission (n=17; 41.5%). Similarly, a score of 60 on the YÖKDİL test is a common threshold score among the universities accepting the YÖKDİL test (n=6; 33.3%). As the ÖSYM does not provide information about the descriptors linked to the scores taken from the national language tests, it is difficult to interpret what the threshold scores mean in terms of the language proficiency that the test-takers achieve.

The minimum threshold scores from the TOEFL IBT test that is necessary for exemption from the preparatory programs and direct admission to EMI undergraduate programs at Turkish public universities offering EMI provision are shown in Figure 2.



**Figure 2.** The minimum TOEFL IBT scores set for exemption from preparatory year

As Figure 2 indicates Turkish public universities offering EMI provision mostly ask for a score of 72 that is earned on the TOEFL IBT test (n=19, 33.3%) followed by a score of 84 (n=16, 28,1%). Considering the TOEFL IBT linkage to the CEFR levels (https://www.ets.org/s/toefl-essentials/score-users/scores-admissions/set/) suggesting that the TOEFL IBT total scores between 72-94 correspond to the CEFR B2 level, it might be concluded that most of the universities setting the TOEFL IBT scores between 72-90 deem for CEFR B2 level of language proficiency for direct admission to EMI programs (n=51, 89.5%).

The two universities, Abdullah Gül University and Boğaziçi University not only set a TOEFL IBT total score for admission requirement for EMI programs but also identify a minimum admission requirement score for the Writing section (TWE) of the TEOFL IBT test. That is, Boğaziçi University admits students who earn a total score of 79 on the TOEFL IBT test if they can achieve a score of 22 over 25 on the TWE section. Abdullah Gül University, on the other hand, set a total score of 75 on the TOEFL IBT as a threshold score for admission on the condition that the prospective EMI students prove a score of 22 over 25 on the TWE section.

The minimum scores on the PTE Academic test required for the exemption from preparatory programs and direct admission to EMI undergraduate programs of public universities in Turkey are shown in Figure 3.

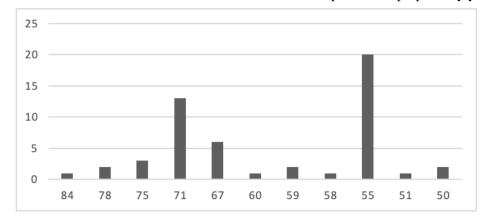


Figure 3. The minimum PTE Academic test scores set for exemption from preparatory year

As Figure 3 displays the minimum scores on the PTE Academic Test that are considered as admission requirements by most of the universities is a score of 55 (n=20, 38.5%) followed by a score of 71 (n=13, 25%). To interpret these scores, the mapping of PTE Academic Test onto the **CEFR** levels be considered the can (https://www.pearsonpte.com/scoring/understand-your-pte-score). According to correspondence, the scores between 43 and 58 are determined as equivalent to the CEFR B1 level of proficiency while the scores between 59 and 75 correspond to the CEFR B2 level. As a result, it might be concluded that most of the universities in Turkey require either CEFR B1 or CEFR B2 level of proficiency on the PTE Academic test except for three universities, Karadeniz Technical University (a score of 84), Kütahya Dumlupınar University (a score of 78), and Recep Tayyip Erdogan University (a score of 78) which

identify required minimum scores on PTE Academic test corresponding to CEFR C1 level of proficiency.

The minimum threshold grades on Cambridge Tests, The Cambridge English C2 Proficiency exam (CPE), Cambridge English: Advanced and the Certificate in Advanced English (CAE), and Cambridge First Certificate in English (FCE) required for direct admission to EMI programs are presented in Figure 4.

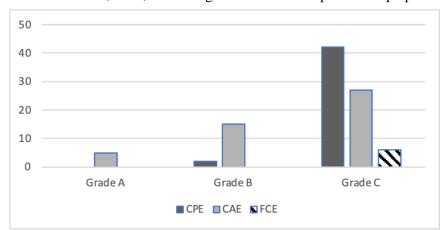


Figure 4. The minimum CPE, CAE, and FCE grades set for exemption from preparatory year

The Cambridge English C2 Proficiency exam (CPE), currently known as the C2 Proficiency test, is designed to assess whether the test-takers have a C2 proficiency level. Therefore, it is a pass-or-fail test and all three grades, Grade A, Grade B, and Grade C correspond to the CEFR C2 level of proficiency. The scoring of the test also provides assessment at the C1 level (<a href="https://www.cambridgeenglish.org/exams-and-tests/proficiency/">https://www.cambridgeenglish.org/exams-and-tests/proficiency/</a>). Among public universities that accept the CPE test as a valid test to verify language proficiency, the lowest grade, Grade C, was usually recognized as the minimum grade required for direct admission to EMI programs (n=42, 95,5%). Only two public universities, Karadeniz Technical University and Sakarya University ask for Grade B on the CPE test to exempt students from an obligatory preparatory year of study and direct admission to EMI programs.

The Cambridge English: Advanced and the Certificate in Advanced English (CAE) test, currently known as the C1 Advanced test, is targeted at the CEFR C1 level of proficiency and Grade B, and Grade C earned on this test corresponds to the CEFR C1 level of proficiency. The test also provides assessments at the level of C2 (Grade A) and B2 level (<a href="https://www.cambridgeenglish.org/exams-and-tests/advanced/">https://www.cambridgeenglish.org/exams-and-tests/advanced/</a>). The universities recognizing CAE grades for direct admission to EMI programs mostly identify the lowest awarded Grade C as a minimum grade to exempt students from the preparatory year (n=27, 57.4%). 15 public universities (31.9%) among 47 universities that accept CAE test results determine Grade B on the CAE test as a minimum grade while only 5 universities (10.6%) including Karadeniz Technical University, Kütahya Dumlupınar University, Akdeniz University, Sakarya University, and Zonguldak Bülent Ecevit University admit students

directly to the EMI programs if they can achieve the highest grade, Grade A (CEFR C2 level), on the CAE test.

Besides those two Cambridge tests, The Cambridge First Certificate in English (FCE), currently known as B2 First test, provides assessments at the CEFR B2 level if the test-takers achieve Grade B or Grade C. The test also provides assessment at the level of C1 (Grade A) and the level of B1 (<a href="https://www.cambridgeenglish.org/exams-and-tests/first/">https://www.cambridgeenglish.org/exams-and-tests/first/</a>). Only six universities among public universities recognize the FCE exam to verify language proficiency for purpose of direct access to EMI undergraduate programs, and in all of these universities, Grade C is determined as the minimum grade to be qualified as an EMI student without studying a preparatory year (n=6, 100%).

Other than these tests, the most frequent minimum band score that should be earned on IELTS or IELTS Academic test is 6,5 corresponding to CEFR B2 level (n=3, 42.9%). Only Boğaziçi University states that the overall band score that should be taken from IELTS Academic is a score of 6,5 in addition to a Pass score earned on the writing section (TWE) of the test. The minimum scores required from the least recognized language test such as TOEFL PBT and TOEFL CBT also correspond to CEFR levels between the B1 and B2 levels.

Overall, the findings related to the second research question indicate that the minimum scores set for direct admission to EMI departments range among the public universities in Turkey. In addition, when the required minimum scores on the international tests are interpreted by their correspondences to the CEFR levels, the most frequent required levels are also fluctuating between B1 and C2 levels. On the other hand, the minimum scores on the national tests cannot be interpreted as no benchmark is provided about what the students with at least those scores are likely able to do. As a result, the probable reasons why the public universities set those scores for EMI admission are investigated by the next research question.

# Research question 3. What is the rationale of the public universities in Turkey informing their decision of establishing the EMI entry language requirement standards?

When the reviewed official documents were qualitatively analyzed, it was found that some of the public universities offering EMI undergraduate programs set a certain requisite score from national language test(s) and directly indicate the equivalent of these scores on the international tests by referring to the equivalence table of the ÖSYM (n=22; 38.6%). The following excerpts are the English translation of the statements from the official documents of universities setting the standards in this way:

Those [prospective full EMI program students] who get at least 60 points from the central foreign language exam conducted by ÖSYM or an equivalent score from the national and international foreign language exam, whose equivalence is accepted by the ÖSYM Administrative Board. (Dokuz Eylül University)

Those [prospective full EMI program students] who have at least 60 and above in the Foreign Language Proficiency Exam conducted by ÖSYM and those who get the equivalent

score from the exams that they accept as equivalent (are exempted from the obligatory preparatory program). (Balıkesir Onyedi Eylül University)

[...] According to the ÖSYM Foreign Language Exams Equivalence table, which is current at the time of application for exemption, those who score at least 70 (seventy) in the foreign language exam YDS conducted by ÖSYM, in any of the other national and international foreign language exams that are considered equivalent to a score of 70 on YDS test (Çukurova University)

While those universities refer to the equivalence table provided by the ÖSYM based on a score on the national tests (YDS or YÖKDİL), it is not clear how they identify the minimum passing score on the national test(s). Only three universities indicate a CEFR linkage to the YDS test score which they set as a minimum score. These universities (Akdeniz University, Ege University, and Sakarya University) consider a score of 75 on the YDS test equivalent to the CEFR B2 level of proficiency and sets a score of 75 on the YDS test or the equivalent scores from international exams as a standard to directly admit students to EMI programs. However, there is no empirical study presented by any of those universities regarding how they linked the YDS score onto the CEFR.

CEFR-aligned curricula or CEFR-based modules have been stated on the official documents, webpages, or student handbooks of some universities (n=21; 36.8%). To illustrate, the following statements are the translations of the statements that indicate the implementation of CEFR benchmarks in the language programs:

The courses to be taught in the preparatory classes for a year are organized in a way that will develop the students' four basic language skills (reading comprehension, hearing comprehension, written expression, and oral expression) at the levels defined in the framework of CEFR. (Marmara University)

The School of Foreign Languages offers English education on the basis of the "Common Framework for Foreign Language Teaching-Teaching- (CEFR)" applied in European Union countries with its academic staff of sufficient quantity and quality. (Pamukkale University – Student Handbook)

You [the students] will follow the training program based on a system that determines the target behaviors you are expected to learn based on the Common European Framework of Reference for Languages (CEFR) learning outcomes. (Düzce University – Student Handbook)

While the alignment with the CEFR is reported by some of the language programs, the entry language requirements are rarely linked to the CEFR in many public universities offering EMI bachelor undergraduate programs. Because of the disparity between the CEFR benchmarks and the content of the national foreign language tests, linking the YDS/YÖKDİL scores to the CEFR is difficult. The most notable distinction is that the YDS test does not evaluate the four language skills and hence cannot match many descriptions of the CEFR. In the reviewed documents, only Hacettepe University indicates this discrepancy to explain why they do not recognize scores on the YDS test to admit students to the EMI programs. The translation of the statement follows:

Since the education carried out within the body of Hacettepe University School of Foreign Languages is based on four basic language skills; Foreign Language Placement Exam (YDS), which measures reading skills, grammar rules, and vocabulary [...] do not overlap with the proficiency exams administered by our unit and are not considered equivalent. (Hacettepe University)

Except for Hacettepe University, the other universities which do not recognize national foreign language tests for the direct access to EMI undergraduate programs, do not explain the reason why they do not accept those test scores. However, the rationale behind their decision is probably the same as that of Hacettepe University. For example, Abdullah Gül University and Boğaziçi University ask for the threshold scores on the writing sections of the international tests (such as TOEFL) in addition to the overall scores on the international tests, which implies their requirement of a threshold writing proficiency for direct EMI qualification. The fact that the national tests do not assess writing abilities is quite likely the reason for their reluctance to accept national test scores for direct EMI entrance. Kütahya Dumlupınar University has a different application regarding the acceptance of the YDS test scores. That is, the university accepts a score of 80 on the YDS test to exempt students from the first round of the in-house proficiency test assessing grammar, reading, and listening comprehension but obliges students to get a Pass score on the second round of the test assessing writing and speaking skills. Given this application, it can be inferred that the policymakers at the Kütahya Dumlupınar University find national tests partially valid and highlight their lack of assessing writing and speaking skills. However, these inferences could only be made out of the documented practice of the universities and may not reflect the real reason for their decisions because the public universities, except for Hacettepe University, do not inform their decisions about why they do not admit national foreign language tests.

On the other hand, the universities that do not accept national test scores or the ones identifying the scores independent from the equivalence table of ÖSYM listed scores on various tests required for the direct pass to EMI programs. Neither do these universities explain the reason why they set those scores as threshold scores to admit students to EMI programs. Not only the universities but also the ÖSYM does not provide any empirical evidence about how the mapping of the scores through different international test scores is possible. The latest document of "Directive for Determining the Equivalence of Foreign International Language Exams" (https://dokuman.osym.gov.tr /pdfdokuman/2021/GENEL/esdegerlikyonerge06042021.pdf) only includes information about the conditions to be required in international foreign language exams subject to equivalence, service fee, the equivalency application process, objection, and audit of international foreign language exams. Although the document states that the equivalency of international foreign language tests is based on the reports of the commission, there is no publicly available information about the details of this report.

### **Discussion**

The reviewed 57 universities in this study documented multiple national and international language tests to verify the language proficiency of the students to grant access to full EMI undergraduate programs. All reviewed universities recognized the TOEFL IBT test as valid proof of language proficiency. However, the analysis revealed a variance in recognition of other national/international tests and the minimum scores that should be earned on those tests for direct EMI access. The results are in line with the findings of Cicillini (2021) and Jeffrey et al. (2019) who also found differences among European EMI universities concerning setting and verifying prerequisite English competence levels. Overall, the results of the study revealed that there is no consistent policy among public universities in Turkey in terms of language tests to verify language competence and minimum language scores for students who wish to access the EMI program without studying preparatory programs. As a result of this case, a prospective student with a score on a specific language test can access the EMI undergraduate program without studying preparatory program in one public university while s/he cannot in another one.

The results also indicated that Turkish public universities mostly set entry language requirements as scores or grades on the language tests in contrast to European universities which are increasingly aligning their entry language requirements to the CEFR (Xi et al., 2014; Deygers et al., 2018). The alignment of the required scores on the international tests to the CEFR can be reached out to reports of the testing agencies; however, it is difficult make-meaning of the scores on the national foreign language tests as the testing body (ÖSYM) does not provide CEFR linkage or a description of the scores regarding what the students with at least those scores are likely able to do. Instead, the ÖSYM considers the scores on the national foreign language exam as benchmarks to make a comparison among different language tests and documents an equivalency table to correspond scores on the international exams (TOEFL IBT, CPE, CAE, and PTE Academic) to the specific YDS scores. However, the equivalency and interchangeability between different test scores should be taken with caution because the one-dimensional content of the YDS test is different from those of international tests addressing all four language skills (Green, 2018). Therefore, it might be suggested that the policies of the universities should move towards determining entry language scores as aligned with the CEFR (Kamasak & Ozbilgin, 2021) other than equivalent YDS test scores for EMI admission. This can also contribute to the standardization of EMI entry language requirements, and make it easier to compare entry language requirements of Turkish universities with different countries and EMI settings (Carlsen, 2018).

It is also revealed that national foreign language tests, particularly YDS, have been used to verify the language competence of the student for EMI programs by many public universities in Turkey. This may be due to the accessibility of the national foreign language tests by the Turkish students with regards to the fee of the tests or the familiarity of the students with the multiple-choice test content. However, the use of these national foreign language tests for the academic purposes has been debated on the grounds that these tests are limited to making a judgment on the abilities of the test-takers because of

their extensive focus on grammar and text comprehension (Aydın et al., 2016). The validity of those tests for the EMI admission can also be questioned as they do not specifically intend for evaluating the preparedness of the students for EMI. In this regard, future research might focus on the predictive effect of the national foreign language test scores on the language-related challenges of EMI students.

While the universities in Turkey are subject to the guidelines of the centralized governing body, known as the Council of Higher Education (YÖK) in many aspects, they have the autonomy to set entry language requirements for direct EMI admission (Yuksel et al., 2022). When the rationale of the public universities behind setting the prerequisite score/grades for direct EMI access was explored, similar to the findings of Deygers et al. (2018), it is found that the rationale of the universities is not based on any empirical study. Only one university implied that their entry language requirements are based on the CEFR to explain why YDS scores for EMI access were excluded. Three universities provided CEFR linkage to the requisite YDS score, yet they do not inform how these linkages were achieved. The universities tend to set a threshold YDS score for exemption from the preparatory programs and ask for the equivalent of this score on the international tests by referring to the equivalency table of the ÖSYM. However, it remains unclear why they set the determined YDS score as a threshold score. In addition, it was seen that the universities do not consider disciplinary differences to establish threshold scores. The only difference was made for the soft-EMI language-related programs such as English Language Teaching and Linguistics where higher entry language scores are required. Apart from this, the same language competence is asked for the Social Sciences programs and Mathematical, Physical, and Life Sciences programs. Given the recent research findings suggesting that "discipline differences might play a mediating role in the determination of a language threshold" (Soruç et al., 2021, p. 10), universities should consider the discipline-specific language needs of the students according to which they should establish entry language thresholds.

#### Conclusion

This study aimed to investigate language requirements of public universities in Turkey necessary for direct access to full EMI undergraduate programs. The results of this study revealed that the public universities in Turkey do not have a standardized policy to accept students into the undergraduate EMI programs. The prerequisite entry language scores on the international language tests range between B1 and C1 level of proficiency according to the CEFR. The required language scores on the national tests; however, do not align with the CEFR, which makes it hard to interpret the language ability of the students with a score on national tests. Although the number of EMI undergraduate programs has been exponentially increasing in recent years (Karakaş, 2018; Kırkgöz, 2019; Yuksel et al., 2022), the public universities' policy for accepting students with regard to their language competence is not uniformed across the universities and their decisions to set language requirements are not empirically founded. These results imply a need for a consensus among universities on language requirements to allow students exempt from preparatory programs and access to undergraduate EMI programs. In addition, the entry language requirements of the universities should be related to CEFR to

reach a common understanding of the language abilities of the prospective EMI students need to possess. The universities also should base their decisions over entry language levels for direct access to EMI on the empirical studies in the Turkish university setting which have been recently carried out in the EMI field (e.g. Soruç et al., 2021). Finally, the use of national language foreign language tests for direct EMI access should be reconsidered by policymakers due to the concerns over its inability to assess productive language skills that the EMI students mostly face challenges within the Turkish EMI setting. The development of the standardized national foreign language test assessing four language skills that would be used only for EMI access might also be suggested.

## Limitations of the study and suggestions for further research

The results of this study are limited with the majority of public universities offering EMI undergraduate programs in Turkey. Future research searching for entry language requirements in the private universities is needed to have a complete country profile with regards to language scores required for direct EMI access in Turkey. Moreover, the disciplines in which universities offer undergraduate programs were not considered in this study. Comparative studies between universities offering undergraduate programs in the same fields might also be considered.

### References

- Aizawa, I., Rose, H., Thompson, G., & Curle, S. (2020). Beyond the threshold: Exploring English language proficiency, linguistic challenges, and academic language skills of Japanese students in an English medium instruction programme. *Language Teaching Research*, 1–25. https://doi.org/10.1177/1362168820965510
- Ayers, J. B., & Quattlebaum, R. F. (1992). TOEFL performance and success in a master's program in engineering. *Educational and Psychological Measurement*, *52*, 973–975. <a href="https://doi.org/10.1177/0013164492052004021">https://doi.org/10.1177/0013164492052004021</a>
- Aydın, B., Akay, E., Polat M, & Geridönmez, S. (2016). Türkiye'deki hazırlık okullarının yeterlik sınavı uygulamaları ve bilgisayarlı dil ölçme fikrine yaklaşımları [The proficiency exam practices of the preparatory schools in Turkey and their approaches to the idea of computerized language assessment]. *Anadolu Üniversitesi sosyal Bilimler Dergisi*, 16(2),1–20. https://doi.org/10.18037/ausbd.388926
- Başıbek, N., Dolmacı, M. Cengiz, B.C., Bür, B., Dilek, Y., Kara, B. (2014). Lecturers' perceptions of English medium instruction at engineering departments of higher education: A study on partial English medium instruction at some state universities in Turkey. *Procedia-Social and Behavioral Sciences*, 116, 1819–1825. <a href="https://doi:10.1016/j.sbspro.2014.01.477">https://doi:10.1016/j.sbspro.2014.01.477</a>
- Bowen, G. A. (2009). Document analysis as a qualitative research method. *Qualitative Research Journal*, 9(2), 27–40. https://doi.org/10.3316/QRJ0902027
- British Council & TEPAV (2015, November). *The state of English in higher education in Turkey:*A baseline study. https://www.britishcouncil.org.tr/sites/default/files/he\_baseline\_study
  \_book\_web\_-\_son.pdf
- Carlsen, C. H. (2018) The adequacy of the B2 level as university entrance requirement. *Language Assessment Quarterly*, 15(1), 75–89. <a href="https://doi.org/10.1080/15434303.2017.1405962">https://doi.org/10.1080/15434303.2017.1405962</a>

- Cicillini, S. (2021). English language entry requirements in EMI degree programmes at bachelor level in Italy. 44, 53–66. https://doi.org/10.1285/i22390359v44p53
- Council of Europe. (2001). Common European framework of reference for languages: Learning, teaching, assessment. Cambridge, UK: Cambridge University Press.
- Dearden, J., & Macaro, E. (2016). Higher education teachers' attitudes towards English medium instruction: A three-country comparison. *Studies in Second Language Learning and Teaching*, 6(3), 455–486. https://doi:10.14746/ssllt.2016.6.3.5
- Deygers, B., Zeidler, B., Vilcu, D., & Carlsen, C. H. (2018). One framework to unite them all: Use of the CEFR in European university entrance policies. Language Assessment Quarterly, 15(1), 3–15. http://dx.doi.org/10.1080/15434303.2016.1261350
- Green, A. (2018). Linking tests of English for academic purposes to the CEFR: The score user's perspective. *Language Assessment Quarterly*, 15(1), 59–74 <a href="https://doi.org/10.1080/15434303.2017.1350685">https://doi.org/10.1080/15434303.2017.1350685</a>
- Harrington, M., & Roche, T. (2014). Identifying academically at-risk students in an English-as-a-Lingua-Franca university setting. *Journal of English for Academic Purposes*, 15, 37–47. <a href="https://doi.org/10.1016/j.jeap.2014.05.003">https://doi.org/10.1016/j.jeap.2014.05.003</a>
- Hill, K., Storch, N., & Lynch, B. (1999). A comparison of IELTS and TOEFL as predictors of academic success. *English Language Testing System Research Reports*, 2, 52–63. https://search.informit.org/doi/10.3316/informit.905454735271041
- Jeffrey S. J. M., Melchor M. D. R. and Walsh A. S. (2019). Linguistic requirements for students and staff on EMI undergraduate degrees at universities in the Community of Madrid. *European Journal of Language Policy*, 11(1), 95–107.
- Kamasak, R., & Ozbilgin, M. (2021). English medium instruction as a vehicle for language teaching or a product for marketing? The case of Turkey. In J.D. Branch & B. Christiansen (Eds.), The marketisation of higher education (pp. 321–341). Palgrave Macmillan, Cham. https://doi.org/10.1007/978-3-030-67441-0\_14
- Karakaş, A. (2018). Visible language-covert policy: An investigation of language policy documents at EMI universities in Turkey. *International Online Journal of Education and Teaching (IOJET)*, 5(4), 788–807. http://iojet.org/index.php/IOJET/article/view/436/294
- Kırkgöz, Y. (2019). Globalization and English language policy in Turkey. *Educational Policy*, 23(5), 663–684. <a href="https://doi.org/10.1177/0895904808316319">https://doi.org/10.1177/0895904808316319</a>
- Light, R. L., Xu, M., & Mossop, J. (1987). English proficiency and academic performance of international students. *TESOL Quarterly*, 21(2), 251–261. <a href="https://doi.org/10.2307/3586734">https://doi.org/10.2307/3586734</a>
- Macaro, E. (2018). English medium instruction. Oxford University Press.
- Macaro, E., Curle, S., Pun, J., An, J., & Dearden, J. (2018). A systematic review of English medium instruction in higher education. *Language Teaching*, 51(1), 36–76.
- Papageorgiou, S. (2010). Linking international examinations to the CEFR: The Trinity College London experience. In W. Martyniuk (Ed.), *Aligning Tests with the CEFR. Reflections on using the Council of Europe's draft Manual* (pp. 145–158). Cambridge University Press.
- Richards, J. C. & Pun, J. (2021). A typology of English-medium instruction. *RELC Journal*. <a href="https://doi.org/10.1177/0033688220968584">https://doi.org/10.1177/0033688220968584</a>
- Rose, H., Curle, S., Aizawa I., & Thompson, G. (2020). What drives success in English medium taught courses? The interplay between language proficiency, academic skills, and motivation, *Studies in Higher Education*, *45*(11), 2149–2161. <a href="https://doi.org/10.1080/03075079.2019.1590690">https://doi.org/10.1080/03075079.2019.1590690</a>

- Rose, H., & McKinley, J. (2018). Japan's English-medium instruction initiatives and the globalisation of higher education. *Higher Education*, 75(1), 111–129. https://doi.org/10.1007/s10734-017-0125-1
- Selvi, A. F. (2014). The medium-of-instruction debate in Turkey: Oscillating between national ideas and bilingual ideals. *Current Issues in Language Planning*, 15(2), 133–152. <a href="https://doi.org/10.1080/14664208.2014.898357">https://doi.org/10.1080/14664208.2014.898357</a>
- Soruç, A., Altay, M., Curle, S., & Yuksel, D. (2021). Students' academic language-related challenges in English Medium Instruction: The role of English proficiency and language gain. System, 103, 102651. <a href="https://doi.org/10.1016/j.system.2021.102651">https://doi.org/10.1016/j.system.2021.102651</a>
- ÖSYM. (2013). *Equivalences of foreign language exams*. <a href="https://www.osym.gov.tr/Eklenti/101.yabanci-dil-esdegerlikleri-250713pdf.pdf">https://www.osym.gov.tr/Eklenti/101.yabanci-dil-esdegerlikleri-250713pdf.pdf</a>?0
- ÖSYM. (2018). Numerical information on 2018-YDS Spring Term Results. <a href="https://dokuman.osym.gov.tr/pdfdokuman/2018/YDSILKBAHAR/SayisalBilgiler26042018.pdf">https://dokuman.osym.gov.tr/pdfdokuman/2018/YDSILKBAHAR/SayisalBilgiler26042018.pdf</a>
- ÖSYM. (2021). *International foreign language exams equivalences document*. <a href="https://dokuman.osym.gov.tr/pdfdokuman/2021/GENEL/esdegerlikdokuman06042021.pdf">https://dokuman.osym.gov.tr/pdfdokuman/2021/GENEL/esdegerlikdokuman06042021.pdf</a>
- Sultana, S. (2014). English as a medium of instruction in Bangladesh's higher education: Empowering or disadvantaging students? *Asian EFL Journal*, *16*, 11–52. <a href="http://hdl.handle.net/10453/119231">http://hdl.handle.net/10453/119231</a>
- Tannenbaum, R. J., & Wylie, E. C. (2008). Linking English language test scores onto the common European framework of reference: An application of standard setting methodology. *ETS Research Report Series*, 2008(1), 1–75. <a href="https://doi.org/10.1002/j.2333-8504.2008.tb02">https://doi.org/10.1002/j.2333-8504.2008.tb02</a> 120.x
- Yen, D. A., & Kuzma, J. (2009). Higher IELTS score, higher academic performance? The validity of IELTS in predicting the academic performance of Chinese students. *Worcester Journal of Learning and Teaching*, 3, 1–7. <a href="https://eprints.worc.ac.uk/id/eprint/811">https://eprints.worc.ac.uk/id/eprint/811</a>
- Yuksel, D., Altay, M., & Curle, S. (2022). English Medium Instruction programmes in Turkey: Evidence of exponential growth. In S. Curle, H. Ali, A. Alhassan & S. S. Scatolini (Eds.) *English-Medium Instruction in Higher Education in the Middle East and North Africa: Policy, Research and Pedagogy*. Bloomsbury Publishing.
- Wächter, B., & Maiworm, F. (2014). *English-taught programmes in European higher education:* The state of play in 2014. Lemmens Medien. <a href="https://doi.org/10.1017/S0261444817000350">https://doi.org/10.1017/S0261444817000350</a>
- Xi, X., Bridgeman, B., & Wendler, C. (2014). Tests of English for academic purposes in university admissions. In A. J. Kunnan (Ed.), *The companion to language assessment* (pp. 318–333). John Wiley & Sons, Inc.

## Appendix

The list of the public universities offering English-medium undergraduate programs in Turkey that were included in this study:

Abdullah Gül University	İstanbul Medeniyet University		
Adana Alparslan Türkeş Science and Technology			
University	İstanbul Technical University		
Afyon Kocatepe University	İstanbul University		
Akdeniz University	İstanbul University-Cerrahpaşa		
Alanya Alaaddin Keykubat University	İzmir Bakırçay University		
Anadolu University	İzmir Democracy University		
Ankara Hacı Bayram Veli University	İzmir Katip Çelebi University		
Ankara Social Sciences University	İzmir Institute of Technology		
Ankara University	Karabük University		
Ankara Yıldırım Beyazıt University	Karadeniz Technical University		
Aydın Adnan Menderes University	Kastamonu University		
Bandırma Onyedi Eylül University	Kütahya Dumlupınar University		
Boğaziçi University	Manisa Celâl Bayar University		
Bolu Abant İzzet Baysal University	Marmara University		
Bursa Uludağ University	Necmettin Erbakan University		
Çanakkale Onsekiz Mart University	Nevşehir Hacı Bektaş Veli University		
Çankırı Karatekin University	Niğde Ömer Halisdemir University		
Çukurova University	Ondokuz Mayıs University		
Dokuz Eylül University	Middle East Technical University		
Düzce University	Pamukkale University		
Ege University	Recep Tayyip Erdoğan University		
Erciyes University	Sakarya University		
Eskişehir Osmangazi University	Selçuk University		
Eskişehir Technical University	Sivas Cumhuriyet University		
Gazi University	Süleyman Demirel University		
Gaziantep University	Yalova University		
Hacettepe University	Yıldız Technical University		
Hitit University	Zonguldak Bülent Ecevit University		
İnönü University			