

TC. KOCAELİ ÜNİVERSİTESİ
SOSYAL BİLİMLER ENSTİTÜSÜ
YABANCI DİLLER EĞİTİMİ ANABİLİM DALI
İNGİLİZ DİLİ EĞİTİMİ BİLİM DALI

ANALYSIS OF LANGUAGE CHALLENGES FACED BY
STUDENTS IN TURKISH UNIVERSITY DEPARTMENTS WITH
ENGLISH AS THE MEDIUM OF INSTRUCTION ACROSS
VARIOUS VARIABLES

(M.A. THESIS)

Sevilay ŞAHİN EROĞLU

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To Ahmet Aziz and Mehmet Akif...

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ÖZET

Dünya genelinde, Türkiye gibi İngilizcenin ana dil olmadığı ülkelerde yükseköğretimde İngilizce diliyle eğitim veren programlara talep artmaktadır. Ancak, farklı bağlamlarda ve öğrenci gruplarında İngilizce eğitim programlarındaki öğrencilerin dil ile ilgili zorlukları kapsamlıca araştıran çalışmalar eksiktir. Bu çalışma, Türk öğrencilerin eğitim dili İngilizce olan programlarda karşılaştıkları dil zorluklarını inceleyerek bu araştırma boşluğunu doldurmayı amaçlamaktadır. Araştırma, İngilizce dil becerilerindeki farklı zorlukları ve bunların akademik başarıya etkisini araştırmaktadır. Devlet ve vakıf üniversitelerinde yer alan dört akademik bölümü, cinsiyet, öğrenim yılı, İngilizce eğitim dilinin yoğunluğu (%30 veya %100 İngilizce) ve önceki İngilizce eğitim deneyimi gibi değişkenleri dikkate alarak incelemektedir. Çalışma, nicel veri analiziyle yarı yapılandırılmış görüşmelerin tematik analizini birleştirerek, İngilizce eğitim alan öğrencilerin karşılaştığı zorlukları kapsamlı bir şekilde anlamayı hedeflemektedir. Bulgular, özellikle yazma ve konuşmanın, reseptif becerilere kıyasla daha zorlayıcı olduğunu göstermektedir. Konuşma hep en zorlayıcı beceri olarak ortaya çıkmaktadır. Cinsiyet, İngilizce eğitim dilinin yoğunluğu (%30 veya %100 İngilizce), üniversite türü, önceki İngilizce eğitim deneyimi ve öğrenim yılı, dil becerilerinde algılanan zorlukları etkilemektedir. Kadın öğrenciler, vakıf üniversitesi öğrencileri ve Matematik, Fizik ve Yaşam Bilimleri bölümünde okuyanlar ek zorluklarla karşılaşmaktadır. %30 İngilizce eğitim alan öğrenciler ve hazırlık sınıfı eğitimi görenler daha fazla zorluk yaşamaktadır. Yarı yapılandırılmış görüşmeler, öğrencilerin yabancı kelimeleri anlama, kendini ifade etme, dil bilgisi eksiklikleri ve dersleri takip etme konularında zorluklar yaşadıklarını göstermektedir. Bu zorlukları aşmak için kullandıkları stratejiler arasında bağlamdan anlam çıkarma, araştırma yapma ve çevrimiçi kaynakları kullanma bulunmaktadır. Bulgular, bu zorlukların ele alınmasının ve öğrencilerin dil becerilerini geliştirmek için desteğin önemini vurgulamaktadır. Bu çalışma, İngilizce eğitim alan Türk öğrencilerin karşılaştığı dilsel zorlukların kapsamlı bir analizini sunarak, yükseköğretimde akademik başarılarını ve İngilizce öğrenimlerini geliştirmek için öneriler sunmaktadır.

Anahtar Kelimeler: İngilizce dili ile eğitim, öğrencilerin dil zorlukları, dört dil becerisi

ABSTRACT

The demand for English-Medium Instruction (EMI) in higher education has been increasing worldwide, including in non-Anglophone countries such as Turkey. However, there is a lack of comprehensive studies investigating the language-related challenges faced by students in EMI programs, particularly in diverse settings and student populations. This study aims to address this research gap by examining the linguistic difficulties encountered by Turkish students studying in EMI programs. The research explores the challenges in different English language skills and their impact on academic achievement. It investigates four academic divisions across state and foundation universities, considering variables such as gender, year of study, type of EMI and prior EMI experience. The study combines quantitative data analysis with thematic analysis of semi-structured interviews to provide a comprehensive understanding of the challenges faced by EMI students. The findings indicate that productive skills, especially writing and speaking respectively, pose greater challenges compared to receptive skills. Speaking consistently emerges as the most challenging skill. Gender, type of EMI, type of university, prior EMI experience, and year of study influence the perceived difficulties in language skills. Female students, students in foundation universities, and those in MLPS departments face additional challenges. Partial EMI students and those who took preparatory classes encounter more difficulties. The semi-structured interviews reveal students' struggles with unfamiliar words, expression limitations, grammar knowledge gaps, and difficulties in following lectures. Strategies employed by students to overcome these challenges include inferring the meaning from the context, research, and utilizing online resources. The findings underscore the importance of addressing these challenges and providing support to enhance students' language proficiency for success in EMI courses. This study contributes to the literature by offering a comprehensive analysis of the language-related challenges faced by Turkish EMI students and providing practical implications to improve their academic success and English language learning in higher education.

Keywords: English medium instruction, students' linguistic challenges, four-skill

LIST OF ABBREVIATIONS

CLIL	: Content and Language Integrated Learning
DBE	: Developmental Bilingual Education
EAP	: English for Academic Purposes
EFL	: English as a Foreign Language
ESL	: English as a Second Language
EMI	: English Medium Instruction
GEP	: General English Proficiency
IELTS	: International English Language Testing System
L1	: Mother / Native Tongue
L2	: Target Language
METU	: Middle East Technical University (Tr. Orta Doğu Teknik Üniversitesi-ODTÜ)
MOI	: Medium of Instruction
MPLS	: Mathematical, Physical and Life Sciences
OSYM	: Öğrenci Seçme ve Yerleştirme Sınavı (Eng:Turkish Republic Student Selection Centre)

PYP : Preparatory Year Programme

TMI : Turkish Medium of Education

TOEFL :Test of English as a Foreign Language

TWI :Two-Way Immersion

YOK : Yüksek Öğretim Kurulu
(Eng. the Council of Higher Education)

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INTRODUCTION

This research aims to investigate linguistic challenges faced by English as a Medium of Instruction (EMI hereafter) students in different contexts, majors, and universities, considering factors such as gender, type of university, field of study, type of EMI program, prior Preparatory Year Programme (PYP hereafter) experience, and year of study in Turkey. This research was comprehensively and systematically conducted on a larger scale with both quantitative and qualitative data to provide new insights into language-related challenges by examining distinct students' cohorts and to offer practical suggestions to improve the academic success and English learning of EMI students in HE.

With this aim in mind, the validated version of Evans and Morrison's (2011) EMI Language-Related Challenges Scale was used in this research. The validation of the scale was realized by Kamaşak et al. (2021) in Turkish context and it involved 43 items pertinent to four language skills. In order to deepen and realize the comprehensive and systematic understanding of the findings, a semi-structured interview involving five questions by Altay and Dogan (2022) was employed in this research. The findings of the interview were analyzed through Maxqda programme.

In the first chapter, the background of the research, purpose of the study, statement of the problem, research questions, significance of the research and operational definitions are given. The second chapter gives an in-depth review of the literature about the topic with related subheadings. In the third chapter, the methodology of the research including research questions, research design, the setting, participants, data collecting instruments and procedures, data analysis methodologies, validity and reliability issues, and limitations of the research will be presented. The fourth part of the research gives detailed findings of both questionnaire and semi-structured interviews thoroughly. The final chapter discusses the results from all aspects of the research with a comprehensive manner along with implications and suggestions for further research.

CHAPTER I

1. INTRODUCTION

This section presents you with a short outline of the existing research. Information about the background of the research, purpose of the research, statement of the problem, is given in this chapter. Subsequently, research questions, significance of the research and operational definitions of the key terms are provided at the end of this part.

1.1. BACKGROUND OF THE RESEARCH

Though plurilingualism throughout the world is seen as a dreamboat (Doiz, Lasagabaster, & Sierra, 2013, p. xvii), English Medium of Instruction (EMI hereafter) has taken off exponentially at an unheard-of scale from its recorded beginnings in 1990s so far (Dafouz, & Ute, 2020: p. 12) and it has kept going on “its inexorable march as the global lingua franca” (Soruç, & Griffiths, 2018, p. 1). When it comes to the mushrooming phenomenon of EMI and the rationale behind it, globalization and internalization are regarded as the driving forces in various countries like in China (Zhang, 2018, p.543), Malaysia (Ali, 2013, p.75), Vietnam (Hung, & Lan, 2017, p.1) and Turkey (Kırkgöz, 2019, p.11). From the second half of the 20th century onwards, there has been a remarkable exponential growth in technology and business conducting to rapidly evolving economic and financial structures, internalization of education and altering demographics (Macaro, 2018, p.5). The rise in the flow of goods, services and people brought interconnectivity and necessitated the growth of English as a lingua franca (ELF hereafter) as a common language use internationally is indispensable in this very sense (Macaro, 2018, p.5). As a worldwide language, English symbolizes ‘a social, cultural, intellectual, linguistic, political and economic corpus’ (Barwani, & Al-Hawsawi, 2014, p.200). Thus, people operating in a globalized environment need to know high proficiency level of English alongside their home languages in order to cope with the requirements of this globalized world. This linguistic hegemony can be observed in the rapid spread and proliferation in all folks of universities throughout the world that offer EMI in their diverse programmes

(Lagasabaster, 2022, p.1). With the effect of globalization, universities wanted to attract international students, teachers and researchers with the aim of increasing stakeholders' mobility, increasing their financial incomes, rising at the international university ranks, thereby rising its reputation, improving English proficiency, facilitating graduates' use of proficient English in their work life and also obviating the labor and brain drain by attracting the domestic students to their institutions (Lagasabaster, 2022, p.1; Macaro, 2018, p.6). The praxis of EMI, for this very reason, entails an enterprise to attract international students as well as retaining local ones (Lagasabaster, 2022, p.5). Thus, English as an international lingua franca pressure educational institutions to offer a 'transnational' or a 'blended' education, not only national education (Macaro, 2018, p.6). Coleman (2006) considers that "while the global status of English impels its adoption in higher education (HE hereafter), the adoption of English in HE further advances its global influence" with the graduated students from English-taught disciplines joining the international workplaces (p.4). There is a 'push and pull effect' between globalization and English as they support each other, therefore, the pull of globalization in commerce and internalization in education is consolidated with the push of Global ELF (Macaro, 2018, p.6). Altbach and Knight (2007) describe internationalization as the policies and practices of higher education and other educational institutions to meet the needs of global educational environments (p.290).

The internalization of HE requires EMI as institutional means in reaching the aforementioned objectives of the universities (Doiz, Lasagabaster & Sierra, 2013, p.348). Englishization of HE (the use of English instead of previously used local language) has sounded such a '21st century' and developed at such a noteworthy speed that Macaro (2018) thinks nearly nothing can be done "to halt the express train of EMI" (p.300) while Block and Khan (2021, p.7) consider EMI as 'TINA (there is no alternative)' and Lasagabaster (2021, p.77) consider it as a linchpin of internalization processes. EMI is defined as "The use of English to teach academic subjects (other than English itself) in countries of jurisdictions where the first language of the majority of the population is not English" (Macaro et al., 2018; p.15). The rising global demand for qualified language users as well as growing worldwide demand for EMI courses requires a qualified

education for English language learners throughout the world (Barnawi & Phan, 2014, p.1). According to Macaro (2013-2014), institutions adopting EMI gain two benefits: Firstly, they internationalize their institutions with welcoming students across the world, this promotes their revenue and global prestige. Second benefit of adopting EMI is its being a driving force for the change in the pedagogy of higher education as it brings higher levels of interactivity alongside English taught programmes (p.30). The long-term inclusive goal of EMI is considered by Macaro (2013–2014) as:

“To promote knowledge and understanding of an academic subject such as physics or economics, and that historical and geopolitical factors have determined that such a subject (in non-Anglophone countries should be taught through the medium of English rather than in the majority language of the country in which the programme is taking place” (p. 28).

As for Turkey setting, it has a long historical background in EMI. Beginning with the Establishment of Turkish Republic in 1923, the administration of opening to the Western World policy alongside the internalization driving force underpinned English as a foreign language (EFL) to extend alongside the country (Kırkgöz, 2017, p.238). The essential factors behind Turkey’s prioritizing English in HE are that it needs English for economic competitiveness and national reconstruction to correspond globalization in the world arena and English serve instrumentally as a profit for a better distinguished education and a more prestigious job prospect (Kırkgöz, 2019, p.11). In HE in Turkey, globalization and internalization processes put forward EMI agenda by encouraging and allowing officially foundation universities alongside with state universities to take initiative for delivering EMI courses. The call made a sound with the significantly increasing number of EMI departments in Turkey (Kırkgöz, 2019, p.11). EMI brings advantages to the undergraduates of the related nation. As most majors’ content is already available in English, home students can reach and learn academic subjects through EMI more easily and more cost-effectively and they can enhance their chance of having global employability in the world market arena and the home country can develop their English language proficiency capacity (Macaro,2013–2014, p.30). The EMI trend, while

promoting benefits and prospects such as well-paid jobs, has been strongly put down for diminishing the quality and efficacy of HE in activities for educating and acquiring related knowledge as proved by a bulk of considerable verifications regarding EMI implementation conducted by various researchers revealing that students experience important challenges in dealing with the requirements of EMI HE researches. Lasagabaster (2021) suggests that “Englishization is inextricably intertwined with identity, if the local cultural identity is underpinned and the stakeholders are given voice, this glocal (global and local) perspective will benefit universities and will bolster the internationalization process” (as cited in Lasagabaster, 2022, p.10). Accordingly, as this thesis’s main purpose is presenting the challenges and the difficulties with regard to EMI students confront with and investigating how they learn through EMI by examining the hindering factors their study via EMI, students as the main stakeholders are given a voice.

1.2. STATEMENT OF THE PROBLEM

Turkey’s globalization and internalization orientation have directly influenced universities and their stakeholders as many other countries. Students, generally speaking, have a positive stance towards EMI education as EMI facilitates their future professional and academic career and economic and financial status (Arkin & Osam, 2015; p.177; Doiz et al., 2019; p.153). However, these advantages are accompanied with considerable difficulties for the EMI students. EMI learners incline to underscore that the conduct of English in instruction lead to more complex learning processes for them (Lasagabaster, 2022, p.17). English language proficiency has a significant role, as the higher level of language proficiency students have, the less difficulty they have in EMI courses and those who have less command of language face more linguistic challenges (Lasagabaster, 2022, p.17). Some studies revealed that students preferred EMI instruction’ s progressing from easier to more complex subjects (Arnó-Maciá & Aguilar-Pérez, 2021, p.30). Students believe that EMI has positive profits on the improvement of four language skills even if their English language proficiency is low (Belhiah & Elhami, 2015, p.20). They also state some language-related limitations. Though many difficulties students confront with in their EMI majors were interpreted with various perspectives, it is clear

that ‘linguistic challenges, lecture comprehension difficulties, cultural challenges, emotional challenges, insufficient resources or inadequate methods are regarded as the prominent challenges hindering students’ learning journey’ (Nguyen, & Tran, 2022, p. 29). In their revise of students’ EMI challenges, Aizawa et al. (2020) grouped the challenges students face and mentioned about four types of challenges: namely, language-related challenges, institutional challenges, culture-related challenges, and materials-related challenges (as cited in Altay et al., 2021, p.6).

To abridge the challenges experienced by EMI students, first of all, the language-related challenges students engage with in EMI educational settings must be understood well. For this aim that is the triggering force, the body of the current mixed-method research seeks to address deeply the linguistic challenges and skill-based problems with four dimensions (reading, writing, speaking and writing) that students confront with during EMI processes in a broadened setting.

1.3. PURPOSE OF THE RESEARCH

Albeit but not new, Englishization processes of higher education institutions have boomed and become such a global trend that English, now, has the role of main academic lingua franca throughout the world and Turkey is no exception from this undoubted fact. With the rise of EMI in HE, research into this field has also witnessed a remarkable number of studies for the few decades.

For all that Chapple (2015) describes EMI in HE as a “galloping” phenomenon (p.1), it is not without its drawbacks in implementation. In the same vein, EMI calls for numerous challenges that need to be dealt with. Various studies (e.g., Dearden & Macaro, 2016; Roothoof, 2019; Tarhan, 2003) perused teachers and students’ perceptions about EMI, some studies displayed comprehensive difficulties all the EMI stakeholders encounter (faculties, teacher or students) (Soruç, & Griffiths, 2018), some other studies investigated the influence of EMI on learning results (Dafouz & Camacho-Miñano, 2016).

One of the most problematic areas that must be faced among the stakeholders of EMI as the core interlocutors are the students and their needs. Although students mostly tend to have a favorably affirmative stance towards EMI, they also mention experiencing some cons of it. As aforementioned above, students' skill-based challenges as hindering factor will be touched upon in this thesis to reveal overall picture of what EMI students experience during their courses.

Students' language-related challenges have been handled at diverse contexts such as in Japan (Aizawa et al., 2020; Rose & McKinley, 2018), in Hong Kong (Evans, & Green, 2007; Evans & Morrison, 2011) and in Turkey (Kamaşak, Sahan, & Rose, 2021; Soruç, Dinler, & Griffiths, 2018). There are a few quantitative studies on students' language-related challenges in Turkish context such as Kamaşak, Sahan and Rose (2021)' research or qualitative researches such as Soruç and Griffiths (2018)' research or mixed-method researches such as Altay and Yüksel's paper (2020).

In this regard, these scholars' studies paved the way for this research. This topic can still be considered in a state of infancy. Besides, not a single research or a thesis, to our best knowledge, has given a place to mixed-method research to display all the skill-based linguistic challenges EMI students confront with in different HE universities' contexts with different majors in a paper by taking into account gender, type of university, field of study, type of EMI: full (100% EMI) or partial (30%), taking a preparatory class prior to EMI programme and year of study with a new and bigger sample alongside with interview data. Therefore, the point of the departure for the current research is to address this well-positioned gap by replicating the currently studies' scale in a written thesis with a brand bigger sampling in order to shine a new light on and further illustrate the language-related challenges by taking into account the most effective possible factors such as type of university and type of EMI into account while supporting the quantitative findings with qualitative interview data with the aim of helping putting forward the academic success of EMI students and their English learning in HE with suggestions in the light of the resulting practical implications.

1.4. RESEARCH QUESTIONS

With respect to the abovementioned purpose of the research, this paper seeks to address the following research questions below:

1. What are the skill-based linguistic difficulties EMI students have in Turkish HE context?
2. Do these language-related difficulties show differences in relation to:
 - a) gender,
 - b) type of university (state vs. foundation)
 - c) field of study,
 - d) type of EMI (full EMI or partial EMI),
 - e) whether or not attending the preparatory class prior to EMI programme,
 - f) year of study?
3. How do Turkish university students attending partial or full EMI programmes perceive language and learning challenges?

1.5. SIGNIFICANCE OF THE RESEARCH

In order to shorten the unattainable gap between the idealized EMI in HE context and the realized EMI, it is hoped that this thesis with a big and new sample size will serve as a beneficial tool for shortening the distance of the gap in reality and will make an original and a comprehensive contribution to the literature in this respect. Making research into the students' challenges of EMI in various contexts across the country instead of only one university context like previous literature in the field (exp. Kamaşak et al. (2021)) provides to assess the success of the implementation of EMI majors in HE and accordingly eases the complex nature of the curriculum innovation processes in HE institutions.

Comprehending the challenges students face with will have HE institutions provide a better aid for students' learning academic context knowledge with better English skills. By reporting where the related challenges assemble around the four domains of English language with the results of this research, institutions' English preparatory programmes can develop better ways for their students in attaining academic course and academic proficiency in English by interacting with the four skills of the language. Therefore, it can be claimed generalizability to a certain extent concerning understanding about that the difficulties students have in receptive and expressive language skills in English can estimate their achievements in EMI academic majors in Turkish HEs.

1.6. DEFINITIONS OF THE KEY TERMS

CBI (Content-Based Instruction): CBI is an approach of teaching languages in which language itself is just a mean for the study of a particular subject or content area. Students incidentally learn the language here while studying the subject matter through it.

CBLT (Content-Based Language Teaching): It is an instructional approach with which nonlinguistic subjects such as maths or history are taught to learners through an additional language they are learning.

CEFR (Common European Framework of Reference): “A guideline used to describe achievements of learners of foreign languages across Europe and, increasingly, in other countries” (Curle et al., 2020, p.5).

CLIL (Content and Language-Integrated Instruction): CLIL is an approach for language teaching in which the focus is based upon both language learning with four skills of it and content of the subject matter learning.

EAP (English for Academic Purposes): The term is a subheading or a selected category of English for Specific Purposes.

EFL (English as a Foreign Language): The term describes English learned by non-native speakers in countries English is not the national mode of interaction or it is not widely spoken there.

ELF (English as a *Lingua Franca*): It is a term used globally as a means of communication among the speakers none of whom shares the same first language. English has a worldwide status as ELF in today’s world and has usage in a wide range of domains such as education, politics, economics, trade, medicine etc.

EMI (English Medium Instruction): It is a term for “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. 37).

ENL (English as a Native Language): English language which people acquire as mother tongue or first language.

ESL (English as a Second Language): The use of English language by non-native speakers of it in English speaking environment.

ESP (English for Specific Purposes): An approach to language proficiency for the chosen discipline via special courses and particular methods so as to match the academic needs of the related professional or academic needs of the speakers in acquiring the selected language genres, skills and occupational features.

FULL EMI: Programmes in which all the educational activities, coursebooks and assessment is done in English which is not the home language of the university.

HE (Higher Education): University institutions including colleges that offer education in diverse fields such as engineering, medicine, geography or law.

L1 (First Language): the native language or mother tongue of the speakers who acquire it from birth.

L2 (Second Language): The language speakers learn or are taught besides their native language. L2 here represents English as the additional language.

PARTIAL EMI: Programmes in which related course materials instruction, learning code and evaluation are conducted primarily in home country’s language and partially in English. The rate of English differs in countries.

1.7. LIMITATIONS

The related research's main limitation is the non- equal distribution among the variables. If needed to be listed namely, there were not nearly near numbers in all four departments of division, the number of the students in full EMI outnumbered the number of partial EMI students more than two times and there was also inequality in the number of the students in state and foundation universities. It was anticipated to reach nearly an equal number in different variables through snowball sampling, but it was not possible as students were not easily volunteer after such a long time of online teaching and the technological burden it brought to them. Trying to access to the prospective attendants to research through convenience sampling was not that easy especially in foundation school as they had strict rules for admitting delivering any research among their departments without long, formal and ethical procedures or they sometimes did not accept any researchers who were not their own students. This situation was also the case not only with the convenience sampling but also with the snowball sampling in the online questionnaire.

The second main limitation is the low number of interviewees when compared to the big number of students that was reached through questionnaire. After being sent an invitation mail upon their attendance for the questionnaire and gotten a positive answer, negotiating again with the students who accepted to have the interview took longer than anticipated, there was a delay of commencing interview data collection or a breakdown of communication with those students.

CHAPTER II

This chapter consists of two headings. In the very beginning, background information about English medium instruction, related literature review about its implementation around the world and in Turkey is given. In the second part, students' linguistic challenges in EMI and related studies throughout the world and in Turkey will be given place.

2. LITERATURE REVIEW

The bulk of current previous research review is presented with the aim of supplying a theoretically grounded framework in a comprehensive and integrative manner to illustrate the complexity, dynamism and highly diversity of EMI phenomenon in four basic parts. In the first part, English arising as a Lingua Franca in the shades of globalization and internalization is given a place. In an attempt to present its roots and development as a background of EMI and to clarify the confusion in the scope in the second section, a comparison and contrast is made among EMI, CBI and CLIL and their unique features along with bearing resemblances are explained. Then, the rationale behind EMI and its development both across the world and Turkish context including its language policy, implementation practices and present situation are clarified respectively. Bearing the core focus of this research, language and content learning in EMI and both challenges and perceptions of the students experiencing during their journey in EMI is review in the last part.

2.1. GLOBALIZATION AND ENGLISH AS A *LINGUA FRANCA*

Globalization has established close connections among the countries across the world (Grupta, 2015). By lifting the barriers, globalization has interconnected the countries' national economies and liberated commerce and trade resulting in neo-liberalism (Olsen, & Peters, 2005). Its results, however, are not only economic, but also seen in cultural, social and political dimensions (Augus, 2004; Saha, 2005). Though it has

many different interpretations from very diverse perspectives, Rottenberg (2003) describes globalization as “the acceleration and intensification of interaction and integration among the people, companies and governments of different nations.” (p. 2). It has let the mobility of ideas, people, technology, goods and all sorts of things to expand at an unprecedented speed internationally (Lakoff, 2004). Correspondingly, an international interdependence has come out not only economically but also socially in life. This world-wide interconnectedness (Held et al., 1999) and all these globalization processes necessitate communication in the central place. In addition to influence economical and humanitarian institutions such as educational sectors, communication itself has also impelled and strengthened the flow and exchange of folks, stuff, technology, miscellaneous brand ideas and cultures across distinct borders of states (Zembylas, & Vrasidas, 2005).

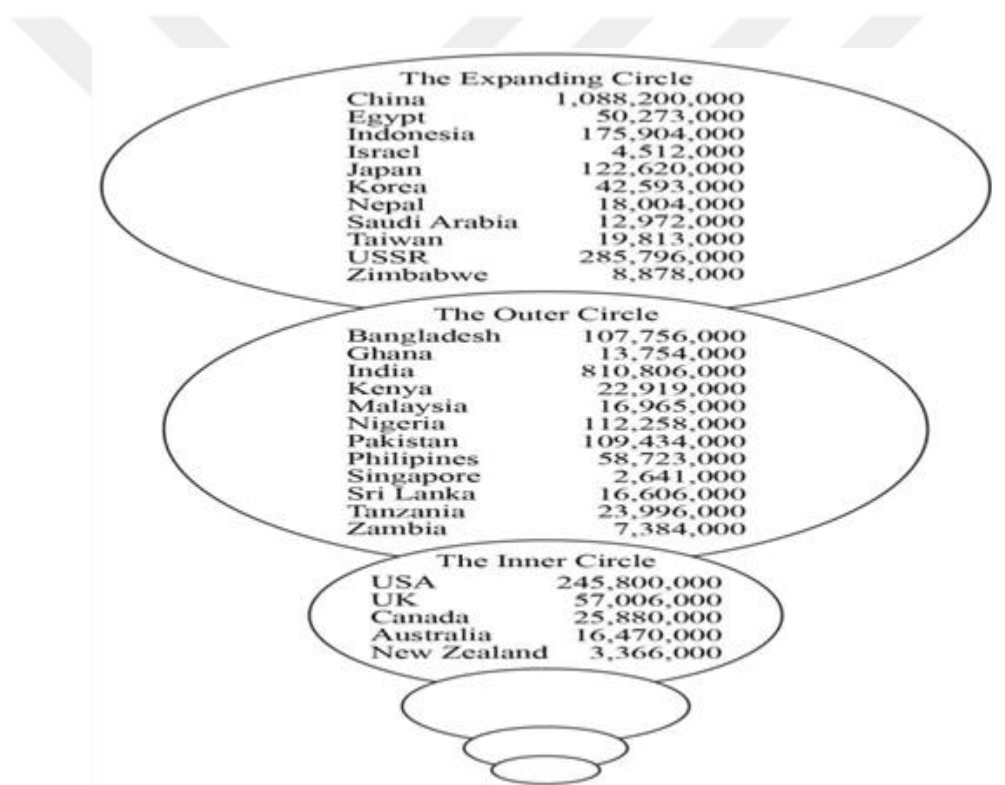
This excessive demand in communication has entailed a mutual language as a *sine qua non* of globalization. Throughout the history, many languages such as Latin, French or Arabic were used as a common communication tool among people as a result of the socio-economic variables of the day and the location. This tool was named as ‘*lingua franca*’ in its very definition by Firth (1996). He (1996) defined ‘*lingua franca*’ as “a ‘contact language’ between persons who share neither a common native tongue nor a common (national) culture, and for whom English is the chosen foreign language of communication” (p. 240). With the highly accelerated globalized world of today, it is a well-known and irreputable fact that there is a language hierarchy because of the expansion of powerful nations’ ideologies and cultures (Lasagabaster, & Doiz, 2021). The communication medium of choice is highly associated with the dominance of powerful nation’s language over other less powerful ones (Coleman, 2006). In this very sense, English is the medium of communication in today’s world owing to Euro-American hegemony in politics, military, economy, culture and communication (Gupta-Basu, 1999). This phenomenon is named as *English as a Lingua Franca* (ELF hereafter). After the Second World War, English became the world-wide ELF even in the non-colonized parts of the world. Today, English is the command of communication in business, media, technology, science, trade, economy, international relations, education through sharing

and dissemination of knowledge, and information with the mobility of people (Macaro, 2018; Tarhan, 2003).

Despite its depiction as “... any use of English among speakers of different first languages for whom English is the communicative medium of choice, and often the only option” (Seidlhofer, 2011, p. 7), ELF is used not only among non-native speakers of it but also among native speakers whose first language is English (Seidlhofer, 2005: p.8). With the aim of making a discrepancy among them, Kachru (1990) separated the speakers of English in three classes, which is proverbial as “three concentric circles of World Englishes (WE)” (p.12). Inner circle countries such as the U.S.A, the U.K., New Zealand represent the speakers whose first language is already English (Kachru, 1990: p. 10) and in outer circle countries such as Kenya, Malaysia and India, colonized in the past, people use English as their second official language (Kachru, 1990: p.10). Foreign speakers of English constitute expanding circle countries such as Turkey, Japan, Egypt or Poland (Kachru, 1990: p.11). In terms of pedagogical contexts, inner, outer and expanding circles may be thought respectively as English as a Native Language (ENL), English as a Second Language (ESL) and English as a Foreign Language (EFL) (Kachru, 1984: p.22). This seemingly innocuous demarcation of the circles may not be clearly discerned from one another owing to potential and subtle changes in situations, diverse language policies, contexts and people’s stances towards the language they use over time (Pung, 2009: p.10). As a result of all these alterations over time, the pioneering model of “World Englishes”, Kachruvian paradigm begs the question of how effective these demarcations are and the circles have been strongly criticized as “the classification of Englishes into circles or along national boundaries oversimplifies the sociolinguistic realities” (Saraceni, 2010: p.55) and these national borders are just “stuck within twentieth century frameworks of languages and nations” (Pennycook, 2010: p.681). Besides these criticisms, the very fact that the command of ELF has gone beyond the boundaries of inner circles and outnumbered native speakers with its second and more astonishingly foreign speakers has left no dispute over it at all (Jin, 2010: p.463). In the same vein, today, outer and expanding circles countries’ frontiers cannot be separated obviously. Likewise, second and foreign language terms can be used instead of each other owing to waning discrepancy between them (Pennycook,

2010: p.685). Although Kachru's model (as shown in Figure 1 below) is viewed by critics that it was pigeon-holed the panacea role and dominance of English by forcing boundaries, Kachru's three concentric circles model is still accepted as a significant indicator of English as a lingua franca across the worldwide (Al-Mutairi, 2019: p.88).

Figure 1. Kachru's three concentric circles of World Englishes (WE) (Kachru, 1992, p.356)



2.2. INTERNALIZATION AND ENGLISHISATION OF HIGHER EDUCATION

All these innovations with globalization in all fields have yielded English as a global medium of conduct throughout the world as a foreign language. The states around the world started to implement new language policies and strategies in their education system to integrate with the other countries. The language policy of a country involves

language use, language ideology and its management by the related authorities (Macaro, 2018: p.45; Spolsky, 2004: p.5). Hashimoto (2013) defines language policy as “a way to protect, enhance or undermine the language rights of speakers of a given language in a society where more than one language is used in the public arena” (p. 29). This means that one can ascertain a country’s language policy by examining its language implementations (Ege, 2020: p.12). In history, many language policies have been used to keep up with the requirements of that time. At an international level, the European Union, the Association of Southeast Asian Nation (ASEAN) and the Gulf Cooperation Council are the main language policies (Macaro, 2018: p.46).

Europe, in particular, has witnessed four distinct initiatives as a language policy. These are “the mother tongue plus two other languages, Content and Language Integrated Learning, the Erasmus Programme and the Bologna process” (Macaro, 2018: p.46). The first one advocates introducing second language (L2 hereafter) at a very early age as possible. The second one is about teaching thematic structures through a foreign language of schooling specified for a country beforehand as a language policy. ‘Erasmus’ stands for ‘European Region Action Scheme for the Mobility of University Students’. In this respect, the Erasmus Programme is related to the exchange of university students with a foreign university and their obtaining twenty first century skills along with L2 learning. Lastly, the Bologna Process, known as the Bologna Declaration, was an agreement made in 1999 among the European Union countries with the aim of setting a common European framework for qualifications in higher education (HE hereafter) by lifting boundaries in the flow of students (Coleman, 2006: p.4). It also provided equivalence in degree structures at all levels from undergraduate (UG hereafter) to postgraduate (PG hereafter) by setting standards. This declaration gave a momentum in the spread of ELF worldwide as all the implementations, procedures and publications were predominantly done in English (Macaro, 2018: p.50).

The report for Internationalization of HE defines internalization as: “intentional process of integrating an international, intercultural or global dimension into the purpose, functions and delivery of post-secondary education, in order to enhance the quality of

education and research for all students and staff, and to make a meaningful contribution to society” (De Wit et al., 2015: p.28). Internalization of HE has been an important issue since 1980s (Knight, 2013, p.84) by bringing universities’ education, research and dissemination of its services with international facets together (Hudzik, 2011: p.8). Within these respects towards internalization, it is easy to say that internalization of HE outpaces the globalization of HE (Curle et al., 2020: p.17). While globalization of HE is highly associated with the educational mobility of undergraduates and academic personnel in the interlinked educational procedures throughout the world, the internalization of HE symbolizes meaningful, genuine intercultural interaction and learning processes in accordance with British Council’s views about internalization of HE (Altbach, 2002: p.3; Curle et al., 2020: p.16; Gu & Schweisfurth, 2011: p.612; Lomer & Anthony-Okeke, 2019: p.617; Mittelmeier et al., 2018: p.267). Altbach and Knight (2007) clearly make a discrepancy between globalization and internalization with their statement that is:

“Globalisation and internationalisation are related but not the same thing. Globalisation is the context of economic and academic trends that are part of the reality of the 21st century. Internationalisation includes the policies and practices undertaken by academic systems and institutions – and even individuals – to cope with the global academic environment” (p.290).

Accordingly, globalization is altering the nature of internalization while internalization is altering the nature of higher education (Knight, 2007: p.1).

The internalization processes have adopted a transnational aspect progressively (Knight, 2007). In the same vein, the internalization of HE can be named as synonymously “transnational, cross-border, borderless or offshore higher education” (Kosmützky, & Putty, 2016: p.9). Borderless HE refers to the blurring and diminishing boundaries of the countries geographically albeit, this term includes the disappearance of the borders in disciplines, time and notions as well. Transnational and offshore HE indicates the diminishing significance of the student place where he/she takes his/her higher education.

Cross-border higher education reminds the national borders again for formal processes, accreditation or funding etc. (Knight, 2005).

All these efforts and processes have accelerated the internalization as a key motivation for the growth of EMI in the global scene (Macaro et al., 2019). The motivational factors commensurate with EMI behind internalization of HE are “programme and institutional mobility, student and staff mobility, and internalization of the curriculum” (Curle et al., 2020, p. 18). Moreover, diversification of scholar and programmes provided, foreign language study involvement and many other internationally-minded social chances are the opportunities alongside HE internalization (Mittelmeier et al., 2018: p.267). It is worth noting that these and many more different aspects of internalization of HE have led to the dissemination of English in producing, distributing and spreading the academic knowledge in global contexts through EMI (Ha, 2013: p.162).

2.2.1. English Medium of Instruction (EMI)

As a result of globalization, competition in the world market and university internalization, Englishisation of tertiary education has been fueled globally not only in English speaking countries officially (once colonized by the UK), but also in countries with different L1 backgrounds (especially in developing countries) (British Council, 2014: p.4; Galloway, & Rose, 2015: p.230). EMI and internalization have been so intertwined that the term Englishisation is widely used for content courses taught with the conduct of English in HE (Kirkpatrick, 2011: p.34). With the widespread praxis of English as a lingua franca and an international language for academia, research and science (Ammon, 2006; Coleman, 2006), non-Anglophone HE institutions have progressively adopted teaching instruction programs offered with the medium of English (Sahan et al., 2021: p.10). In just eight years (from 2009 to 2017), there has been a fifty-fold growth in the quantity of EMI bachelor’s degree programs (from 55 to 2900) according to the latest statistics conducted in Europe (Sandström & Neghina, 2017: p.5). The aim behind EMI, consequently, is to

prepare domestic students in line with multifaceted full academic, social and emotional qualification for the global world with alumni job prospects and to improve the internationality of the local universities by sharpening the cross-border profiles of the universities and fostering their relations with other international partners (Wächter & Maiworm, 2015: p.18). To put it differently, EMI is regarded as a major vein to boost the prestige of local universities at an international level in various countries and regions (Doiz et al., 2013: p.250; Hu, 2007: p.105).

As a term, EMI is described by Macaro et al. (2018) in their highly cited definition 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” (p.9). In other words, academic subjects such as engineering, business, accounting, finance are taught domestic under-graduate, graduate or post-graduate degrees’ students through the conduct of English instead of their home languages in HE institutions (Sahan et al., 2021: p.2). The emphasis in EMI definition by Macaro et al. (2018) is given on non-Anglophone countries where people have mostly different L1 background to make a discrepancy between them and officially English-speaking countries like Canada, Australia, and former colonies in Africa or Asia. From various definitions of EMI (Aguilar, 2017, p. 726; Dearden, 2015, p. 2; Hellekjaer, 2010, p. 11; Macaro et al., 2018, p. 37; Paulsrud, 2014, p. 36), it is easy to encapsulate EMI (Table 1 below presents recently and mostly cited significative definition of EMI) and infer that in EMI contexts,

1. Most students speak English as their second language (L2),
2. English is a medium for educational objectives,
3. There is not a direct focus on English language proficiency, the main function of EMI is to provide content learning as a tool.
4. Language development through EMI is not given an overt emphasis but may be implied as an underlying profit implicitly (Pecorari, & Malmström, 2018: p.499).

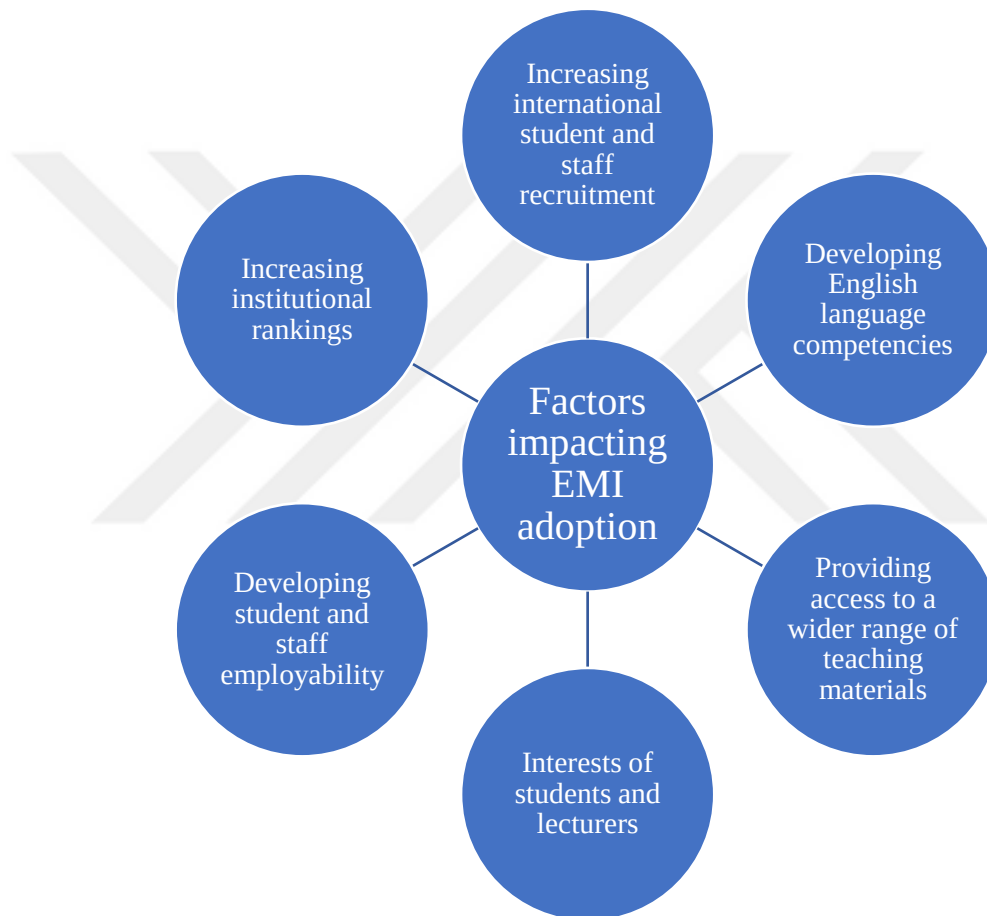
Table 1. *Definitions of EMI (Pecorari, & Malmström, 2018: p.499)*

Source	Definition
Macaro et al., 2018, p. 37	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.
Aguilar, 2017, p. 726	EMI implies that content—which is given in English—is the priority. Some incidental language learning is expected due to exposure but without any specific language learning goals. English (language) learning is not assessed. Scarce or no collaboration between content and English specialists. There may be little accommodation in terms of methodology, only to guarantee comprehension and understanding of content.
Dearden, 2015, p. 2	The use of the English language to teach academic subjects in countries or jurisdictions where the first language (L1) of the majority of the population is not English.
Paulsrud, 2014, p. 36	Instruction through the medium of English, when the goal or the designation has not been specifically to integrate language and content, but only to teach the non-language content through the medium of English.
Hellekjaer, 2010, p. 11	English-medium instruction is when non-language courses in for instance medicine, physics, or political science are taught in English, to students for whom it is a foreign language. As often as not, it is also taught by a lecturer who does not have English as a first language (L1).

The main aspirations for HE institutions in their universities' internalization and their transition to EMI are (a) to develop their international rankings, (b) to internalize their academia and (c) to ensure a qualified education in their institutions, (d) to give a path to specialized knowledge in diverse fields, so (e) to draw students and scholars from international contexts to their institutions (Cameron & Galloway, 2019: p. 150; Macaro et al., 2018: p.37). To elucidate in other words, the aspects behind the adoption of EMI can be affected by distinct elements in micro (individual), meso (institutions) and macro (nations) levels (Hultgren et al., 2015: p.6). Curle et al. (2020) listed the factors behind the adoption of EMI in HE as “increasing international student revenue, increasing institutional rankings, developing students' English language competencies, increasing international student and staff recruitment, developing students' and staff' employability,

providing access to a wide range of teaching materials and addressing to the interests of students and lecturers” (p.21). Figure 2 below listed these factors.

Figure 2. *Factors impacting EMI adoption in HE (Curle et al., 2020: p.21)*



2.2.2. EMI Expansion in the World and the Driving Forces behind it

There are not only ethical and pedagogical but also pragmatic and commercial perceived benefits in perceiving EMI in HE sectors throughout the world. Due to the serious expansion in HE sectors adopting EMI in both Europe and Asia, EMI has turned out to be “an unstoppable train” (Macaro, 2015, p. 7). The implementation of EMI is often decided by top-down policies in different parts of the world with the effects of

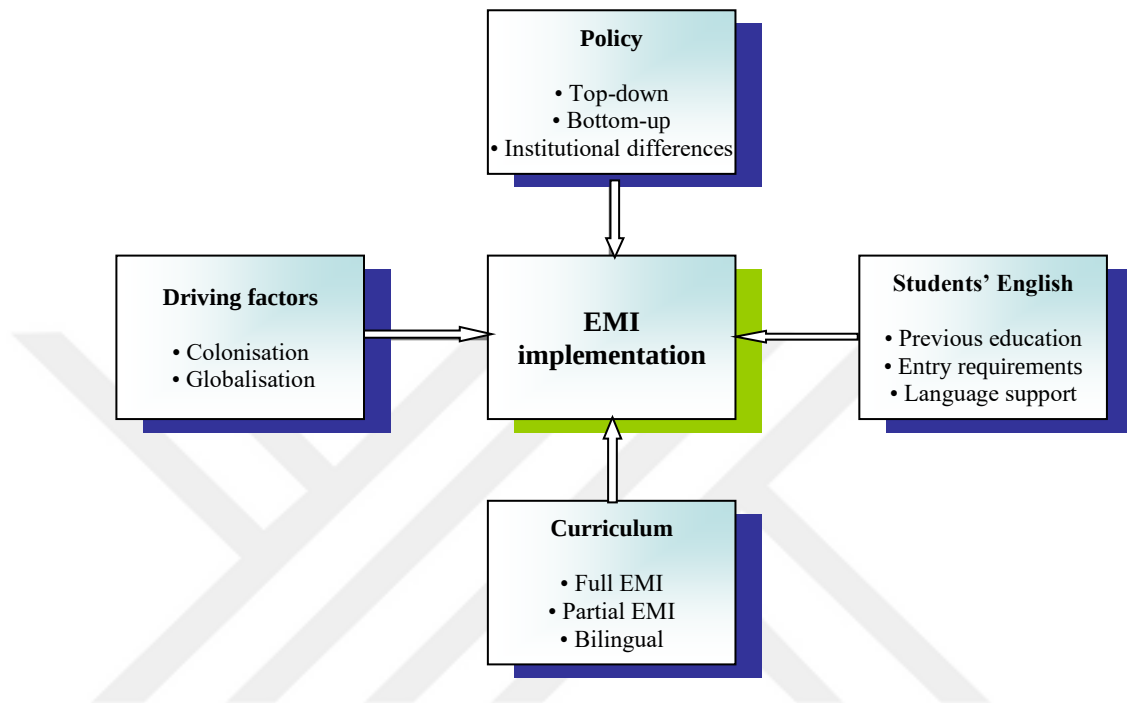
internalization, globalization and marketization in HE institutions (Kirkpatrick, 2017). Diverse implementation and variations of EMI can be seen across the world (Curle et al., 2020) as there is “no one size fits at all” approach in perceiving EMI and further research is required to fully understand the historical background of the nations and the context it is used in, the needs and the perceptions of all the stakeholders and, as a result, to provide efficacious employment of EMI (Galloway et al., 2017, p.24). In this very part, historical background of EMI and its driving forces in different parts of the world will be touched upon.

Costa and Coleman (2013) associate the expansion in the implementation of EMI with these points:

1. Rapid advances in scientific knowledge and consequently in course content,
2. The increasing proportion of knowledge sources such as books, papers and theses which, for economic, social and prestige reasons, are available only in English,
3. The accelerating pattern of academic staff and student mobility, and
4. The near-necessity of English proficiency for graduate employability. (pp. 3-4)

In different domestic contexts across the world, there are four main agents behind the administration of EMI; these are policies, students’ English, curriculum and driving factors (Curle et al., 2020: p. 25). Diverse characteristics and specificities of the geographical regions such as their having official monolingualism or multilingualism policies, their being a continent or a country, their status as being a public or private institution, their phase of internationalism or globalization, much specifically the disciplines applied or the societal state of English determine the implementation of EMI in different contexts (Dafouz, & Ute, 2020: p. 11). These four factors are illustrated in Figure 3 below.

Figure 3. *Factors influencing EMI implementation (Curle et al., 2020: p.25)*



In such an unprecedented proliferation of EMI in the global scene, there is a certain driving factor behind the introduction of EMI and this factor may be affected by the results of colonization, globalization or internalization (Curle et al., 2020: p. 26). Once colonial countries such as Malesia, Hong Kong, Singapore and especially South Africa countries were affected by imperialistic powers and English gained a historical and political legacy as a colonial language among complex multilingual societies (Ali, 2013: p.77; Bolton, & Botha, 2017: p.140; Evans, 2018: p.1017; Probyn, 2001: p.249). However, EMI expansion in HE in some countries such as Japan or China has been affected by globalization because of underlying financial imperatives (Aizawa & Rose, 2019: p. 1127; Galloway et al., 2020: p.400). EMI especially in HE in such countries is used as a potential tool to internalize their tertiary education with the aim of retaining more skillful citizen resources with a high English proficiency and developing their prosperity and economy (Galloway et al., 2020: p.400). In Europe, it is the internalization process that improve EMI in HE with ERASMUS and Bologna Process (Macaro, 2018: p.50). Internalization goal in Europe set a mutual standard of student admission and recognition in terms of their

qualifications among European countries via English as it is the world's foremost lingua franca and this promoted the flow of student mobility throughout Europe (Costa & Coleman, 2013: p. 4).

Another oft-reported factor (Macaro et al., 2018) influencing the implementation of EMI is the policymaking of the nations. With the effects of politics and national aspirations, some nations especially in Asia use top-down and ad hoc policies when implementing EMI in HE sectors by disregarding the stakeholders' needs, options, motivations and attitudes (Galloway et al., 2017: p. 24). The compulsory EMI policy in HE causes reluctance and failure in studying or teaching through EMI due to their insufficient language proficiencies and competencies or expectancies from the ends of their educational activities (Hu et al., 2014: p. 32). Though they are in favor of supporting the internalization process and use of EMI in tertiary education and they get many benefits from EMI implementation by developing their language proficiency and language command, what attitudes they hold toward EMI isn't taken into consideration and so, participants lack the autonomy in selecting and using EMI procedures and meet with some challenges arising from the diffusion of obligatory EMI policy. When the drive for the implementation of EMI comes from top-down without any 'consultation with the key stakeholders', there has always been a crucial gap between the macro-policy level in the shade of avid political and economic goals and micro policy level in which teachers and students endeavor to implement EMI and benefit from it as policy actors in the scene (Dearden, 2014: p.2; Hamid et al., 2013: p.6).

The state of Europe *albeit* presents a bottom-up case in the practice of EMI as European countries are a hub for the international students alongside the top-down language policies and it requires EMI settings. The high flow of exchange international students calls for a mutual recognition in terms of language being used. ELF in Europe necessitates the implementation of EMI to set a standard among the multilingual nature of HE (Curle et al., 2020: p. 26).

EMI implementation may vary even within a country context. Whether being a top-notch university or a local one determines the presences of academic disciplines offered in EMI. Prestigious HE institutions afford EMI to catch up and compete with its international counterparts in international academic arena and to attract international students with different L1 backgrounds to their institutions. However, the aim of local universities' adopting EMI disciplines is to attract national students and to promote its preferability in the country. Last but not least, EMI programmes in private HE institutions are more widespread than state universities as private universities use it as a strategy for promoting their institutes and appealing students (Costa & Coleman, 2013: p. 10).

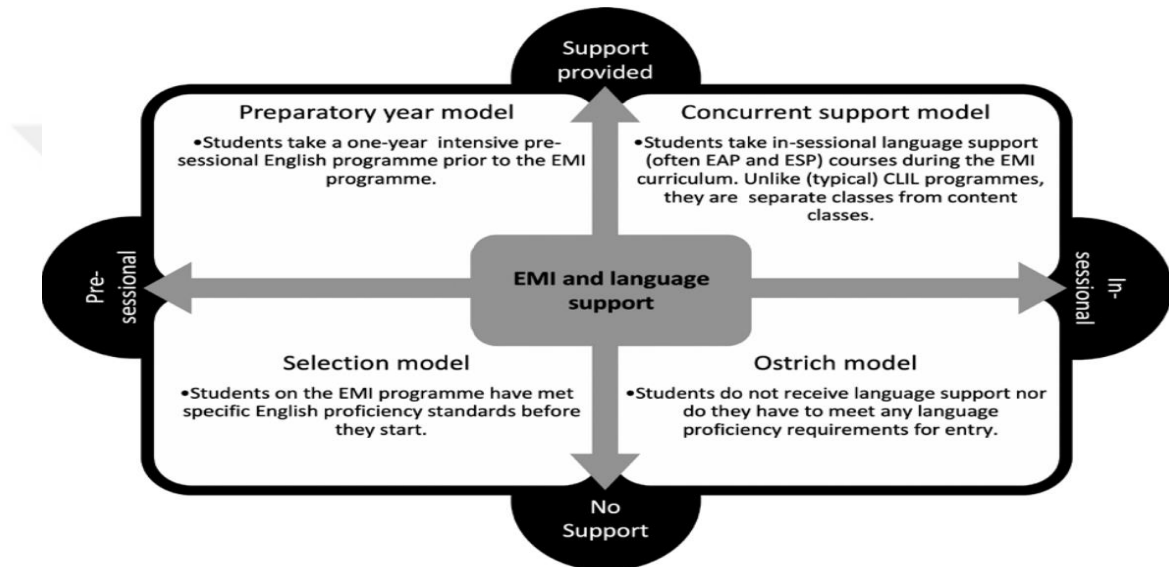
Along with nations' language policy, another important agency that determines the use of EMI in HE is students' English background and their English level. When enrolling an EMI programme in HE, students' English proficiency and their English language background and as a result, their readiness for EMI in their academic discipline may change from student to student in various contexts. Some students may have EMI classes in secondary schools or they may have good command of English language. This situation is mostly the case in post-colonial countries or immersion contexts where the students mostly have EMI courses during primary, secondary or high school years. So, they experience fewer difficulties when compared to their counterparts who most probably have insufficient English proficiency or have no experience of EMI before HE. Students may need an orientation and a preparation process for EMI programmes after admission. On the other hand, HE institutions also have some requirements and rules for the student admission or for their language support. These requirements for the entrance to the EMI and language support to reach a sufficient command of English proficiency before the admission to the related departments differentiate in various EMI contexts (Curle et al., 2020: p. 27). While some departments see it as a must to have a certificate for a certain level of English, others do not. The proportion and sort of support also vary according to the contexts.

Macaro (2018, as cited in Curle et al., 2020; p.38; Tsou & Kao, 2017: p. 4) classified these language support models into four models as namely preparatory year

model, concurrent (institutional) support model, selection (pre-institutional) support and ostrich (bury your head into the sand) model. In preparatory year model, HE institutions make one-year intensive English preparatory year programme a prerequisite for the nominee students with a low level of English to take and complete it successfully with the intention of having the students reach a certain level of English for their being able to operate through EMI in related programmes (Dearden, 2014: p.15). It is only after the candidates successfully receive a good grade from the end of the year English test, they can commence the related chosen academic field. This model is mostly common in Turkey, the Netherlands, the Kingdom of Saudi Arabia and the Arab Gulf (Curle et al., 2020: p.28; Ege, 2020: p. 17; Macaro, 2018: p. 232). In concurrent support (institutional support) model, language support is united with the EMI curriculum through English for Academic Purposes (EAP) and English for Specific Purposes (ESP) courses, in particular. Thus, students take their EMI courses alongside English language support under such names as EAP or ESP. Institutional support courses are taken separately from their EMI content courses. Pre-institutional support model is the only model that sets a prerequisite for the students' English language entry. Students are admitted to the related EMI programme only after they certificate the required level of English. They submit their English proficiency test scores to the HE institutions and their placement to EMI programme is done only if they meet the specific English language threshold and criteria. The type and score of tests required differ according to universities and departments. Generally, it is either IELTS (International English Language Testing System), Common European Framework of Reference (CEFR) or Test of English as a Foreign Language (TOEFL) certificate with the scores ranging from 5 to 7, from B1 to C1 or from 78 to 90, respectively (Galloway et al., 2017: p.21; Rose et al., 2019: p. 4). As for ostrich model, understandably, “managers and teachers simply bury their heads in the sand and pretend that [language-related] problems ... do not exist or will go away if they are ignored” (Macaro, 2018, p. 233). In this model, EMI departments do not demand any linguistic entry criteria or provide any language support for the students as they assume all the students demonstrate themselves as sufficiently efficient users of the language with an adequate level of English. All in all, what deserves some thought and attention here is that

teachers as content and language specialists do not receive any sort of support in none of these models as opposed to students. Figure 4 below show the EMI supports model.

Figure 4. *Approaches to language support in EMI (adapted from Macaro, 2018, as cited in Galloway, & Rose, 2021: p.5.)*



Beside the language support models, the amount of English provided in the curriculum for teaching and learning is the fourth agent behind the implementation of EMI. EMI is not always presented in purely English in some contexts. The definitions and approaches in EMI may change in different programmes. To which extent the language and content is integrated with English in the curriculum is diverse in different institutions. Exemplarily, bilingual education is followed in Chinese HE and named as English-Chinese bilingual education (Rose et al., 2020). In such type of EMI programmes, the coursebooks are presented in English, the default medium of instruction is generally the native language of this nation though. The differentiation in other contexts is the amount of English being used in full or partial EMI models. In full EMI model, 100% percent of all content is provided in EMI while 30% percent of the curriculum is presented through EMI and the left curriculum is given in their home languages in partial EMI (Karakaş, 2019: p. 212; Sahan, 2020: p.20). Macaro (2018) calls partial modal as ‘Multilingual

Model' in which some courses are offered in English and the others are given through students' first languages (L1). In many countries such as China (Wu, 2006), Japan (Macaro et al., 2018), Hong Kong (Pun & Macaro, 2019), Sweden (Malmström, Pecorari, & Gustafsson, 2016) and Turkey (Soruç et al., 2018), this multilingual model known as partial has been in use.

2.2.3. English Medium Instruction and Other Related Terms

The position and the key role of English is changing at a rapid speed worldwide. English is no more just an object to teach or study as a foreign language in non-Anglophone countries at different educational levels, it is nowadays the language of instruction for academic subjects such as mathematics, science or medicine. Teaching a certain subject matter through a language which is other than the students' mother tongue has been defined as “foreign or second language medium instruction”, “content-based instruction (CBI hereafter)” or “content and language-integrated instruction (CLIL hereafter)” (Costa, & Coleman, 2013: p. 5). The discrepancies among these terms are essentially contextual: Europe is home to CLIL, Canada is known for Immersion and Hong Kong is a hub for EMI. These not only differ in terms of their context, but also their implementation amount of English, their balance with educational and pedagogical aims and the content instruction. (Lo & Maraco, 2015: p.240). For the definition of EMI, researchers have used a plethora of diverse terminologies since post-2000s till now (Macaro, 2018: p.15). In order to set the construct and the phenomenon to be used in clearly, it is crucial to reveal other practices' divergences from EMI and similarities to EMI. With this aim, the conceptual separation of these educational practices will be done under this very heading as a primary step of this research to set the boundaries, characteristics and disparities of related terms' instructional layout.

Arose in the 1850s, CBI or content-based language teaching (CBLT hereafter) has its roots in the United States with the amalgamation of Canadian French emersion programme. In CBI as a learning approach, the aim is to improve the students' English

language proficiency incidentally by engaging them with a certain context which is relevant to their content of the target theme (Brinton et al., 2003, p. 2). The content, in CBI is just a medium so as to improve the learners' second language abilities and the general evaluation is made upon not on the content of the related knowledge, but on the students' linguistic achievements (Brown and Bradford, 2017: p.331). In EMI, however, the evaluation is based on the subject matter per se and language is just a medium of instruction to convey the content knowledge. The instructors are mostly native and they have the mastery both on the subject matter content and an additional language which is other than their native tongue (Cenoz, 2015: p. 21). In EMI, teachers are either native or nonnative and they have proficiency in the subject matter, but mostly proficient in the target language just to the needed extent. While EMI is mostly common in HE, CBI is used mostly in primary and secondary education (Soruç and Griffiths, 2017: p.39). Table 2 below indicates the differences among EMI, CLIL and CBI.

Table 2. *Differing Images of CBI, CLIL, and EMI in the Literature (Adapted from Brown, & Bradford, 2017: p. 329)*

EMI	CLIL	CBI
"The central focus is on students' content mastery and no language aims are specified" (Unterberger & Wilhelmer, 2011, p. 96).	"Diverse methodologies are used which lead to dual-focused education where attention is given to both topic and language" (Marsh, 2008, p. 1986).	"an integrated approach to language instruction, drawing topics, text, and tasks from content or subject matter classes, but focusing on cognitive, academic language skills" (Crandall & Tucker, 1990, p. 83)
"focuses on content learning only" (Smit & Dafouz, 2012, p. 4)	"a dual-focused educational approach . . . a fusion" of both subject content and language learning" (Coyle, Hood, & Marsh, 2010, p. 6)	"an effective way to engage students with content sources, while at the same time improving language abilities" (Mesureur, 2012, p. 71)
"an umbrella term for academic subjects taught through English, one making no direct reference to the aim of improving students' English" (Dearden & Macaro, 2016, p. 456)	"Parts of the curriculum are delivered through a foreign language. Learners acquire the target language naturalistically" (Coleman, 2006, p. 4).	"concurrent teaching of academic subject matter and second language skills" (Brinton, Snow, & Wesche, 2003, p. 2)
"English-taught degree programs . . . predominately aim at the acquisition of subject knowledge" (Unterberger, 2014, p. 37).	"Learners are engaged in a joint learning practice of subject matter and foreign language" (Smit & Dafouz, 2012, p. 1).	"aims to develop both the students' language and their content knowledge" (Butler, 2005, p. 229)
"the use of English to teach academic subjects in countries or jurisdictions where the first language (L1) of the majority of the population is not English" (Dearden, 2015, p. 4)		"Many language programs endorse [CBI] but only use course content as a vehicle for helping students master language" (Stoller, 2002a, p. 112).

Although it has many older examples, CBI is mostly associated with Canadian immersion programmes as the best-known examples (Cenoz, 2015: p.10). As a conclusion of migratory actions in 1970s, variety in languages necessitated the requirement to use bilingual education as there are English and French speaking two communities in Canada (Murphy, 2014: p. 270). Canada started to use immersion programme to improve the integration between the two nations and to stimulate the bilingualism. As total and dual, two kinds of immersion programmes were used in Canada in those years. Total immersion programme is intended for English speaking students who constitute the majority in the classroom. In this case, at least fifty percent of the academic subject is presented to the English-speaking students through French by the instructors (Geneese, & Lindholm-Leary, 2008: p. 7). Teachers present the target subject through French at a comprehensible level for the students initially by using a simplified language and nonverbal communication strategies. Then, teachers expand their target language instruction by using appropriate and comprehensible utterances (ibid.) Gradually, students learn French inductively by exposing to French instruction at all times and reading French academic texts. The expected outcome from Canadian French immersion programme for the students to have an advanced proficiency in French in four skills, mother tongue accomplishment pertinent with students' ages and academic achievement pertinent with their grade and intercultural comprehension (Geneese, & Lindholm-Leary, 2008: p. 8). Dual immersion programme, on the other hand, is intended for the minority students who speaks another language other than English at their home and it has two types: one of them is developmental bilingual education (DBE) and the other one is two-way immersion (TWI) (Lindholm-Leary & Geneese, 2010): p. 327). DBE is intended for just the students

who are English language learners whereas TWI comprises both English language learners and English native speakers as students (ibid.). Minority students are admitted to the school as English language learners and from kindergarten till the end of the secondary school, they have lessons for their literacy and academic improvement both in their first language and in English, so this provides an integrated language and content comprehension for the minority students who are mostly from poor socioeconomic backgrounds and who display academic underachievement at school (Geneese, & Lindholm-Leary, 2008: p. 14). The rationale behind dual immersion is to improve minority students' academically and linguistically by providing them with early academic training in partial or as whole through their mother tongue. This way eases their second language acquisition which is English and their academic improvement. Both DBE and TWI in dual immersion aims to have both English native students and English language learners acquire full proficiency in every domain of English together with its cross-cultural enrichment and high standards of academic progress (Geneese et al., 2005: p. 372).

Another most confused term with EMI, CLIL is used as an educational approach with a dual focus for both content subject and language teaching by presenting the content through the medium of the target language (Lasagabaster and Sierra, 2010: p. 368). it is, unlikely CBI (CBLT), immersion programmes, used for the learners who already have literacy in their L1 (Dalton-Puffer and Smit, 2013: p. 546). One of the most comprehensive definitions of CLIL by Brown and Bradford (2017) is as follows:

“CLIL is an approach to education that integrates language and content learning; planning for, fostering, and assessing both, though the focus may shift from one to the other. CLIL is also a method of teaching which draws heavily on constructivist and socio-cultural notions of learning to provide students with opportunities for meaningful input and output in L2 and meaningful engagement with content.” (p.331)

As can be understood from the statement, CLIL has both content and language acquisition aims finally on an equal basis which differentiates it from EMI as the main goal in EMI to teach the content through English and content accomplishment is essential in this respect. Having mastery in an additional language is not a requisite in the target outcome of EMI. English learning is an incidental outcome and an additional profit in EMI. Moreover, CLIL is mostly used in secondary school whereas EMI is commonly in progress in universities (Macaro et al., 2019: p.4). The following description specifies the distinction between EMI and CLIL in a neat way:

“CLIL is an approach to bilingual education in which both curriculum content — such as science or geography—and English are taught together. It differs from simple English-medium education in that the learner is not necessarily expected to have the English proficiency required to cope with the subject before beginning study” (Graddol, 2006: p.86).

It is theorized (Mehisto, Marsh & Frigols, 2014; Pérez Cañado, 2016) that the target language can be best learnt when the main focus is not on the language itself rather than it is on the delivered contents through the subject matters such as Biology, Chemistry, Arts and so on. Thus, CLIL involves a subject content-driven syllabus, not a language itself-driven syllabus. In the same vein, the language curriculum takes its curriculum from the related subject matter in CLIL (Merino & Lasagabaster 2018: p.3). Regarding that English is the language of science and academia and it is the compulsory language in most schools' curriculum, uniting both the content and the language accomplishments in a program with a dual focus is the reasonable justification of CLIL (Romanowski, 2022: p.238). The aim of CLIL is to prepare young people for the multilingual and multicultural expectations of culturally, linguistically and ethnically diversified world in which mobility is spreading out (Romanowski, 2022: p.237). By combining both content and language accomplishment goals, CLIL provides students with naturalistic language learning through language use in subject learning which distinguish it from foreign or second language learning (Lo, & Macaro, 2015: p. 240).

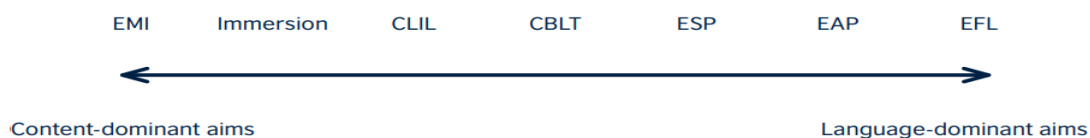
In this very part, not to mention about ESP (English for Specific Purposes) and EAP (English for Academic Purposes) will be a shortcoming for a higher awareness of diverse English settings and EMI. ESP is just a goal-oriented training used in professional settings in accordance with the chosen discipline such as engineering, business, medicine or academy. ESP encloses the related field's genres, discourses and particular language proficiency to improve the related discipline's language skills rather general language learning (Anthony, 2015: p. 5). The difference between ESP and EMI, in this respect, is

that ESP improves the learner's specific language skills in a particular discipline in English while EMI enhances the related discipline through English (Dearden, 2018: p. 7).

As well as being a lingua franca throughout the world, English is also an academic lingua franca. Students consider English as an indispensable part of their academic development as English became the language of academy and science. This status of English necessitates EAP as a selected branch in ESP (Canbay, 2006: p. 16) in order to improve the learners' formal academic English context, especially their academic English reading and speaking skills (Björkman, 2011: p. 82). When compared with EMI, ESP improves primarily students' academic speaking and writing abilities in the selected domain. However, EMI enhances basically their content knowledge in the related discipline through English and provides English improvement spontaneously at the same time (Kırkgöz, & Dikilitaş, 2018: p. 293).

In the shade of all this information, if content-dominant and language dominant objectives in both teaching and learning are regarded as a continuum as in *Figure 6* below, EMI stands at end of left end as the students' goal is to reach the content-dominant goals. While CBI (CBLT) and CLIL students' aims stand equally strong or almost equally strong respectively in terms of enhancing their English proficiency to learn the target content (Macaro et al., 2019: p.9). As getting closer to the right end, language dominancy can be easily seen in students' English learning aims in EFL at the right end, approximately in EAP and almost in ESP (as illustrated in *Figure 5* below).

Figure 5. *A continuum of teaching and learning objectives in English classrooms*
(Macaro et al., 2019: p.9)



2.2.4. A brief historical background of EMI in Turkey

In Turkish context, English renders “the instrumental function of being the most studied foreign language and the most popular medium of education after Turkish” (Doğançay-Aktuna, 1998, p. 37). So, a closer look its prevalence in Turkey will be a decent act for this research.

Like many other non-English-speaking countries, Turkish language policy has also been affected by the global status of English as it is the lingua franca in technology, medicine, science, business and education throughout the world. With its being an expanding circle country (Kachru, 1992), its geopolitical strategic position on the map, being located on the nearest crossroads where Europe and Asia come closest to each other, Turkey also has undergone the influence of English since its very early history as a result of globalization and internalization (Kırkgöz, 2014: p.4). Though Turkey is a non-colony country in the expanding circle and a monolingual country with its only official language-

Turkish, where English is taught as a foreign language, having education through English-taught programmes has a well-rooted, long history in Turkey. Teaching EFL can be initially traced back to Tanzimat Period, which can be considered as a westernization movement in all sectors-especially in education-between 1839-1876 years (Kırkgöz, 2007: p. 217). Thenceforth, Turkey has given priority to teaching EFL in educational sectors with the effect of competitiveness, internalization and globalization so as to keep up with the international trade and technological advancement by gaining power in the international arena (Çankaya, 2017: p.831; Kiliçkaya, 2006: p. 1).

Karakaş and Bayyurt (2019: p. 96) states that EMI in Turkish context can be divided in two phases as the first and new generation EMI institutions. The first generation symbolizes the EMI institutions before the 21st century. The first fruit of the serious discussions and the first attempt of EMI in Turkish context is the foundation of Robert College that is Turkish first foundational secondary school giving English-taught courses and it was established by the results of American missionary attempts and enterprise in 1863 corresponding Tanzimat Period in İstanbul (Kırkgöz, 2005: p.160). This college offered an American type of education up to underlaying the unification in 1971 under the name of Bosphorus University which offers officially 100% English-medium instruction as a state university (Kırkgöz, 2007: p. 217). Following the foundation of Turkish Republic in 1923, Turkey desired to improve its relations with the USA and the European countries under the name of modernization movements as a consequence of American military and economic influential strength (Başibek et al., 2014: p. 1820). As a results of these acts, English gained more popularity and prominence, and it competed with and

outdid French language, once prevailed foreign language in the arena of Turkish art, diplomacy and education (Kırkgöz, 2007: p. 218).

Prior to its being widespread in HE, subject teaching through English was common in state Anatolian high schools which took its origins from Maarif Schools in Turkey's six cities in 1950s. Providing initially a one-year intensive foreign language preparatory programme upon entry to the school, Anatolian High Schools used to offer English-taught courses in which students exposed to English during their mathematics or science lessons in the following years of their education. However, this implementation was given up and foreign language preparatory year was removed in 2006 and the courses was started to be given in Turkish instead of English with the reason that there was a lack of qualified subject teacher who could deliver their content in English at ease and it was hard for most of the students to grab both the content of the related course and the command of English at the same time (Kırkgöz, 2005: p.15; Selvi, 2014: p.137). Presently, the number of English language classes differ in primary, secondary and high school institutions according to either the grade of the students or the schools' being a foundation or a state one in Turkey. There are still some high schools such as Kadıköy Anatolian High School or Vefa High School which provides foreign language preparatory year.

From the very early beginning of Turkish Republic Declaration in 1923, Turkish leader Mustafa Kemal ATATÜRK made a lot of big reformulations in all fields and education was no exception from these (Selvi, 2014: p. 138). With the aim of

Westernization, a lot of scholars and students were sent to European countries from diverse fields, which had these scholars and students be familiar with the languages of these countries as well (Alptekin & Tatar, 2011). As a consequence of this westernization efforts, globalization and internalization, Turkey adopted EMI with its foreign language policy in its higher education institutions by founding first English medium university, The Middle East Technical University (METU) in 1956 in Ankara (Kırkgöz, 2014: p.4). As it can be understood from the name of METU, this university aims to reach both local and international students by offering EMI programmes according to König (1990 as cited in Karakaş & Bayyurt, 2019: p. 96). Following EMI boost, Bosphorus University (a continuum of once Robert College) was established as a second EMI providing university in Istanbul in 1971 (Selvi, 2014: p. 138). These state universities were like a blueprint for initiating EMI movement in foundational universities. Bilkent University, founded in Ankara in 1984, was Turkey's first foundation higher education institution providing full EMI in all programmes (Karakaş, 2016: p. 5). Foreign language teaching was established by The Higher Education Act of 1984 (Higher Education Council [Yüksek Öğretim Kurumu, YOK], 1984), this can be seen as the starting point of policy regulations on English language teaching on a macro level. Upon the establishment of Higher Education Council, the number of state and especially foundational tertiary education institutions like Sabancı and Koç University offering EMI degree programmes got an increase throughout Turkey in 1990s (O'Dwyer and Atlı, 2018: p. 295). Since 1984, moreover, these HE institutions with EMI provided foreign language preparatory class for the students who had insufficient command of English according to the level specified by the university before they started their major (Kırkgöz, 2007: p.219). With the 1997

Education Reform, Turkish educational system underwent radical changes to reform Turkish educational system and ELT practices. As a consequence of these reforms, foundational HE institutions were entitled to take initiatives to open EMI programmes and this raised the number of EMI majors especially in private sector in the ensuing years (Kırkgöz, 2007: p.220; Saricoban, 2012: p. 2643).

It is not until the early 2000s, however, these universities gained their international reputation. It is in the second generation beginning with the Bologna Process acceptance by Turkey in 2001, the internationality, the popularity and the number of the universities went up at a high speed (British Council, 2015: p.43; Westerheijden et al., 2010: p.94).

It is in the second era, Bologna Process brought Turkish universities providing EMI more student and teacher mobility internationally. This exponential growth in EMI provision amounted since 2001. Several of these universities offer mostly degree programmes taught partially in English in such departments as international relations, engineering, business administration or computer engineering (Başibek et al., 2014: p. 1824). According to a report on EMI in Turkish HE by (Arık, & Arık, 2014), 20% of all tertiary education institutions provides programmes through a contact language of choice, which is mostly opted for partial EMI. Private sector in HE spearheads EMI degree programmes' pervasion at a skyrocketing speed when compared to the state HE institutions (Dearden & Akıncıoğlu, 2016: p.3). Başibek et al. (2014: p.1820) states that after the boom in EMI programmes, EMI has been “generally considered as a tool which

differentiates one university from the other”.

In 2018, there were 208 HE institutions ((130 state and 78 foundation universities) in a report by the Student Selection and Placement Centre (Öğrenci Seçme ve Yerleştirme Merkezi [ÖSYM], 2018) but the exact number of both state and foundational universities has not been known due to the inadequacy of exponential research in the field (Bayyurt and Karakaş, 2016: p: 96-97). Taking this as a timely call for in-depth analysis, Yüksel, Altay and Curle (2022) conducted a document analysis of Turkish EMI HE institutions prepared by the Council of Higher Education between 1999 and 2019 (p.109). They (2022) categorized EMI programmes in universities and analyzed them at three stages as ‘university, division and academic subject’ by basing this categorization on ‘full’ and ‘partial’ EMI to present a more detailed portray for Turkish EMI programmes (p.113). ‘Soft’ EMI programmes like English language teaching, English translation and English language and literature were left out from the file as well (Yüksel et al., 2022, p.115). University level implies its being a state or a foundation university. As for the division, they (2022) took “the framework for Divisions and Departments as adopted by the University of Oxford (ODDF, University of Oxford, 2020)” in classifying every single academic major under four distinct categories which are, respectively, “Social Sciences, Medical Sciences, Humanities and Mathematical, Physical and Life Sciences (MPLS)” (p.115). The related framework with full academic majors is presented in *Appendix*. For the last level of the academic subjects in both full and partial EMI, the trendy academic subjects between the year 1999-2019 are supplied in the research of Yüksel, Altay and Curle (2022, p.115). According to the in-depth research, in 1999 year of Turkey, there

were 231 full and 114 partial EMI HE programs (345 in total), the number of full EMI augmented to the 1101 and partial EMI programs to 351 (1452 in total) by 2019 (Yuksel et al., 2022, p.116-117). At the third level of analysis in terms of academic subject taught in EMI, the ten subjects with the highest student enrollment number in both full and partial EMI in 1999 and 2019 are presented in order as two tables below in Table 3 and Table 4 (Yuksel et al., 2022, p.117-119).

When the academic divisions are compared, it can be seen easily that there has been a substantial growth between 1999 and 2019. MLPS and Social Science took the first place in both years.

Table 3. *The top ten academic disciplines with the largest number of students in full and partial EMI programs in 1999 (Yuksel et al., 2022, p.117)*

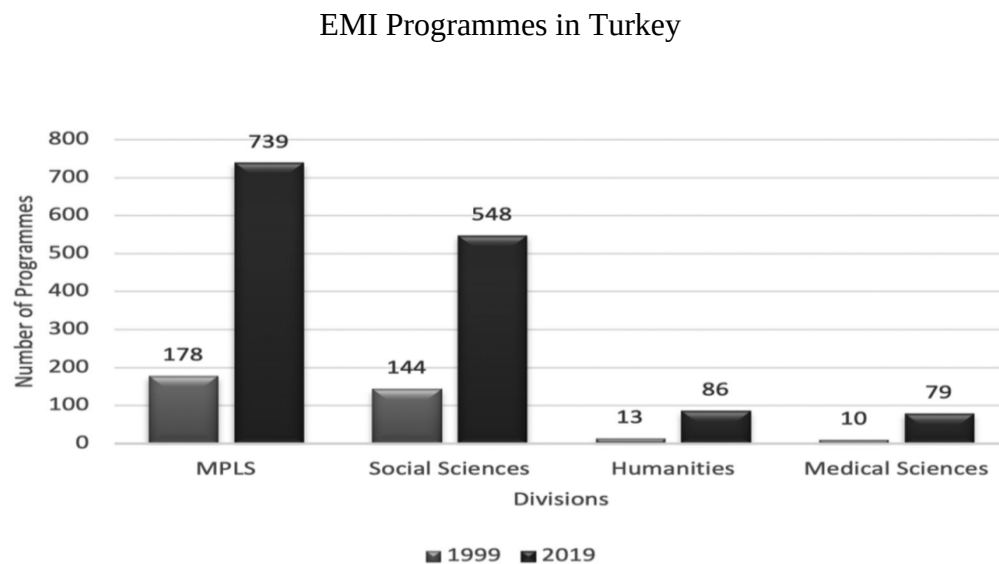
Academic programme	Number of full EMI programmes	Number of partial EMI programmes	Number of total EMI programmes
Business Administration	20	2	22
Electrics and Electronics Engineering	12	7	19
International Relations	16	2	18
Computer Engineering	14	4	18
Economics	14	2	16
Mathematics	13	2	15
Physics	9	2	11
Chemistry	8	3	11
Industrial Engineering	7	3	10
Chemical Engineering	5	5	10

Table 4. *The top ten academic disciplines with the largest number of students in full and partial EMI programs in 2019 (Yuksel et al., 2022, p.119)*

Academic programme	Number of full EMI programmes	Number of partial EMI programmes	Number of total EMI programmes
International Relations	63	17	80
Electrics and Electronics Engineering	52	21	73
Computer Engineering	52	15	67
Business Administration	56	11	67
Mechanical Engineering	39	20	59
Economics	44	11	55
Civil Engineering	42	12	54
Industrial Engineering	41	11	51
Architecture	36	10	46
Psychology	32	12	44

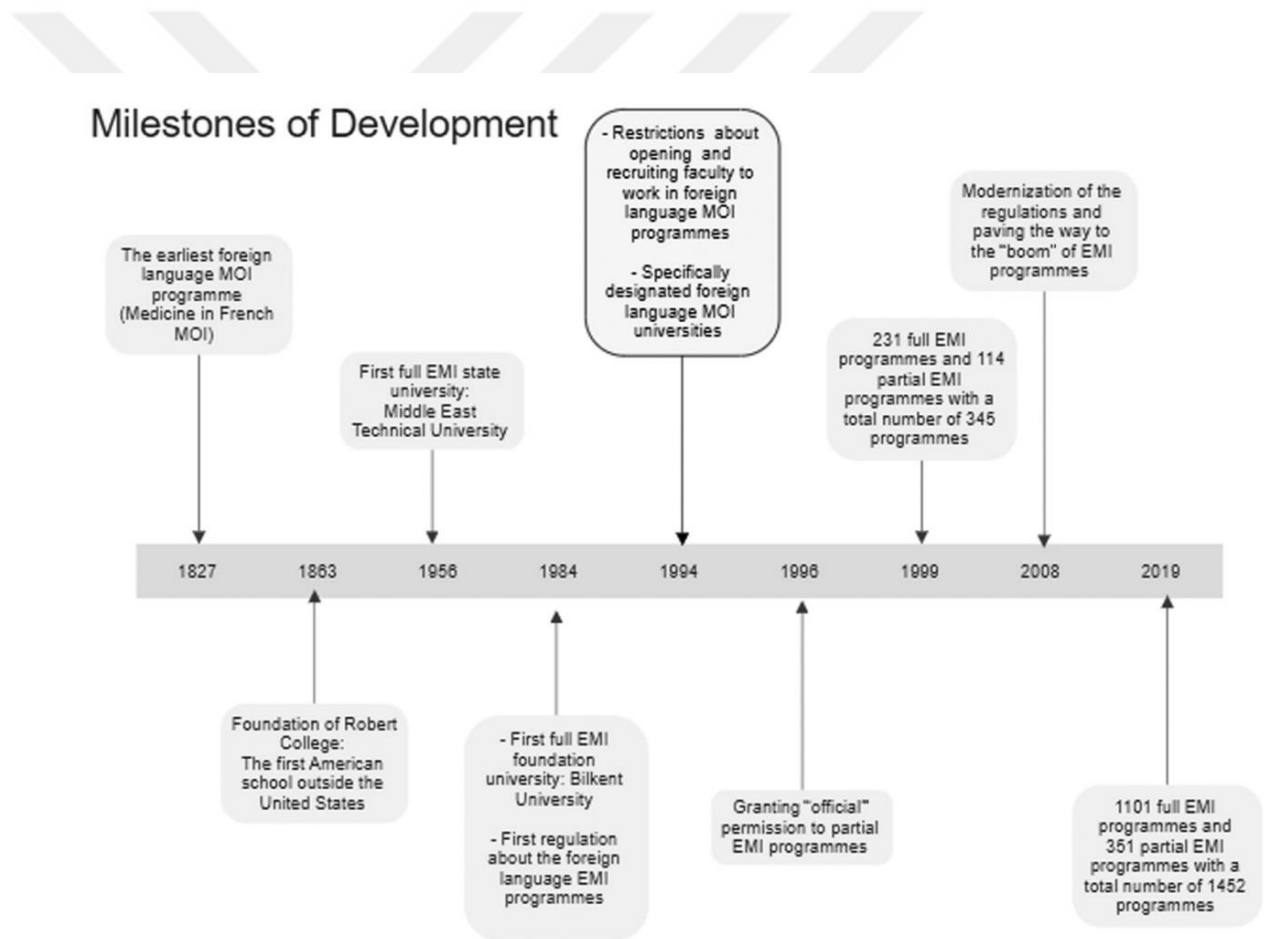
The total picture of the changing numbers in the academic divisions is presented in Figure 6 below (Yuksel et al., 2022, p.121).

Figure 6. *Variations in the number of majors across distinct divisions. (Yuksel et al., 2022, p.121).*



All the milestones in the historical developments of EMI processes between 1999 and 2019 in Turkish HE context are presented in Figure 8.

Figure 7. Milestones of foreign language medium of instruction development in Turkey (Yüksel et al., 2022, p.122).



In order to enroll an EMI undergraduate degree program at a Turkish university, there is not a language related prerequisite for admission from the prospective students.

They enter a national university entrance exam conducted by the Student Selection and Placement Centre and they are placed to an either EMI or TMI programme according to their preference list which has to be in accordance with their test scores (Altay, & Yüksel, 2022, p.183). Nominee students are presented two choices by both state and foundation EMI tertiary education institutions: students are supposed either to pass an in-house set language proficiency exam which is in English or to complete a preparatory year programme (PYP) with an achievement test at the end of all its modules successfully (Macaro, & Akıncioğlu, 2017: p. 2). As an alternative to in-house constructed English exam, English tests' scores conducted by Turkish Republic Student Selection Centre (ÖSYM) and the Council of Higher Education (YÖK), or international English proficiency exams' scores such as IELTS and TOEFL can be submitted to the related EMI faculties depending on their administrations' acceptance (Selvi, 2014: p.138). Few students, however, present international language proficiency test scores as these tests are more demanding and challenging (Altay, & Yüksel, 2022, p.184). Students can only start their EMI majors and they can be freshmen students if they either submit aforementioned proficiency exam requirements or finish PYP modules successfully (Macaro, Dearden & Akıncioğlu, 2016: p.3). If students cannot be successful in finishing their PYP in the maximum given time that is restricted to two years, they are presented with a choice to pass to the related departments' Turkish medium of instruction (TMI) (Altay, & Yüksel, 2022, p.184). By offering one-year English tuition, PYPs are aimed to serve like a bridge between the secondary school and undergraduate programme because of their varied level and command of English language competence once they finish secondary school (Macaro, Dearden & Akıncioğlu, 2016: p.52). However, a recent report (British Council/

TEPAV, 2015: p.110) on the effectiveness of EYPs implied the inadequacy of EYPs in Turkey by emphasizing that the amount of EMI departments should be curtailed and the number of TMI programmes should be increased until students' English levels reach Intermediate Level (CEFR B1). This has caused a hot ongoing debate in academia (Macaro, & Akıncioğlu, 2017: p. 3).

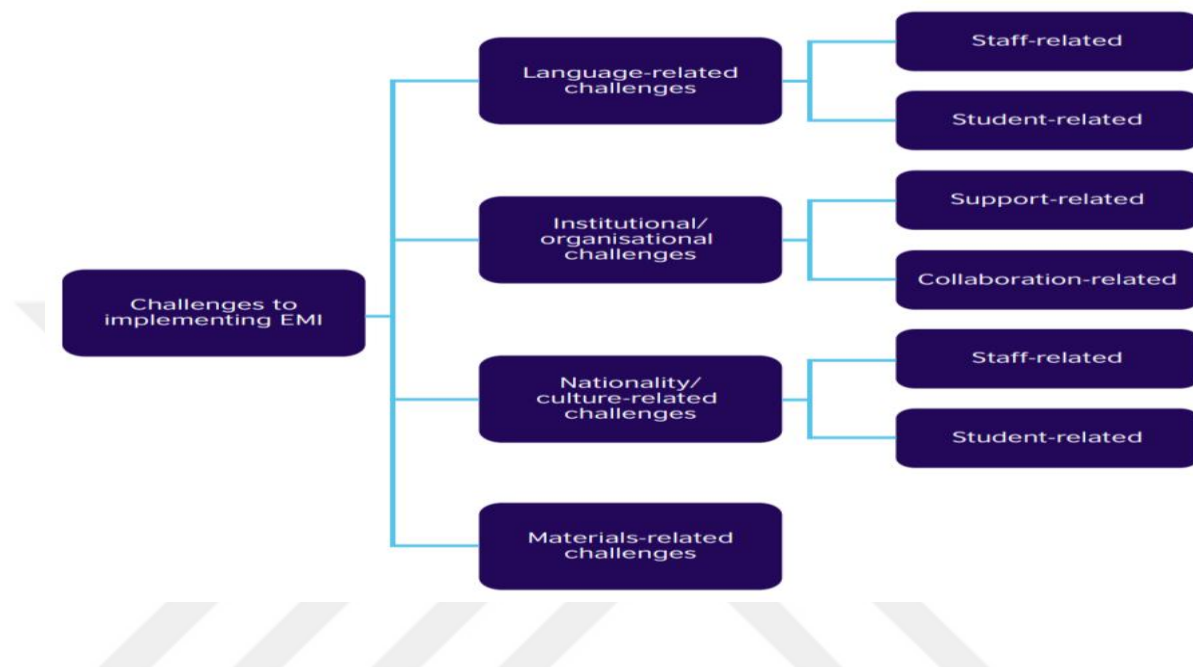
Once commencing their EMI majors, students can either have their lessons taught entirely or partially in English according to the chosen department's required curriculum. In Turkey, two types of EMI degree programmes are present: fully EMI or partially EMI. In full EMI, all courses in the related major are taught totally through the contact language: English with the ratio 100% while 30% of the lectures are delivered through English in partial EMI.

In Turkey, EMI is mostly common in hard sciences such as engineering and in certain disciplines of social sciences such as business programmes and international relations. As a strategy of "internalization at home", Turkey as a non-Anglophone country aims to improve three deeds in HE: teaching/learning activities, research activities and knowledge transfer (enterprise) as all these activities are carried out via ELF throughout the world (Maringe & Foskett, 2010, p. 8). Furthermore, Turkish HE intends to improve local students' English skills and competence as an end for internalization goal not only by recruiting international students and teachers but also being a hub for both national and international students and lecturers (Kırkgöz et al., 2021: p. 69).

2.2.5. English Medium Instruction Practices in Turkey

When it is looked at its very definition, no explicit emphasis is laid upon language teaching, but EMI is generally associated with improved language proficiency. Therefore, enhanced English proficiency is regarded as the sign of accomplished implementation of EMI in HE. Being ‘successful’ in language learning through various EMI majors is a matter of choice for both the students and their families and it is regarded as a perceived advantages of EMI degree programmes. To reach success in EMI, challenges faced in per diem praxis of EMI learning and teaching need to be revealed and resolved. Miscellaneous challenges during the implementation of EMI (Hellekjaer, 2010; Wilkinson, 2011) arise in HE institutions in the world. As part of the meticulous continuing review of EMI and its policy in diverse non-Anglophone settings, researchers (e.g., Hou et al., 2013; Kim, Kiweon, & Kim, 2017; Kim, Tatar, & Choi, 2014) find it crucial to extend the research area by giving voice to the different views of the stakeholders such as administrators, teachers or students. In HE, all the stakeholders from administrators to students encounter challenges from their aspect of view in the day-to-day practice of EMI. These challenges are given a place in different studies (Doiz, Lasagabaster and Sierra, 2014: p. 347; Wächter & Maiworm, 2014: p. 94) and shown as a chart in the research of Galloway et al.’s research (2017: p. 24, cited in Curle et al., 2020: p.33) as represented in Figure 8 below. The implementation of EMI leads to different challenges that require to be addressed as it can be understood from Figure 8. As for this research aim, students’ language related challenges in implementing EMI in HE and related research will be addressed and given a place in this very paper.

Figure 8. Categorization of challenges in implementing EMI for faculty members and undergraduates (Galloway et al.'s research (2017: p. 24 cited in Curle et al., 2020: p.33).



As no common language is shared between disciplinary instructors and undergraduates in EMI courses, this causes reciprocating problems for both parts. Instructors do not perceive themselves as foreign language educators and do not necessarily provide language feedback or give support to the students (Macaro et al., 2016: p. 52). Because of inefficient English proficiency, they cannot simplify the language accordingly when telling the content or they lack the sense of humor as they do not have the required pedagogical background in this respect (Beckett & Li, 2012: p.49). All these kinds of challenges hinder constituting a good rapport between lecturers and students (Tsui, 2017: p.6). For the successful praxis of EMI in HE, when it is looked at the students in particular, a lot of researchers have given a place for students' linguistic challenges in different context with different variables. As for this thesis's subject is students' linguistic

challenges, related studies throughout the world and in Turkey will be given place below respectively.

2.2.6. Predecessor Studies on Students' Language-related Challenges in The World

In longitudinal mix-method research by Evans and Morrison (2011), students' linguistic challenges at their first year in an EMI degree programme at Polytechnic University in Hong Kong were investigated (p.201). A questionnaire, which is also the one used for this thesis, was filled out with a highly big number of students (n=3009) and in the long run about three years on a regular basis, semi-structured, indepth interviews were conducted with 28 students (Evans, & Morrison, 2011, p. 201). The data results from the questionnaire and the semi-structured interview indicated that students in their very first years had problems in comprehending technical vocabulary, grasping the lectures, attaining a proper academic style, compensating the required institutional and disciplinary exigencies (Evans, & Morrison, 2011, p. 202-203). This research by Evans and Morrison (2011) also revealed that students tried to overcome discouraging challenges 'through a combination of strong motivation, hard work, effective learning strategies and supportive peer networks' (p. 206). They suggest students' studying in English before they are admitted to an EMI programme (Evans, & Morrison, 2011, p. 206).

The findings of Evans and Morrison (2011) supported the research conducted in previous years by Evans and Green (2007) in the same country's HE context and the

results echoed in both studies. They (2007) conducted a questionnaire survey of nearly 5000 Cantonese-speaking undergraduate students from all 26 departments in Hong Kong's biggest EMI university so as to examine language-related challenges of students. The findings of the questionnaire supported with the interview data revealed that a large number of students confronted with problems during EMI courses in EMI HE. The most problematic areas for students are "academic writing (especially style, grammar and cohesion) and academic speaking (especially grammar, fluency and pronunciation)" (Evans, & Green, 2007, p.12-13). Academic listening seems to be the least problematic skills among all four skills (Evans, & Green, 2007, p.13). It can be inferred that productive skills are more challenging for undergraduate students. The most striking outcome is the respondents' insufficient and unsatisfactory both receptive and productive vocabulary knowledge (Evans, & Green, 2007, p.14). The results show that students have insufficient competence in processing unfamiliar English vocabulary (Evans, & Green, 2007, p.14).

Aizawa et al. (2020) explored the relationship between language proficiency threshold and EMI linguistic challenges with 264 Japanese undergraduate students at an EMI business management department in a Japanese university and the findings revealed that there was a statistically significant correlation between them (p.19). In this research, they also realized the validation of Evans and Morrison's (2011) questionnaire which is also the one used for this thesis' data collection process (Aizawa et al., 2020, p.18). The findings presented surprisingly writing skill as the least challenging but speaking and reading was the most challenging skill for EMI students. Speaking was the most problematic skill in Evans and Green's (2007) research as well, however the difference

between these two studies is that writing accompanied speaking skill in Evans and Green's (2007) research as the most challenging skills. Even though the effects of language proficiency on linguistic challenges have been proved, it is still hard to express an apparent language proficiency threshold at which EMI students will be at ease and it is not possible to say that language-related challenges they confront during EMI courses will 'mitigate' at a predetermined, 'enough' proficiency benchmark when there are still challenges EMI undergraduate students face with even at B2/C1 level (Aizawa et al., 2020, p.19).

The research study by Rose et al. (2020) explored the factors that contribute to success in EMI courses. The research was conducted in Japan and involved 146 business programme university students who were enrolled in EMI courses at a Japanese HE. In the mixed-method research, data about language competency, academic competencies and motivation was collected through a questionnaire and an interview. The research illuminated the challenges experienced by students by incorporating their perceptions of both the difficulties and opportunities presented by EMI courses. The findings of the research acknowledged language skills, academic abilities, and motivation are all key factors in EMI courses for students to be more successful and identified the difficulties that students may confront in EMI courses, such as difficulties in understanding academic content, expressing themselves in academic written papers and oral form and coping with the fast pace of the courses while participating actively in classroom discussions. The research suggests that success in EMI courses is influenced by the dynamic interrelation of language proficiency, academic skills, and motivation by offering that EMI students should be provided with language and academic support (Rose et al., 2019, p.2158).

Chou (2018) conducted research in order to examine the relationship between English speaking anxiety, strategy for coping with this anxiety in language learning and speaking difficulties in full and partial EMI courses in Taiwanese HE through survey (p.616). In this way, the effects of full and partial EMI situations in HE on the speaking ability and their speech strategy of the students was also scrutinized. Chou (2018) conducted this research in two universities delivering partial EMI courses in different majors with 311 students and in two universities delivering courses in full EMI in various majors with 327 students (p.617). The findings indicated that both full and partial EMI had a great degree of anxiety in speaking skill and a fear of making a mistake, and felt lack of belief in themselves during speaking in English (Chou, 2018, p.622). However, partial EMI students felt more anxiety, less confidence in themselves during speaking and less positive perceptions towards speaking English in EMI classrooms when compared to students who had courses in full EMI. Moreover, partial EMI students were recorded as having lower grades in speaking activities than full EMI students, which indicated that partial EMI students faced more challenges than their counterparts in full EMI contexts. The results demonstrated that full EMI students exposed to English more and their intake and output of English in English speech yielded in much more. Additionally, the results showed that full EMI students employed more English-speaking strategies such as rehearsal or paraphrasing strategies and got higher grades in speaking activities.

In Hallekjær's research (2010), Norwegian students' lecture comprehension in non-language courses in HE was evaluated through a questionnaire involving self-assessment items of understanding the lecture delivered in English and in L1 (p.238). The

sample analysis with 391 respondents from related three HE institutions revealed that there is little discernible disparity in the students' grades in lecture comprehension through their mother tongue or English and a great number of respondents stated nearly the same challenges in comprehending lectures both in English and in L1 (Hallekjær, 2010, p.250). The primarily problematic areas seem to be differentiating the meaning of the words and the unknown vocabulary and having trouble in taking note while listening to their teachers (Hallekjær, 2010, p.252).

Similarly, in the EMI research of Galloway et al. (2017) in both Japan and China, linguistic challenges were the most commonly referred points among English speaking student and lecturer-body in HE institutions. As a response to the call by Dearden (2014, p. 2) for a 'research-driven approach which consults key stakeholders at a national and international level', this research is aimed to investigate the case of EMI in HE in Japan and China context with interviews, open ended questionnaires and focus groups to grasp the attitudes and approaches towards EMI and to see the driving forces behind it (Galloway et al., 2017, p.10). The data for this research was collected from 579 students at seven Chinese HE and five Japanese HE as student respondents and 28 staff members from four Chinese universities and seven Japanese universities as staff respondents (Galloway et al., 2017, p.11). In the interview questions, 28 students stated having language related problems. Ten out of 28 students regarded these challenges as arising from their lecturers' use of English on the contrary to their own usage, with the belief that their teachers' command of English was inadequate because of their being non-native English speakers (Galloway et al., 2017, p.25). The lecturers' referring to their mother

tongue during an EMI course was stated as a sign of their poor English level (Galloway et al., 2017, p.25). The other eight students left behind perceived their limited English as the cause of their language-related problems (Galloway et al., 2017, p.25). As opposed to students, lecturers (16 staff members) stated the reason of linguistic problems in EMI settings as the students' inadequate English levels by adding that they (13 members) often refer to the mother tongue so as to provide students' understanding the content of the course (Galloway et al., 2017, p.25). In the focus group, in spite of generally depicting affirmative attitudes towards EMI in theory, students expressed some difficulties in the praxis of EMI. In most student focus groups, students indicated having challenges in comprehending the related content in English (Galloway et al., 2017, p.27). Despite this, they had the belief that having instruction in English would turn to their advantages in the long course of time (Galloway et al., 2017, p.27). In teacher focus group, as opposed to their ideas in their interviews, they focused on their own English rather than students' linguistic challenges when talking about language related issues. They perceive themselves during the course as their English is not in the scene and they need strong training in language skills and collaboration between EAP and the related academic content (Galloway et al., 2017, p.30).

Similarly, He and Chiang (2016) examined 60 international students (24 students from Asia, 20 students from Africa, 12 students from Europe and 4 students from North America)' opinions about EMI educational experiences at a top-notch university in southern China. Content analysis of the students' thematically grouped open-ended reports showed that the students expressed their Chinese lecturers' instructional styles and

practices as problematic, and connected their language-related challenges to their lecturers. In the same vein, Chinese instructors' lack of English language proficiency and deficiency in their English command of explaining course content understandably were ascribed to their not effectively interactional instructional EMI implementation and therefore, their not having a full awareness about their students' language difficulties. The students' general attitude towards EMI, nonetheless, affirmative, they appreciated it and they believed they would benefit from their EMI programmes in the long run.

In a mixed method research with 221 immersion undergraduate students from different HE institutions in Gulbarga, India, Lasekan (2018) investigated how gender distinction in English language proficiency was effected by personal factors among early, middle and late university students. The results suggest that female students showed higher level of language proficiency than the male students as female students had more positive attitudes toward language learning and more self-confidence in learning language. The findings of the research are consistent with the research results of Karthigeyan and Nirmala (2012). In Karthigeyan and Nirmala (2012)'s research, female students did better in their English language exams than male students' performances.

Bukve (2020) conducted a study using survey data from students in Norway and Finland to explore gender differences in perceptions of language use in higher education. The study found that most participants had positive attitudes towards English as a medium of instruction (EMI). However, female students in Finland were less confident in their

English language skills than male students, and female students in both countries reported experiencing more challenges in day-to-day courses taught in EMI. In general, both male and female students were comfortable with the four language skills (reading, writing, speaking, and listening) in EMI contexts, but females tended to struggle slightly more than males in all four skills, except for listening skill in Norway where both genders performed equally well.

2.2.7. Predecessor Studies on Students' Language-related Challenges in Turkey

Kamaşak, Sahan, and Rose (2021) examined 498 undergraduate students' language-related challenges in Turkish HE context and administrated an online questionnaire focused on the problems concerning English four skills which are speaking, listening, reading and writing by validating the related research instrument which is also the one that gave the inspiration for this thesis (p.9). The results indicated that writing and speaking were the most challenging areas for the respondents in EMI programmes (Kamaşak, Sahan, & Rose, 2021, p.14). The analysis also showed that reported challenges differentiated significantly according to the respondents' major, their L1, previous EMI exposure and taken exam so as to fulfill the L2 proficiency entry requisitions for EMI degrees in the tertiary education institutions (Kamaşak, Sahan, & Rose, 2021, p.15-19).

In another research, Sert (2008) compared monolingual and bilingual degree programs by conducting research in order to examine both English language and content

learning through three mediums of instruction which are full EMI, partial EMI (or English aided instruction) and full Turkish medium of instruction (TMI) (p.160). Using these three instructional approaches, three universities were involved in this research with the population of 527 fourth-year students and 87 lecturers in the Faculty of Economics and Administrative Sciences (Sert, 2008, p.161). The outcomes revealed that full EMI degree programmes were the most effective medium of instruction among the three instructional approaches in the improvement of English language skill but brought questions with it in terms of its efficiency and sufficiency for content learning via full EMI (Sert, 2008, p. 166). As the results implied, none of the instruction types was found to be fully effective and sufficient in teaching academic content through another language (Sert, 2008, p. 167).

In a relatively new mixed-method research in which partial EMI and TMI were compared this time, Curle et al. (2020) analyzed the academic achievement of 159 fourth year university students in a major public university offering a partial EMI in an economy programme (p.8). Out of 159 respondents, 12 of them took part in a follow up interview voluntarily (Curle et al., 2020, p.10). They (2020) found out that students' general English proficiency was not a statistically meaningful predictor of academic success in partial EMI (p.19). This result is contradictory with the prior research on EMI success that revealed English language competency was a powerful indicator of EMI academic achievement (Li, 2018, p. 904-905; Rose et al., 2020, p. 2158; Xie, & Curle, 2020: p. 12). The other main finding of this research is that TMI success predicted EMI success in Turkish HE context as opposed to the first main finding (Curle et al., 2020, p.20). In interview data, academic language is found as a challenge for students regardless of their English

competence. However, initial, basic content courses in TMI are seen as sorts of aid in acquiring some key concepts and technical vocabulary for their EMI courses and English academic success. It was inferred from the findings that TMI courses supported the improvement of EMI content learning via students' L1 instruction in content learning (Curle et al., 2020, p.22). More academic intensive English supportive courses are recommended at the end of the research (Curle et al., 2020, p.34).

As the combination of the aforementioned studies, Altay and Yüksel (2022) analyzed one full EMI (n = 99) and one partial EMI (n = 97) student group studying in Business Administration Programmes at two universities in Turkey so as to reveal the relationship between students' English language proficiency and their language-related challenges in their mixed-method research (Altay, & Yüksel, 2022, p.182,184). Outcomes demonstrated that partial EMI students had more difficulties than their counterparts in full EMI department (Altay, & Yüksel, 2022, p.191). Respondents in partial EMI stated that the most challenging skill for them was writing skill and the least challenging skill was listening, but all types of skills had an obvious analogy among them (Altay, & Yüksel, 2022, p.191). participants in full EMI, similar to students in partial EMI, indicated listening as the least challenging skill, however, full EMI students found speaking the most challenging skill unlikely. Supported with the qualitative data results, respondents' general English proficiency (GEP) scores were a significant predictor of their success in EMI. That is to say, higher scores of GEP represented lower levels of linguistic challenges that students confronted with in EMI major (Altay, & Yüksel, 2022, p.191).

Similarly, Şahan and Sahan (2021) conducted quantitative research to see the driving forces, the motivations and perceptions of the students about academic and professional advantages and challenges of having education both in partial EMI and full EMI engineering faculty in Turkish HE context. To collect the relevant data, they administered a questionnaire to 198 undergraduate students in both programmes for comparing their replies regarding full and partial EMI. The results demonstrated that students in full EMI context had more expectations for the job prospects with high salaries and prestigious companies internationally in the future than those in partial EMI. The students in full EMI also stated that they would have more confidence in themselves as engineers and this would increase their getting promotions in their careers thanks to full EMI education in their HE experiences. Regarding the quality of EMI instruction, full EMI students had more positive perspectives towards the academic standards of their EMI education as the universities offering full EMI had higher admission requirements for the students' entrance scores, higher requirement criteria from the academicians and more profound sources in English when compared to partial EMI institutions. According to the self-reports of the students about their linguistic proficiency, reading and writing skills in full EMI students were higher than their peers in partial EMI. The reason of this was connected to their receiving all the course tuition in English as they read more coursebooks in English or wrote more tasks in English than partial EMI students. There were not a statistically significant difference between full and partial EMI students in listening and speaking skills during EMI courses. Speaking was the most challenging skill for both groups of EMI.

Kırkgöz (2005) examined the motivational factors of 203 undergraduate EMI students in their first and final study years from Economics and Business Administration, Mechanical Engineering and Electric and Electronics Engineering in a public Turkish university for choosing an EMI programme, students' own evaluation of English language skills and their perceptions of the challenges they confronted during EMI courses (p.105). Besides instrumental and intrinsic motivational factors, she (2005) found out, particularly related to this research, that EMI students both in their first and last year regarded themselves as strongest in reading and listening skills while they felt themselves as weak in writing and particularly weaker in speaking (p.117). In other words, the type of challenges students faced with did not change over time and EMI students perceived themselves as powerful in receptive skills, but as weaker in productive skills regardless of their year of study. She (2005) also stated that final year students felt themselves stronger in terms of English language skills and this suggested that experience and progress in the course of time in an EMI context played a significant role in the development of English language-related skills (p.117).

In Kırkgöz's another research (2009) examining both students' and lecturers' perceptions about the efficacy of skill-based language instruction in a Turkish EMI university, she found the same finding in embedded reading that students had difficulty in comprehending technical vocabulary as specialized lexis and written discourse are not meaningful for them (Kırkgöz, 2009, p.89).

Again, in the same context, Kırkgöz (2014), this time, compared 130 (EMI-66, TMI-64) learners' perspectives about EMI versus TMI in a mixed method research in which a questionnaire and a focus group interview was used to reveal the perceived pros and cons in learning disciplinary knowledge through EMI and TMI (p.835). EMI learners self-reported that they had challenges in comprehending disciplinary knowledge through English while TMI learners stated that their level of understanding the content knowledge was high (Kırkgöz, 2014, p.835). EMI students remarked that they had problems in understanding the lectures and particular details of it, they found this process time-consuming and understanding the exam questions were challenging for them. However, they reported such advantages as improving their language skills through EMI, better chances for access to popular resources in English, better job prospects and following the global developments (Kırkgöz, 2014, p.835). TMI learners stated easy and in-depth comprehension of disciplinary knowledge, better productive skills and better recollection of the related knowledge through TMI (Kırkgöz, 2014, p.835). They also have concerns like career facilities or difficulties in grasping the technical terms or reading original English texts (Kırkgöz, 2014, p.835).

In a qualitative research in which video-recording, an open-ended questionnaire and stimulated-recall interviews were benefited from, Soruç and Griffiths (2018) examined the challenges of undergraduate students having EMI courses in International Relations (n=24) and Psychology (n=15) in a Turkish university (p.1,2). Among the most mentioned 27 distinct themes by EMI undergraduates, the results presented that students' most problematic issues are related to the lecturers (Soruç, & Griffiths, 2018, p.5). They

expressed having difficulty in understanding English-speaking lecturers, the content they delivered and catching up with them and the topic and they found interacting with a foreign lecturer challenging (Soruç, & Griffiths, 2018, p.5). The other most stated problem is about the vocabulary knowledge. Students found it hard to comprehend the vocabulary, themes, words and get to know them or infer their meaning from the context (Soruç, & Griffiths, 2018, p.5). The other following difficulties are about listening to heavy accent of their international peers and speaking with their peers who have poor English or understanding English used in the classroom. Affective and cognitive challenges such as communicating with their peers at ease were also mentioned by the participants (Soruç, & Griffiths, 2018, p.5).

In a qualitative research which set out to reveal the challenges students face with and the needs they think in an EMI context through an open-ended questionnaire applied to 83 students from freshman to senior levels in three Turkish universities (one foundation and two state), Yıldız et al., (2017) found out that students' most challenging language related areas are getting to know technical vocabulary, understanding and following lecturers' nonproficient language use (often code-switching), following content courses through EMI after their PYPs, listening and speaking, listening and writing at the same time (taking notes while following the lecture etc.) (p.392, 393). The perceived need analysis' results are consistent with the challenges EMI students confronted with. Students reported that they need to learn technical vocabulary in a systematic way, they need consistently and proficiently English speaking both local and foreign instructors (without taking the easy way by code-switching), they need to have an improved PYP curriculum

to catch up with the instruction of their majors at ease and there should be a continuing practice-based instruction and language support system throughout all levels of their majors (Yıldız et al., 2017, p. 395).

Keeping the rationale behind selecting a sample of twelve students in their sixth and tenth semesters of EMI majors in a foundation Turkish university is that it is only after some purposeful exposure to the target language that students can accumulate some meaningful experiences and can disclose the influences of EMI on their language proficiency development in mind, Hasırcı and Cosgun (2018) wanted to explore the students' perceptions of language development and the agents affecting this alteration. The results showed that when learners are deeply and productively exposed to English in EMI with all the course of time, they can improve their language skills and corrective feedback keeps the students on the way and among all the skills, "speaking is the weakest and the least developed skill over all the years" (p.95). Insufficient practice, tendency to use learners' home language, non-native lecturers and their often resorting to their L1 and are reported as the hampering factors behind developing speaking skill by the respondents (Hasırcı, & Cosgun, 2018, p.111). Unfamiliar technical terms and tasks are also seen as inhibitory for EMI (Hasırcı, & Cosgun, 2018, p.111).

Considering institutional variables such as year of study, foundation or state university or students' gender in quantitative research in which 989 participants filled out an online questionnaire, Macaro and Akıncıoğlu (2018) examined students' perceptions

about EMI and students in all levels felt positive about EMI and satisfied with it in general (p.256). Females and foundation university students were more satisfied with and had a positive stance towards EMI and the progress in their language ability than males and state university students (Macaro, & Akıncıoğlu, 2018, p.265, 266). There was not a statistically significant difference between institutional variables in terms of challenges they face with in EMI context, but it is important to state that foundation university students reported more coping with English than state university students and females found it more difficult than males to speak before their counterparts and instructors (Macaro, & Akıncıoğlu, 2018, p.265, 266).

Gurler (2015) investigated whether there is a connection between the self-confidence and speaking skill success in speaking courses of the PYP students in Turkish context and it also aims to find out whether there is a discrepancy between the departments and gender. The results indicated that speaking success differed significantly according to the departments but not the gender. However, the levels of self-confidence differ significantly in pertinent to gender but not to the departments.

CHAPTER III

3. METHODOLOGY

The related chapter documents the research design employed in conducting the current research and elucidating the rationale behind why the chosen method has been applied for by referring to the research questions. This chapter begins with the introduction of the research questions and related research design and furthers with expressing the aim of employing mixed methods. It continues with the setting, participants, data collecting instruments and data collection procedures, data analysis methodologies, the ensurance of validity and reliability, and limitations of the research.

3.1. RESEARCH QUESTIONS

This research was carried out to investigate EMI students' linguistic challenges in their academic courses in Turkish HE context by categorizing these challenges under the four receptive and productive language dimensions and to see whether these challenges change according to the demographic variables in their majors. In the same line with this purpose, three research questions were designated as the core of the present research to explore the relevant problem (see Table 5 below). The first question displays the challenging language skills deeply for EMI students while stating where the most problematic areas are. The second question intends to reveal whether these language difficulties students face differ according to demographic information about them formulated as sub-questions. Namely: gender, type of university, field of study, type of

EMI: full (100% EMI) or partial (30%), taking a preparatory class prior to EMI programme, year of study. Third question seeks to examine how Turkish university students attending EMI contexts perceive the language and its learning challenges. The interviews will be analyzed and interviewed in line with this question.

Table 5. *Research Questions and Data Collection Instruments*

Research Questions	Data Collection Instrument
1.What are the skill-based linguistic difficulties EMI students have in Turkish HE context?	Questionnaire + Semi-structured Interview
2.Do these language-related difficulties show differences in relation to:	Questionnaire
a) gender,	
b) type of university (state vs. foundation)	
c) field of study,	
d) type of EMI (full EMI or partial EMI),	
e) whether or not attending the preparatory class prior to EMI programme,	
f) year of study,	f) Questionnaire + Semi-structured interview
3.How do Turkish university students attending EMI programmes perceive language and learning challenges?	Semi-structured Interview

3.2. RESEARCH DESIGN

Deciding on a correct research design is a very important issue as it provides the success of the related research. An in-depth comprehension of the research paradigms provides the correct decision in adopting the true research method and best addressing the research problems and guiding the survey process. According to Zappa-Hollman and Duff (2019), the research design should be determined according to the paper's research topic

(p.1036). Either quantitative or qualitative research designs have their own advantages and disadvantages (Dörnyei, 2007, p.165). While quantitative research provides objective and verifiable facts through indicative research tools such as online questionnaires, qualitative research derives from the participants' own statements through subjective research tools such as interviews or participant-observation (Dawadi, Shrestha, & Giri, 2021, p. 27).

As stated by Gillham (2008), "The essential point is that good research cannot be built on poorly collected data . . ." (p. 1), a mixed-methods survey approach was conducted in this research in order to best address the related research questions. Mixed method research comprises multiple methods to comprehend the phenomenon of interest rather than just one method (either qualitative or quantitative). By interweaving both quantitative and qualitative data findings in reply to the research questions with such a satisfactory depth and breadth (Enosh, Tzafrir, & Stolovy, 2014), mixed method research elucidates many advantages while gathering, analyzing, interpreting and reporting these data. As indicated by Creswell (2015), mixed-methods survey is a methodology for research design that integrates several methods in order to approach to the research problems in a principled and suitable way. Mixed-method research incorporates both post-positivism and interpretivism as philosophical frameworks for collecting and analyzing the findings from multiple scales in a sole paper in order to explain the problem findings meaningfully and logically (Fetters, 2016, p.9). The core assumption behind adopting mixed-method research in this paper is that it provides additional insight beyond the data yielded by either quantitative or qualitative research itself *per se* (Creswell, & Creswell, 2018, p.41). While quantitative data yields a breadth for the research by collecting data from a wide number of populations represented, qualitative data brings a depth to the research by honoring the individual participants' sounds (Creswell & Plano Clark, 2018, p.46). In this respect, neither qualitative nor quantitative approach can be considered as two distinct dichotomies, rather they form a continuum with two ends, mixed method sitting in the middle of them as it integrates the two approaches (Creswell, 2015, p.3). In the same vein, a mixed- method research strengthens the paper by answering the research questions with the findings of two research approaches while each method's finding also compensates

for the weaknesses of one another (Johnson & Onwuegbuzie, 2004, p.11). Correspondingly, quantitative results can be triangulated with the results of the qualitative ones by merging the findings in a single pot to address research questions in a detailed way by gaining a deeper understanding of the research issue and generalizing the results to a population (Plano Clark & Ivankova, 2016, p. 86). Through triangulation of both findings, the research results' incredibility and validity can be increased (Ventakesh et al., 2013, p.25).

In this respect, the current research comprises the triangulation of quantitative data and qualitative data to yield more powerful inferences rather than one worldview with a single research method. As for the quantitative data collection tool, a questionnaire was employed. Questionnaires, as a quantitative data collection instrument, have been most widely and commonly used in L2 research (Dörnyei, & Dewaele, 2023, p. 1). The questionnaire is quite efficient and versatile in terms of cost-effectiveness, researcher's time and effort as it lets the researcher to collect a big amount of information with a high variety of participants in diverse situations in a short time and to process the quantitative findings readily (Dörnyei, & Dewaele, 2023, p. 7). In spite of questionnaire's obvious virtues, It also bears some disadvantages such as untrustworthy and unmotivated attendants, their literacy problems with the related scale and having little or no chance to correct their mistakes in case they misunderstand or do not remember the certain reply, their 'social desirability (or prestige) bias's (expressing belief or feeling in accordance with the expected/ desired response rather than actual belief or sense), self-deception (veiling their faults while polishing their merits to preserve their own perception of self-worth), self-selection bias (good and willing participants present valid answers), acquiescence bias (yeasayer respondents to anything sound nice), halo effect (overgeneralizing the related situation with respondents' overall impression) and fatigue effects (answerers' tiredness or boredom in case of the scale's being too long or monotonous) (Dörnyei, & Dewaele, 2023, p. 11). However, Kinginger (2021) indicated that it is

“necessary to respect and preserve methodological diversity in our field, to see both the forest and the trees (Dewaele, 2019), particularly when the aims of research are lofty and include advocacy for the health and survival of the entire enterprise of language learning and the systems and institutions in which language teaching is embedded” (p. 45).

Keeping this in mind in order to enrich the quantitative research data, semi-structured interview questions are combined with it by admitting that the truth is much more than the statistical figures, numerical and the averages (Dawadi, Shrestha, & Giri, 2021, p. 27). With semi-structured interview, the chance will be given to the randomly selected respondents to express their opinions upon EMI challenges and their voices may point to novel perspectives or underscore misunderstandings (Dörnyei, & Dewaele, 2023, p. 14). Participants for the qualitative section were the subsample of the respondents to whom the questionnaire was administered. As Creswell & Clark (2018) and Creswell & Creswell (2017) pointed out that the efficacy and strength of a mixed-method survey is much more than that of a single method research and mixed-method research design is more inclusive than one method *per se*, a mixed-method research with a five-point Likert-scale questionnaire followed by a semi-structured interview in a sequential explanatory research design was administered in this research. There are four models in conducting a mixed-method research. Sequential explanatory research design was decided to be the most convenient design for this research. In this design, there are two different phases. As a first step, the quantitative data collection and analysis of the findings were preceded. On the basis of the quantitative instrument findings, a qualitative data strand was designed to help to explain the quantitative findings together, delve deeper and bring distinct voices to the surface (Wisdom & Creswell, 2013, p. 2). Supporting information for these quantitative conclusions comes from interview data. Finally, quantitative findings were interpreted upon how well the subset attendants’ perspectives matched up to the questionnaire statistical results qualitatively with a supported summary of the related findings.

3.3. RESEARCH SETTING

There are two types of EMI programs offered by Turkish universities: full EMI, where all classes are taught in English (100%), and partial EMI, where only some subjects are taught in English, also named by Macaro (2018) as ‘multimodal EMI’ (Altay & Elcin, 2020, p. 578). In partial EMI, at least 30% courses are given in English. Both models require a preparatory year model (Macaro, 2018), which necessitates taking an English proficiency test for the exemption from the PYP or submitting certain English proficiency exams’ scores such as IELTS and TOEFL to enter their majors. If they fail, they have to take their intensive PYP for one year before commencement to their majors. When they start their majors, they have their courses in either full EMI or in partial EMI. In Turkey, both state and foundation universities offer EMI programmes, which are mostly partial EMI (Arik, & Arik, 2014, p.7). With a broad range of departments in full and partial EMI, students in both foundation and state HEs were involved in this research.

3.4. PARTICIPANTS OF THE RESEARCH

A total of 1191 students (614 male and 577 female) from all years of study (freshman, sophomore, junior and senior) took part in the questionnaire. Table 6 indicates the numbers of participants with their related percentages according to their gender. 48.4% (577) of the participants consist of females whereas 51.6% (614) of them consist of male attendants.

Table 6. *Distributions of Participants According to Gender*

	Frequency	Percent	Valid Percent	Cumulative Percent
Female	577	48.4	48.4	48.4
Male	614	51.6	51.6	100.0
Total	1191	100.0	100.0	

Table 7 below illustrates the distribution of the students in public and foundation universities. 801 students (67,3%) are the ones who attend public universities in Turkey whereas 390 participants (32,7%) are students at foundation universities in Turkey. The overwhelming majority of the attendants study at public higher education institutions.

Table 7. *The distribution of the participant according to the type of university*

	Frequency	Percent	Valid Percent	Cumulative Percent
State University	801	67.3	67.3	67.3
Foundation University	390	32.7	32.7	100.0
Total	1191	100.0	100.0	

Table 8 shows the number of students attending either in full EMI or in partial EMI programmes. When the type of the EMI programmes students attend is taken into consideration, it is observable that 396 (33.2%) of the participants attend full EMI (100% English) in comparison to 795 (66.8%) students who attend partial EMI (30% EMI).

Table 8. *The distribution of the participant students according to the type of EMI*

	Frequency	Percent	Valid Percent	Cumulative Percent
Partial EMI	795	33.2	33.2	33.2
Full EMI	396	66.8	66.8	100.0
Total	1191	100.0	100.0	

Relevant to EMI type, Table 9 shows the distribution of the participants who took preparatory year before commencing EMI and who did not. While the majority of the participants with 73.5% (875) took preparatory year before EMI courses, the rest of them, on the other hand, with 26.5% (316) did not attend preparatory year.

Table 9. *The distribution of the participant students according to their attendance to the preparatory year*

	Frequency	Percent	Valid Percent	Cumulative Percent
Yes	875	73.5	73.5	73.5
No	316	26.5	26.5	100.0
Total	1191	100.0	100.0	

With respect to the distribution according to the year of the study, 252 (21.2%) of the participants are first-year students, 269 (22.6%) of the students are second year students, 258 (21.7%) of them are in the third year of their study and 346 (29.1%) of them are in the fourth year of the study. Relatively, the number of students is low in the fifth and sixth year of the study as only few departments such as faculty of medicine, pharmacy or veterinary have fifth or sixth year of study. In this current research, there are only 46 (3.9%) students in the fifth year of study and 20 (1.7%) students in the sixth year of study at related departments as seen in Table 10.

Table 10. Year of the Study

	Frequency	Percent	Valid Percent	Cumulative Percent
First Year	252	21.2	21.2	21.2
Second Year	269	22.6	22.6	43.7
Third Year	258	21.7	21.7	65.4
Fourth Year	346	29.1	29.1	94.5
Fifth Year	46	3.9	3.9	98.3
Sixth Year	20	1.7	1.7	100.0
Total	1191	100.0	100.0	

Relevant to the research question that this research paper address, data was collected from different academic disciplines. The academic departments were classified into four divisions in accordance with The University of Oxford's Divisions and Departments framework (see Appendix B). In the literature, academic disciplines can be categorized in diverse categories such as "physical and life sciences, social sciences and the humanities" in three (Altay et al., 2021), as "hard sciences and soft sciences" (Dafouz, Camacho, & Urquia, 2014) or "numeric based departments, and arts and humanities" (Dearden & Macaro, 2016) in two. The University of Oxford divided academic disciplines into four broad categories: Humanities, Mathematical, Physical and Life Sciences (MPLS), Social Sciences and Medical Sciences (University of Oxford, 2020). In the current research, Humanities (N=167) with a percentage of 14%, Social Sciences (N=356)

with a percentage of 29.9% stand at one side whereas MPLS (N=566) with the overwhelming majority of 47.5% percentage and Medical Sciences (N= 102) with a percentage of 8.6% constitute the other end. Table 11 below show the academic departments in Oxford's four divisions as aforementioned above.

Table 11. *Faculty Type in Four Divisions*

	Frequency	Percentage (%)	Valid Percent	Cumulative Percent
Humanities	167	14.0	14.0	14.0
MPLS	566	47.5	47.5	61.5
Social Sciences	356	29.9	29.9	91.4
Medical Sciences	102	8.6	8.6	100.0
Total	1191	100.0	100.0	

As for the qualitative data, 15 participants attended the semi-structured interview. The distribution of the participants regarding gender, department, year of study, type of EMI and type of university. Table 12 below illustrates the distribution of the attendees in the semi-structured interview.

Table 12. *Distribution of Participants in Semi-structured Interview*

Participants	Gender	University Type	Department	Year of Study	Type of EMI
P1	K	Foundation	Medical Sciences	6	Full
P1	K	Foundation	Medical Sciences	2	Full
P3	K	Foundation	Social Sciences	3	Full
P4	K	State	MLPS	1	Full
P5	K	Foundation	Social Sciences	2	Full
P6	E	State	MLPS	4	Full
P7	K	Foundation	Social Sciences	4	Full
P8	K	Foundation	MLPS	1	Full
P9	E	State	Humanities	4	Full
P10	E	State	MLPS	4	Partial
P11	E	State	MLPS	3	Full
P12	K	State	MLPS	4	Full
P13	E	Foundation	MLPS	3	Full
P14	K	State	MLPS	2	Partial
P15	K	State	Medical Sciences	2	Partial

3.5. DATA COLLECTION

The target population of the research is both full and partial EMI students at different departments in both foundation and state Turkish universities from freshman to senior grades with a background of either having preparatory year or not. Owing to the character and the diverse distribution of the target group at various universities and departments, snowball sampling method was primarily preferred in order to reach participants. As it was aimed to reach to the respondents from all EMI departments and from all levels in either state or foundation universities and due to their distribution in different parts of Turkey, this research was conducted using a snowball sampling method

to recruit participants from both state and foundation higher education institutions' diverse departments offering full or partial EMI in Turkey for the administration of online questionnaire. The questionnaire was formed on online Google Forms. All the items were kept as mandatory on the settings of Google Forms so as not to leave any items of the scale forgotten or unanswered. The distribution of the online questionnaire was provided through social media accounts such as WhatsApp, Twitter. Ruel et al. (2016, p. 2), likewise, indicated that "E-mail and the web have now emerged as a primary vehicle for questionnaire distribution and data collection." The online questionnaire was kept open during spring term of 2021/2022 academic year and till the end of November in the fall term of 2022/ 2023 academic year. Additionally, email addresses of the instructors from both foundation and state universities were collected from the websites of the relevant EMI departments of the universities. With this technique, more than three thousands of email addresses were reached. Upon sending email to the instructors for asking permission for survey with the relevant ethics committee report and receiving positive return, the link was shared with the students through the university intranet or class social media groups via EMI instructors. In order to increase the participation and to try to reach an equilibrium among the variables' distribution, convenience sampling through hard copy was also conducted alongside soft copy. For that purpose, the researcher coordinated with the EMI instructors, the date and the place were decided together with the relevant university authorities' approval. The process of hard copy data collection was carried out at the end of the EMI courses before the presence of EMI instructor. Not an authority being physically present during the administration of the questionnaire may lead to some drawbacks for the collected data admitted being valid as there are some detailed points to be clarified by the researcher or the representative (Lazar et al., 2017, p. 106). This provided extra efficiency in collecting data as it decreased the time allocating to the survey and provided the completion all at once while keeping the classroom in a relaxed mood. Initially, it was declared that participation in the survey was guaranteed as voluntary and confidentiality was assured. Students were informed that they could withdraw from the questionnaire at any step with no reaction.

For the semi-structured interviews, either face to face or video-conferencing were

realized according to the participants' convenience and preference. All the conferences were audio- or video-recorded. Interviews were conducted with the students who gave positive return for participation. All the interviews were categorized with reference to the themes, patterns or insights come into the open from the data.

3.6. DATA COLLECTION INSTRUMENT

Considering the merits of mixed-method research, multiple data collection instruments were employed in this research. Dichotomously juxtaposed quantitative and qualitative data collection involved two research instruments with the aim of getting a full understanding of the phenomenon. Accordingly, a questionnaire pertinent with the research questions on EMI students' linguistic challenges (Appendix B) and a semi-structured interview (Appendix C) concerning the third question in this research. More detailed information regarding the data collection instruments is supported below.

3.6.1. Questionnaire

Questionnaire is one of the most widely and commonly utilized research instruments by the researchers especially in L2 studies since employing a questionnaire in research is “cost effective, not affected by the subjectivity of the researcher, it can reach high audiences, and has high representativeness [beside] providing low development time” (Queirós, Faria & Almeida, 2017, pp. 382-383).

A questionnaire, which involved 49 items in total about both demographic details and items about language-related challenges, was administered in order to get a full understanding of linguistic challenges of EMI students in HE. The first six items (gender, type of university, field of study, year of study, type of EMI programme, PYP experience) were relevant to demographic information in the first section. The other 43 questions were adapted from Evans and Morrison's (2011) EMI language-related challenges scale. The questions were divided into four domains of language skill as writing (14 items), reading

(9 items), speaking (10 items) and listening (10 items). The answers pertaining to four language skills were saved with a five-point Likert Scale involving choices from very difficult (1) to very easy (5). The lower the score, the more difficult the relevant linguistic skill. This questionnaire was developed by Evans and Morrison (2011) for EMI HE setting in Hong Kong and it was adapted by different researchers (Aizawa et al., 2020; Altay et al., 2021; Curle et al., 2020; Kamasak et al., 2021 and Rose et al., 2020) for different settings. Aizawa et al. (2020) realized the validation of the scale in Japanese context. For the present research, Kamasak's validated version was used. Through confirmatory factor analysis (CFA), the instrument was validated by Kamaşak et al. (2021) for Turkish context that this scale evaluates what it aimed to measure (EMI linguistic challenges in Turkish context). Through a mutual negotiation by research advisor, it was decided that aforementioned scale was also appropriate for the present research.

3.6.2. Semi-structured Interview

When it is aimed to enrich the quantitative data findings, the most efficacious way is to join the quantitative data with a qualitative survey through an integrative research design. During statistical data collection procedures, complicated connections among the variables cannot be evaluated deeply in some situations. Some unsuspected results, however, need further interpretation upon the conclusions driven from the quantitative data as it cannot reveal the precise picture of the relationship in some cases (Dörnyei, & Dewaele, 2023, p. 110). With integrated data obtained through questionnaire and a follow-up semi-structured interview, the inadequacies of the questionnaire will be compensated for the individuality of the subjective data providing in-depth, comprehensive reflection for the numerical findings.

For the current research, the semi-structured interview consisting of five questions were adapted from the research of Altay and Yuksel (2022) following the relevant consent from the authors. The interview questions were prepared by Altay and Yuksel (2022) with relevant to the questionnaire which involved equivalent items to the situations in the

interview and appropriateness of the interview questions they used it in their paper were confirmed by them. In line with the sequential explanatory research design, the third question was answered with semi-structured interview questions following the results of the first two questions that were replied via the questionnaire. Interviews were conducted with fifteen volunteer participants by using zoom video-conferencing application and face to face upon sending randomly an invitation message to EMI students and getting a positive reply through WhatsApp and Twitter groups of their school. Pseudonyms such as P1 or P3 were used for presenting their statements. Appendix C shows the related semi-structured interview questions protocol.

3.7. DATA COLLECTION PROCEDURE AND DATA ANALYSIS

Data analysis is a phase at the end of which the process turns out to be a product (Dörnyei, 2007, p. 257). For the current research' analysis, the results of the quantitative research were gathered from the students' linguistic challenges scale and saved according to the security and privacy norms for research. The obtained results from the participants were first transferred to excel by giving number to each attendant with the purpose of avoiding any confusion for further analysis. The statistical package for social sciences (SPSS, version 26) was conducted for generating descriptive statistical analysis and viewing the percentages, frequencies, the means and the standard deviations for each item and each part of the questionnaire for all quantitative variables and for the overall scale. The reliability analysis of the scale for each construct and the total interreliability of the scale was confirmed and verified through Cronbach's Alpha statistics beforehand by Kamaşak et al. (2021). First, tests of reliability and normality were administered for the data relevant to overall scale and four skills separately: reading, writing, speaking and listening to check whether all the relevant future assumptions were met. With an assessment of skewness and kurtosis and by running Kolmogorov-Smirnov and Shapiro-Wilk tests, the data were seen not to be normally distributed for each research construct analysed in the current research.

For the qualitative data part, thematic analysis which is sometimes referred to as ‘qualitative content analysis’ (Selvi, 2020) was conducted. Thematic analysis is a kind of method including identifying, analyzing and forming themes or patterns from the relevant data. The theme (or a pattern) can be defined as “something important about the data in relation to the research question and represents some level of patterned response or meaning from the data set” (Braun & Clarke, 2006, p. 80). The six thematic analysis steps developed by Braun & Clarke (2006) below were followed for the qualitative data analysis in the present research:

1. “Familiarising yourself with your data
2. Generating initial codes
3. Searching for themes
4. Reviewing themes
5. Defining and naming themes
6. Producing the report” (p.6).

Creswell (2014) also separated with the aim of analyzing the qualitative data in six similar steps in the same vein. By benefiting from his phases as well, all the conducted interviews with a subset of the participants (n=15) were transcribed wholly. All the transcriptions were read in detail and gotten general sense of the ideas here with a deep reflection on them. Then similar ideas and thoughts were clustered under the same topics formed. After coding all the interviews under similar headings through Maxqda and going over the codes a couple of times, final recurrent codes, themes and patterns driven from the data were ultimately formulated according to their recurring with more frequency. The interpretation based on the related themes and patterns were done in pertinent to the results of qualitative research.

The semi-structured interview for qualitative research was adapted from Altay and Doğan (2022) and reliability of it was confirmed by them in their published paper. Pseudonyms such as P1 for the first participant were used for the participants during the

report and interpretation of the interviews in order to maintain anonymity which was first established by giving numbers in the questionnaire section.

3.8. VALIDITY AND RELIABILITY

Before conducting the relevant analysis, it is crucial to ensure the thorough and thoughtful validity and the reliability of the scale. According to Dörnyei and Taguchi (2009), validity is the most crucial criterion in language testing, without it, a language test is meaningless and useless, and a valid test can measure what is supposed to measure (p. 48). As aforementioned above, the validity of the questionnaire was ensured in the research of Kamaşak et al. (2021). It was found that the related instrument with four constructs could be used as a valid measure for overall language-related challenges in EMI contexts and each factor could be utilized as a separate measure of the difficulties corresponding to reading, writing, speaking and listening in EMI platforms (Kamaşak et al., 2021, p.11).

According to Dörnyei (2003), "While validity and reliability are often treated as separate concepts, they are inextricably linked. Without reliability, a test cannot be valid, and without validity, reliable scores are meaningless. It is therefore essential to consider both concepts when designing, administering, and interpreting language tests." The Cronbach Alpha coefficient aids specifying a scale's internal consistency (Dörnyei, 2010). The coefficient alpha for the overall research scale in this research was found to be .973 as shown in Table 13. In this case, it may be inferred that the questionnaire has a high level of reliability. Coefficient alpha for the overall reliability of the scale was obtained to be as .974 (Kamaşak et al., 2021, p.34). These two repeating findings demonstrates that this highly reliable scale presents and obtains consistent, accurate and replicable results.

Table 13. *Reliability Analysis for the Overall Student EMI Challenges Scale*

Reliability Statistics	
Cronbach's	
Alpha	N of Items
.973	43

Table 14 below indicates the four constructs of the scale's reliability measures and numbers of the items in each part. As shown in the Table 14, Cronbach's Alpha values for writing, reading, speaking and listening constructs have a high level of reliability.

Table 14. *Reliability Analysis for Reading, Listening, Writing, and Speaking*

Reliability Statistics		
	Cronbach's Alpha	N of Items
Writing	.938	14
Reading	.918	9
Speaking	.935	10
Listening	.937	10

Before commencing the analysis of the quantitative findings, it is crucial to run the test of normality to see whether the conclusions of the questionnaire were normally distributed or not. The results of the normality test determine the corresponding statistical analyses (either non-parametric or parametric). As the choice of test depends on the sample size and the number of the data is 1191 which is above 100, Kolmogorov-Smirnov was used to determine whether the variable distribution departed substantially from normality ($p < .05$). The average score value of the scale was found to be deviated substantially from normal distribution on the results of test of normality. Therefore, non-parametric statistical methods were employed to scrutinize these discrepancies from the normal. According to Liu and Jiang (2019), non-normal distribution in language studies

is common especially with language proficiency scales and finding suitable non-parametric statistical tests is really important during analyzing non-normal distributed data. Table 15 below shows the related results of the test of normality.

Table 15. *Test of Normality*

	Tests of Normality					
	Kolmogorov-Smirnov ^a			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Overall Scale Mean	.029	1191	.020	.990	1191	.000

a. Lilliefors Significance Correction

CHAPTER IV

4. FINDINGS

In this part, the findings of the quantitative and qualitative data collected from the questionnaire and the semi-structured interview will be presented in the same sequence with the related research questions.

4.1 ANALYSIS OF THE QUESTIONNAIRE

4.1.1. Findings of the RQ1

The first research question seeks what the linguistic obstacles EMI undergraduates have in Turkish EMI settings are. With the purpose of learning the answer to the first research question, 1191 EMI students' responses to the language challenges scale were analyzed. The results are given in Table 16.

Table 16. *Descriptive Statistics (N=1191); Scale from 1(very difficult) to 5 (very easy)*

Item	Mean Statistic	Std. Deviation Statistic
WRITING ITEMS		
CW1- Planning written assignments	3.48	.988
CW2- Revising written work	3.70	1.022
CW3- Using appropriate academic style	3.16	1.147
CW4- Writing a bibliography/ references section	3.58	1.228
CW5- Proofreading written work	2.97	1.244
CW6 - Referring to sources in written work	3.34	1.206
CW7- Summarizing/ paraphrasing ideas in sources	3.49	1.078
CW8- Organising ideas in coherent paragraphs	3.42	1.101
CW9- Expressing ideas clearly and logically	3.58	1.093
CW10- Linking ideas from different sources	3.41	1.134

CW11-Writing the introduction to an assignment	3.69	1.106
CW12-Writing the body of an assignment	3.60	1.060
CW13-Writing the conclusion to an assignment	3.75	1.092
CW14- Liking sentences smoothly	3.65	1.057
Overall writing	3.48	.827

READING ITEMS

CR1-Understanding specific vocabulary	3.64	.970
CR2-Working out the meaning of difficult words	3.22	1.088
CR3-Reading carefully to understand a text	3.76	.948
CR4-Reading quickly to find specific information	3.51	1.137
CR5-Identifying supporting ideas and examples	3.64	.989
CR6-Reading quickly to get overall meaning	3.55	1.174
CR7-Identifying the key ideas of a text	3.74	.993
CR8-Taking brief, relevant notes	3.79	1.037
CR9-Understanding the organisation of a text	3.67	1.008
Overall reading	3.57	.792

SPEAKING ITEMS

CS1-Speaking accurately (grammar)	3.16	1.113
CS2-Speaking clearly (pronunciation)	3.50	1.175
CS3-Presenting information/ ideas	3.53	1.100
CS4-Participating actively in discussion	3.14	1.239
CS5-Communicating ideas fluently	3.15	1.210
CS6-Speaking from notes	3.97	1.012
CS7-Asking questions	3.77	1.068
CS8-Answering questions	3.43	1.132
CS9-Communicating ideas confidently	3.24	1.228
CS10-Using visual aids (e.g. PowerPoint)	4.01	1.044
Overall speaking	3.49	.901

LISTENING ITEMS

CL1-Understanding the main ideas of lectures	3.96	.978
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CL2-Understanding the overall organisation of lectures	3.93	.967
CL3-Understanding key vocabulary	3.93	.986
CL4-Taking brief, clear notes	3.86	1.059
CL5-Identifying supporting ideas and examples	3.73	.995
CL6-Understanding lecturers' accents	3.47	1.228
CL7-Following a discussion	3.69	1.069
CL8-Identifying different views and ideas	3.73	1.057
CL9-Understanding questions	3.95	1.004
CL10-Understanding classmates' accents	3.37	1.211
Overall listening	3.76	.846

Note. M and SD stands for mean and standard deviation, respectively.

As shown in Table 16, 1191 students' responses for 43 items pertinent with writing, reading, speaking and listening challenges in EMI settings, separately were evaluated and the mean scores of each item were given on the table. In this research, the 5 Points Likert Scale was utilized. Responses for 1 refer to 'very difficult' and 5 refer to 'very easy' on the Likert Scale. In this instance, low means mean students experience more difficulty. 3 and above it means that students do not face great language-related challenges in these skills and items.

Generally speaking, students showed the inclination for doing better in four constructs as the means are above 3 except for the writing item 3. Writing item 3 ($m=2.97$) is also just below the middle point 3. Students' answers demonstrates that they view the items of "proofreading written work" in writing skill subscale, "working out the meaning of difficult words" in reading skill subscale, "participating actively in discussion" in speaking skill subscale and "understanding classmates' accents" in listening skill subscale as the most challenging linguistic matters in related areas.

When the four skills' overall means are taken into consideration according to the replies of the participants, writing ($\bar{x}=3.48$) is the most challenging skill among four skills.

Speaking ($\bar{x}$ = 3.49), reading ($\bar{x}$ = 3.57) and listening ($\bar{x}$ = 3.76) skills follow writing construct in ascending order in terms of their means. Students' responses indicate that there is statistically slight difference between writing and speaking skill. This means that there is a slight difference in the level of difficulty students have between writing and speaking skills. Writing skill and speaking skill seem to be the most challenging areas when compared to the reading and listening skills. Listening is the least challenging skill that students experience problems with it in their EMI contexts according to the overall means of the subscales, in this respect. Therefore, the descriptive statistics of the scale substantiate that participants face with more challenges in productive skills (writing and speaking) than they face in receptive skills (reading and listening). The most challenging elements students experience are proofreading written work in writing in the first line and actively participating discussion in speaking in the second line. Notwithstanding the changing degrees of the most challenging linguistic elements also go with the productive skills (writing and speaking, respectively) students face with the greatest difficulty (see Table 17 below).

Table 17. *Descriptive Statistics for Overall Scale and Four Skills Mean*

	Mean	Std. Deviation	Skewness	Kurtosis
	Statistic	Statistic	Statistic Std. Error	Statistic Std. Error
Overall Scale Mean	3.57	.749	-.135	.071
Writing Mean	3.48	.827	-.122	.071
Reading Mean	3.57	.792	-.188	.071
Speaking Mean	3.49	.901	-.230	.071
Listening Mean	3.76	.846	-.461	.071

The overall mean of the scale ($\bar{x}=3.57$) which is above the average point 3 displays that students did not report great difficulty in general. They generally seemed to be at ease in having education through EMI in their HE departments. The values of skewness and kurtosis are between the interval of -1; +1.

4.1.2. Findings of the RQ2

The second question of this research investigated whether or not these linguistic challenges show differences in relation to gender, type of university (state vs. foundation), field of study, type of EMI (full EMI or partial EMI), attending the preparatory class prior to EMI programme, year of study.

a) Gender: With the purpose of determining whether the students' demographic characteristics, for the first instance, gender had a statistically significant impact on language-related difficulties questionnaire, the Mann-Whitney U test was employed. The findings of the related test are shown in Table 18.

Table 18. *Mann-Whitney U Test Results for Gender*

	Test Statistics ^a			
	Writing Mean	Reading Mean	Speaking Mean	Listening Mean
Mann-Whitney U	160397.500	160503.000	168430.500	155977.500
Z	-2.823	-2.807	-1.469	-3.570
Asymp. Sig. (2-tailed)	.005	.005	.142	.000

a. Grouping Variable: Gender

Table 18 above shows that gender variable, being male (N=614) or female (N=577) significantly differs for having challenges in three skills namely, writing (.005), reading (.005) and listening (.000) as their p-value was below .05. However, gender was not a significant variable across the speaking challenge as its p-value was (.142) above .05. When the Mann Whitney U Test ranks as shown in Table 19 below are taken into consideration upon seeing the low p-values in aforementioned areas in order to specify the side of this difference between these two groups, it can be concluded that females had more challenges in “proofreading written work in writing”, in “working out the meaning of difficult words” in reading and “understanding their classmates’ accents” in listening than male participants had but there was no statistically significant difference observed between male and female in pertinent to having difficulty in speaking. All in all, it can be inferred from the results of the relevant test that there was a statistically significant difference between two groups in writing, reading and listening skill, but not a meaningful difference in speaking according to gender.

Table 19. *Mann-Whitney U Test Ranks Table for Gender*

	Gender	N	Mean Rank	Sum of Ranks
Writing	Female	577	625.01	360633.50
	Male	614	568.73	349202.50
	Total	1191		
Reading	Female	577	624.83	360528.00
	Male	614	568.91	349308.00
	Total	1191		
Speaking Mean	Female	577	580.91	335183.50
	Male	614	610.18	374652.50
	Total	1191		
Listening	Female	577	632.68	365053.50
	Male	614	561.54	344782.50
	Total	1191		

b) Type of University: With regard to the attendants’ academic linguistic challenges in EMI context according to the type of university, it was scrutinized whether

state or foundation universities statistically significantly differed among participants in having academic language-related problems. As the mentioned data set was not normally distributed, non-parametric Mann Whitney U Test was employed as a counterpart of parametric statistical independent-samples t-test. The outcomes of the test were presented in Table 20 below. According to the results of the findings, there was a statistically significant difference between the students who had education in state universities (N=801) and foundation universities (N=309) in four skills as their p-values were the same which was .000 and they were below .05.

Table 20. *Mann Whitney U Test Statistics for University Type*

	Test Statistics ^a			
	Writing Mean	Reading Mean	Speaking Mean	Listening Mean
Mann-Whitney U	118296.000	117963.000	120996.500	122975.500
Z	-6.806	-6.869	-6.323	-5.969
Asymp. Sig. (2-tailed)	.000	.000	.000	.000

a. Grouping Variable: University type

It is possible to infer that there is a significant difference between the university types being investigated. Table 21 below indicates the direction of this difference. According to the results here, the ranks table of the test was observed, and it is apparent that the participants in foundation universities had more challenges than the participants in state universities in all four skills during their education through EMI according to the results of the mean ranks in four skills. The students in foundation universities indicated reading as the most challenging skill (mean rank=694.03) while the students in state universities considered listening as the most problematic skill (mean rank =548.27). It is possible, in this case, to deduce that students in foundation universities had the most difficulty in reading during working out the meaning of difficult words whereas students

in state universities had the most challenges in understanding their classmates' accents when listening to them. The results of the least challenging skills for both university types, however, are just reversed. The least challenging academic linguistic skill was reading skill for state university students (mean rank= 548.27) when it was listening skill for foundation university students (mean rank= 681.18).

Table 21. Mann Whitney U Test Statistics Ranks Table for University Type

Ranks				
	University type	N	Mean Rank	Sum of Ranks
Writing	State university	801	548.69	439497.00
	Foundation university	390	693.18	270339.00
	Total	1191		
Reading	State university	801	548.27	439164.00
	Foundation university	390	694.03	270672.00
	Total	1191		
Speaking	State university	801	552.06	442197.50
	Foundation university	390	686.25	267638.50
	Total	1191		
Listening	State university	801	554.53	444176.50
	Foundation university	390	681.18	265659.50
	Total	1191		

c) Field of Study: In order to answer this question, sample data was collected according to the University of Oxford's Divisions and Departments framework (2020) which divided the department into four namely as Humanities, Mathematical, Physical and Life Sciences, Social Sciences and Medical Sciences.

As there are four independent variables (field of study in this case) and a dependent variable (listening, speaking, reading and writing) which has more than one sub-category

namely Humanities, MPLS, Social Sciences and Medical Sciences, Multivariate Analysis of Variance (MANOVA) test was used. MANOVA is a statistical method used in order to decide if there is a relationship between the independent variables (Humanities, MPLS, Social Sciences and Medical Sciences here) and multiple dependent variables (four skills) and to determine whether there are any statistically significant differences among the means of the independent groups (Humanities, MPLS, Social Sciences and Medical Sciences here) on the multiple dependent variables (four skills here). As the values of skewness and kurtosis in this research fall in the range of -1.5; +1.5 interval (see Table 17) and this figure can be accepted as the sign of a normal distribution of the variables, MANOVA can be conducted for finding the relationship between these variables. According to Tabachnick, and Fidell (2013), "If the assumption of multivariate normality is not met, but skewness and kurtosis are within acceptable limits, then MANOVA can still be used, particularly when sample sizes are large" (p. 359). They (2013) assume that the data sample is normally distributed when the values of skewness and kurtosis for the normality of the research fall between the range of -1.5; +1.5 and even -1.788; +1.788 when divided skewness and kurtosis by their standard error (p.80). As MANOVA is used with normally distributed data as a parametric test and there is not a perfect alternative in non-parametric analysis corresponding MANOVA dealing with manifold hypotheses simultaneously, it is used in this research to precisely examine the effects of four groups of independent variables on the multiple (four) dependent variables (Hair et al., 2010). In order not to lead any mistake in the interpretation of the findings, the non-parametric equivalent analysis, Kruskal-Wallis Test was also conducted to check the pairwise comparisons of faculty across the writing, speaking, listening and reading means separately in order. The test was run four times to see the pairwise comparisons in each skill. It was seen that two alternative tests still yielded the same results even if there were some minor numerical differences. However, MANOVA was preferred to abridge too long and too many tables to comprehend and comment as MANOVA presented the whole picture of the results with four independent groups and four dependent variables all in a table.

Table 22. MANOVA (Multivariate Analysis of Variance) for the Field of Study Division

Multivariate Tests^a

Effect		Value	F	Hypothesis df	Error df	Sig.	Partial Eta Squared
Intercept	Pillai's Trace	.943	4915.950 ^b	4.000	1184.000	.000	.943
	Wilks' Lambda	.057	4915.950 ^b	4.000	1184.000	.000	.943
	Hotelling's Trace	16.608	4915.950 ^b	4.000	1184.000	.000	.943
	Roy's Largest Root	16.608	4915.950 ^b	4.000	1184.000	.000	.943
Faculty	Pillai's Trace	.050	4.980	12.000	3558.000	.000	.017
	Wilks' Lambda	.951	5.009	12.000	3132.861	.000	.017
	Hotelling's Trace	.051	5.030	12.000	3548.000	.000	.017
	Roy's Largest Root	.038	11.223 ^c	4.000	1186.000	.000	.036

a. Design: Intercept + Faculty

b. Exact statistic

c. The statistic is an upper bound on F that yields a lower bound on the significance level.

Table 22 above presents the results of MANOVA for the Field of Study Division. According to the table, the p- value was below the significance value of .00 which indicates there is a statistically significant difference among the variables.

In order to test whether the variances of the dependent variables are equal across the groups, Levene's Test is used to control the homogeneity of variance assumption in MANOVA (Hair et al., 2010, p. 432; Tabachnick & Fidell, 2013, p. 350). Table 23 below shows the outcomes of Levene's Test of Equality of Error Variances in Faculty Departments.

Table 23. *Levene's Test of Equality of Error Variances in Faculty Departments*

Levene's Test of Equality of Error Variances^a

		Levene			
		Statistic	df1	df2	Sig.
Writing Mean	Based on Mean	4.798	3	1187	.003
Reading Mean	Based on Mean	4.689	3	1187	.003
Speaking Mean	Based on Mean	5.953	3	1187	.000
Listening Mean	Based on Mean	2.395	3	1187	.047

Tests the null hypothesis that the error variance of the dependent variable is equal across groups.

a. Design: Intercept + Faculty

According to the results of the Levene's Test of Equality of Error Variances, the p-value of Levene's test is less than the significance level ($p < 0.05$). Therefore, the null hypothesis of equal variances across groups is rejected and the assumption of the variances of four skills being equally distributed is violated (Field, 2013, p. 753). As the variances are not equal, the post hoc test was chosen accordingly as Dunnet's C in order to determine which departments in this research differ significantly from each other (Tabachnick & Fidell, 2013, p. 658). Table 24 below shows the outcomes of Dunnet C test.

Table 24. Dunnett's C Post Hoc Test Results

Multiple Comparisons						
Dunnett C						
Dependent Variable	(I) Faculty	(J) Faculty	Mean Difference (I-J)	Std. Error	95% Confidence Interval	
					Lower Bound	Upper Bound
Writing Mean	Humanities	MPLS	.094	.076	-.104	.293
		Social Sciences	-.115	.081	-.326	.096
		Medical Sciences	-.281	.116	-.584	.022
	MPLS	Humanities	-.094	.076	-.293	.104
		Social Sciences	-.209*	.053	-.348	-.070
		Medical Sciences	-.376*	.098	-.634	-.117
	Social Sciences	Humanities	.115	.081	-.096	.326
		MPLS	.209*	.053	.070	.348
		Medical Sciences	-.166	.102	-.434	.101
	Medical Sciences	Humanities	.281	.116	-.022	.584
		MPLS	.376*	.098	.117	.634
		Social Sciences	.166	.102	-.101	.434
Reading Mean	Humanities	MPLS	.173	.075	-.024	.370
		Social Sciences	-.016	.080	-.225	.193
		Medical Sciences	-.248	.106	-.524	.028
	MPLS	Humanities	-.173	.075	-.370	.024
		Social Sciences	-.189*	.051	-.323	-.055
		Medical Sciences	-.421*	.086	-.645	-.196
	Social Sciences	Humanities	.016	.080	-.193	.225
		MPLS	.189*	.051	.055	.323
		Medical Sciences	-.232	.090	-.467	.004
	Medical Sciences	Humanities	.248	.106	-.028	.524
		MPLS	.421*	.086	.196	.645
		Social Sciences	.232	.090	-.004	.467

Speaking Mean	Humanities	MPLS	-.020	.089	-.251	.211
		Social Sciences	-.137	.092	-.378	.103
		Medical Sciences	-.312	.125	-.639	.014
	MPLS	Humanities	.020	.089	-.211	.251
		Social Sciences	-.118	.057	-.266	.031
		Medical Sciences	-.292*	.102	-.559	-.026
	Social Sciences	Humanities	.137	.092	-.103	.378
		MPLS	.118	.057	-.031	.266
		Medical Sciences	-.175	.105	-.449	.099
	Medical Sciences	Humanities	.312	.125	-.014	.639
		MPLS	.292*	.102	.026	.559
		Social Sciences	.175	.105	-.099	.449
Listening Mean	Humanities	MPLS	.226*	.082	.014	.439
		Social Sciences	-.023	.086	-.246	.201
		Medical Sciences	-.121	.111	-.412	.170
	MPLS	Humanities	-.226*	.082	-.439	-.014
		Social Sciences	-.249*	.055	-.391	-.107
		Medical Sciences	-.348*	.089	-.582	-.113
	Social Sciences	Humanities	.023	.086	-.201	.246
		MPLS	.249*	.055	.107	.391
		Medical Sciences	-.099	.093	-.343	.145
	Medical Sciences	Humanities	.121	.111	-.170	.412
		MPLS	.348*	.089	.113	.582
		Social Sciences	.099	.093	-.145	.343

Based on observed means.

*. The mean difference is significant at the .05

The results of Dunnet C test as seen in Table 24 above demonstrate that:

1. difference in terms of challenges students encounter between MPLS and Social Studies, MPLS and Medical Studies in writing skill.

2. There is a statistically significant difference concerning the challenges students experience between MLPS and Social Studies, between MLPS and Medical Studies in reading skill.
3. In speaking skill, Medical Sciences and MLPS departments statistically differ significantly.
4. As for the difficulties EMI students have in listening skill, there is a statistical significance between Humanities-MPLS, MPLS-Social Studies and MPLS-Medical Sciences.

In order to make wholesome comments upon these pairs and to see the direction of the differences, it was looked at the table of descriptive statistics for the means of four skills across the pairwise departments. Table 25 below presents the results of descriptive statistics for four skills' means across the pairwise departments.

Table 25 below displayed that students in MLPS departments ($\bar{x}=3.37$) have more challenges than their counterparts in Social Studies ($\bar{x}=3.58$) and Medical Sciences ($\bar{x}=3.75$) in writing skill. In reading, MLPS students ($\bar{x}=3.43$) experience more difficulties when compared to the ones in Social Sciences ($\bar{x}=3.62$) and the ones in Medical Sciences ($\bar{x}=3.87$). As for speaking skill, the participants in MLPS ($\bar{x}=3.43$) confront with more difficulties than the participants in Medical Sciences ($\bar{x}=3.72$). The attendants in MLPS ($\bar{x}=3.67$) encounter the most difficulty in listening skill in comparison to the attendants in Humanities ($\bar{x}=3.85$), Social Sciences ($\bar{x}=3.87$) and Medical Sciences ($\bar{x}=3.97$) respectively.

Table 25. *Descriptive statistics for the means of four skills across the pairwise departments*

Descriptive Statistics				
	Faculty	Mean	Std. Deviation	N
Writing Mean	Humanities	3.47	.89	167
	MPLS	3.37	.77	566
	Social Sciences	3.58	.80	356
	Medical Sciences	3.75	.94	102
	Total	3.48	.82	1191
Reading Mean	Humanities	3.62	.89	167
	MPLS	3.45	.74	566
	Social Sciences	3.64	.78	356
	Medical Sciences	3.87	.81	102
	Total	3.57	.79	1191
Speaking Mean	Humanities	3.41	1.04	167
	MPLS	3.43	.87	566
	Social Sciences	3.55	.84	356
	Medical Sciences	3.72	.96	102
	Total	3.49	.90	1191
Listening Mean	Humanities	3.85	.96	167
	MPLS	3.62	.81	566
	Social Sciences	3.87	.81	356
	Medical Sciences	3.97	.83	102
	Total	3.76	.84	1191

d)Type of EMI: For the purpose of looking at whether there is a difference between the types of EMI in having linguistic-based challenges in EMI context, the non-parametric, Mann Whitney U Test was conducted as a counterpart for the independent-samples t-test as the data was not normally distributed (Dörnyei, 2007, p. 230). Table 26 indicates the results of the Mann Whitney U Test.

Table 26. *The Man Whitney U Test Results for EMI Type*

Test Statistics^a				
	Writing Mean	Reading Mean	Speaking Mean	Listening Mean
Mann-Whitney U	108005.500	118220.000	128980.000	112887.000
Z	-8.838	-7.014	-5.087	-7.969
Asymp. Sig. (2-tailed)	.000	.000	.000	.000

a. Grouping Variable: EMI type

According to the results of the Mann Whitney U Test, .05 in all four skills, and which means that there is a statistically significant difference between partial and full EMI programs within the scope of the difficulties perused all four skills ($p < 0.05$). To find out which EMI type significantly differs from each other with regard to the mean, the ranks table of them regarding the four skills can be referred. In Table 27 below, the mean rank and sum of rank scores are displayed.

Table 27. *Mann Whitney U Test Statistics Ranks Table for EMI Type*

Ranks				
	EMI type	N	Mean Rank	Sum of Ranks
Writing Mean	Partial EMI	396	471.24	186611.50
	Full EMI	795	658.14	523224.50
	Total	1191		
Reading Mean	Partial EMI	396	497.04	196826.00
	Full EMI	795	645.30	513010.00
	Total	1191		
Speaking Mean	Partial EMI	396	524.21	207586.00
	Full EMI	795	631.76	502250.00
	Total	1191		
Listening Mean	Partial EMI	396	483.57	191493.00
	Full EMI	795	652.00	518343.00
	Total	1191		

According to the ranks table above, 396 of all the students had partial EMI in their majors while 795 of them had full EMI in their majors. The table above indicates that the overall mean rank scores of partial EMI students is lower than full EMI students in having challenges in four skills, which indicated that EMI students have more challenges compared to full EMI students in four skills. In partial EMI, writing skill (mean rank = 471.24) is the most challenging area for the students while speaking (mean rank = 524.21) is the least challenging area for them. It is, however, the speaking skill (mean rank = 631.76) that full EMI students have the most difficulty among four skills while writing skill (mean rank = 658.14) is the least challenging area for them.

e) Preparatory Class: Students were asked whether they took preparatory classes before their EMI education or not. According to the results, 875 of them took preparatory class while 316 of them did not take preparatory classes and commenced their EMI majors directly. This part of the RQ2 calls into question the findings regarding whether there was a significant difference between the students who took preparatory class and the ones who did not regarding the academic language-related challenges in four skills. In order to find out the relevant answer, Mann-Whitney U Test was utilized as a result of the not normally distributed data set. Table 28 below summarizes the Mann-Whitney U Test Results for Preparatory Class.

Table 28. *The Mann Whitney U Test Results for Preparatory Class*

	Test Statistics ^a			
	Writing Mean	Reading Mean	Speaking Mean	Listening Mean
Mann-Whitney U	88394.500	79896.000	77100.500	82155.500
Z	-9.517	-11.143	-11.676	-10.713
Asymp. Sig. (2-tailed)	.000	.000	.000	.000

a. Grouping Variable: Preparatory

According to the results in Table 28 above, the p-value for four skills was below 0.05 displaying that there was a statistically significant difference between the two groups. With the aim of finding out in which skill each group has the most or the least challenge, the respecting Mann Whitney U Test Statistics Ranks table for preparatory class were submitted below (see Table 29). According to the overall ranks mean in four skills, it is the ones who took preparatory classes had more difficulty in four language constructs than the ones who did not take preparatory class education. While the students who took preparatory class experienced the most challenge in speaking skill (mean rank =526.11) during their EMI lessons, they had the least challenge in writing skill (mean rank =539.02). However, the differences among the degrees of mean ranks through the four skills in these students who took preparatory class were rather slight. When it comes to the students not taking preparatory class, they experienced the most difficulty in writing skill (mean rank =753.77) whereas they had the least difficulty in speaking skill (mean rank =789.51) in their EMI context.

Table 29. *Mann Whitney U Test Statistics Ranks Table for Preparatory Class*

Ranks				
	Preparatory	N	Mean Rank	Sum of Ranks
Writing Mean	Yes	875	539.02	471644.50
	No	316	753.77	238191.50
	Total	1191		
Reading Mean	Yes	875	529.31	463146.00
	No	316	780.66	246690.00
	Total	1191		
Speaking Mean	Yes	875	526.11	460350.50
	No	316	789.51	249485.50
	Total	1191		
Listening Mean	Yes	875	531.89	465405.50
	No	316	773.51	244430.50
	Total	1191		

f) Year of Study: The subcategory of RQ2 investigates whether the degree of linguistic challenges in four skills students experience varies according to the students' year of study. As the data set was not normally distributed, a non-parametric test was used to investigate this question. The Kruskal Wallis H test, a one-way univariate analysis of variance (ANOVA)'s non-parametric equivalent, was conducted with the purpose of determining the students' year of study's statistical impact on students' experiencing challenges in four skills during their EMI. Table 30 below shows the results of The Kruskal Wallis H test for year of study.

Table 30. *The Kruskal Wallis H test for Year of Study*

Test Statistics ^{a,b}				
	Writing Mean	Reading Mean	Speaking Mean	Listening Mean
Kruskal-Wallis H	11.360	11.349	8.013	28.343
Df	5	5	5	5
Asymp. Sig.	.045	.045	.156	.000

a. Kruskal Wallis Test

b. Grouping Variable: Year

According to Table 30 above, the p-value was below 0.05 in writing ($p = .045$), reading ($p = .045$) and listening ($p = .00$) skills, but it was above 0.05 in speaking skill ($p = .156$). These results display that there is a statistically significant difference between the students' year of study and the academic language-related challenges they had in their EMI majors in three language skills except for speaking skill ($p = .156$).

With the purpose of demonstrating the difference in pertinent with the year of study, Table 31 below shows the mean ranks of for the year of the study in four skills. According to the table below, there is a significant difference between the mean ranks and the year of study. Aside from the speaking skill, the mean rank rose as the year of study ascended (see Table 31) in three skills namely writing, reading and listening. It

means that the challenges students had in these three skills decreased as the year of the study ascended except for the speaking skill. According to the mean of the ranks through years of the study, it is the reading skill ($\bar{x}=553.91$) the students had the most difficulty in their first year of study. However, there is a rather slight difference in students' facing difficulty among other skills, especially with writing skill ($\bar{x}=556.39$). It is the listening skill ($\bar{x}=556.60$) the participants had the most difficulty in the second year of study. Its mean rank is too near to the mean rank of speaking skill ($\bar{x}=556.65$). In the third year of study, it is the listening skill ($\bar{x}=579.97$) students had the most difficulty with. In the fourth year of study, it is the reading ability ($\bar{x}=610.47$) in English students had the greatest challenge in EMI. The mean rank of reading is too near to the mean rank of listening mean ($\bar{x}=612.16$), showing that there was a little difference in terms of difficulty students experienced between the reading and listening skill in their fourth year of study. Speaking ($\bar{x}=637.96$) is the most challenging skill for the students who are in their fifth year of study. The difference between speaking and reading skill ($\bar{x}=638.67$) is rather slight. In the sixth year of study, the students who were in medicine faculty experienced the most difficulty in speaking skill ($\bar{x}=582.05$). This demonstrates that as the years ascended in number, the challenges students faced generally descended. There was just an exception to this as the results of listening skills in the first year ($\bar{x}=584.79$) and the second year ($\bar{x}=556.60$) was the exact opposite. However, the four-skill challenges they encounter still did not disperse throughout their education life as the academic content of related study got harder year by year. The least challenging skill for the students who are in their first year of study was listening ($\bar{x}=584.79$). In the second year, reading ($\bar{x}=586.13$) is less challenging than the other skills. Speaking ($\bar{x}=606.54$) is the least challenging area for EMI students in their third grade while the difference between the speaking ($\bar{x}=606.54$) and reading ($\bar{x}=606.03$) is rather slight. Writing ($\bar{x}=635.59$) is easier than the other skills for EMI students in their fourth year of study. Listening is the least challenging skill for EMI students who are in their fifth ($\bar{x}=716.13$) and sixth years of study ($\bar{x}=918.28$).

Table 31. *The Kruskal Wallis H Test Ranks Table for Year of Study in Four Skills*

Ranks			
	Year	N	Mean Rank
Writing Mean	1	252	556.39
	2	269	570.66
	3	258	593.01
	4	346	635.59
	5	46	650.24
	6	20	664.83
	Total	1191	
Reading Mean	1	252	553.91
	2	269	586.13
	3	258	606.03
	4	346	610.47
	5	46	638.67
	6	20	781.18
	Total	1191	
Speaking Mean	1	252	577.95
	2	269	556.65
	3	258	606.54
	4	346	627.10
	5	46	637.96
	6	20	582.05
	Total	1191	
Listening Mean	1	252	584.79
	2	269	556.60
	3	258	579.97
	4	346	612.16
	5	46	716.13
	6	20	918.28
	Total	1191	

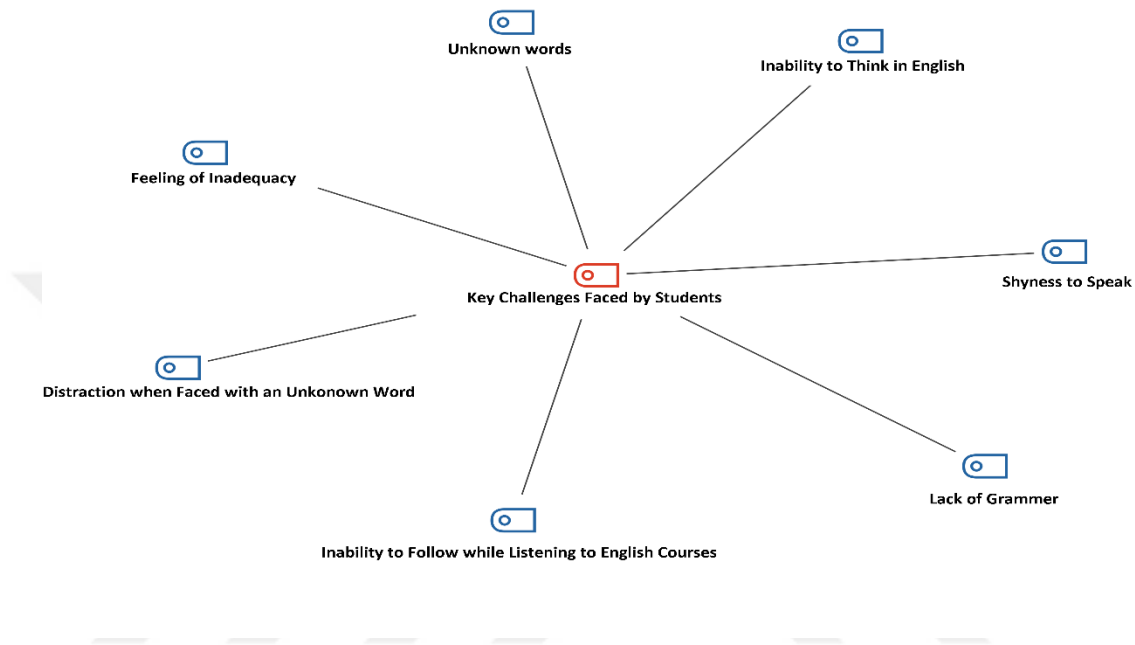
4.2. ANALYSIS OF SEMI-STRUCTURED INTERVIEW

With the aim of finding an answer to the students' perceptions on language-related challenges they have in their EMI classes, fifteen students were interviewed. This research utilized five interview questions to elicit students' viewpoints on linguistic challenges in EMI classrooms regarding different variables including gender, type of university, type of department, type of EMI, year of study. The qualitative data for the present research was collected through a semi-structured interview and the findings of the pertinent data were analyzed qualitatively through content analysis method. With this aim, Maxqda programme, which is used for qualitative and mixed-method research, was utilized in this research. The codes and themes about the linguistic challenges of the students were clearly defined through Maxqda programme with respect to the thematic analysis and codes, themes and patterns was obtained according to the frequency of their recurring in the interviews.

Three themes have emerged from the data obtained from the semi-structured interview questions by using Maxqda programme. The first theme is about “key challenges faced by students”, the second theme is “challenges with studying an EMI programme” and the third theme is “ways to deal with challenges”. These themes have codes related to them as subcategories.

The first theme “key challenges faced by students” and the relevant codes are given as Figure 9 below. According to the findings of semi-structured interview, seven codes appear under the first theme as the main challenges students face in their EMI context. These challenges stem from unknown words, inability to think in English, shyness to speak, lack of grammar, inability to follow while listening to English courses, distraction when faced with an unknown word and feeling of inadequacy according to the reports of the students.

Figure 9. Theme 1: Key Challenges Faced by EMI Students



The unknown words cause understanding problems the related context by the students and they stated they lost their concentration when they came across an unknown word in EMI courses. Some sample answers from the participants are given below:

[P7]: "[...] When it comes to listening, I easily got distracted when exposed to words whose meanings I didn't know, and I had trouble focusing on the entire topic."

[P8]: "[...] In my opinion, because we continue our lives using the Turkish language - mainly in our conversations, in what we watch, in our relationships, and the geography we are in - following lessons in English is quite difficult. It is hard to catch up when you miss something and to understand the sentence as a whole. It requires full focus."

The students cannot think in English when they want to express themselves in EMI classes. Students expressed their difficulties as follows:

[P2]: " [...] *I can't think in English, so I'm having difficulty. I always feel the need to translate the given sentence, so it makes it harder for me.*"

[P1]: "[...] *That's because, as I mentioned in the previous question, I can't think in English. I try to construct a sentence in my mind in Turkish and translate it into English.*"

Students reported they felt shy to speak in English during EMI courses before the lecturers and their classmates. They may probably feel unconfident to speak, may be afraid of making mistakes or being judged by their classmates in their EMI courses. These students disclosed their viewpoints as follows:

[P1]: "[...] *When I started studying EMI in HE, I was very tense and anxious. I was afraid of making mistakes or saying something wrong, so I would first formulate the sentence correctly in my mind and then say it. However, as I gradually got used to it, I became more relaxed and stopped worrying as much.*"

[P11]: "[...] *I can't ask questions comfortably, I have to suppress my curiosity. Most of the time, I ask questions in Turkish.*"

Some students do not have enough required knowledge about grammatical structures in English and this causes them to have some problems in four skills during EMI courses. The views of the participants below are in the same line:

[P1]: " [...] *I had difficulty in reading English, I thought the text in my hand was just a set of plain sentences, and since it was about medicine, it was hard to*

understand."

[P10]: *"[...] There are some rules for writing and I'm not proficient in all of those rules. That's why I struggle a little bit more compared to others when it comes to writing."*

[P12]: *"[...]Especially when reading articles, I sometimes miss the whole sentence in long sentences even though I know the meanings of the words."*

[P12]: *"[...]I can make grammar mistakes in the writing part."*

[P13]: *"[...]I can understand, but when it comes to writing, our academic English is insufficient for the academic thesis and article format that we need, even though we can use a simple language to express a writing or research on our own."*

Participants also reported they had difficulty in following the lectures especially at the beginning of their EMI majors. The reason behind it may be that getting accustomed to listening requires a certain level of exposure beforehand. Some responders indicated their thoughts in the same vein:

[P1]: *"[...]When I was in the first grade, I didn't think my English was sufficient. But then, of course, I realized that I started to understand English by listening and getting familiar with the language. At first, I found it very difficult to listen because I thought I wouldn't be able to understand. As a result, I experienced a lot of disconnections in class."*

[P5]: *"[...]It's very difficult to go back to the class again when you miss a part while listening to the class."*

[P7]: "[...] I often had difficulty understanding lessons taught in English, depending on the difficulty level of the lessons, especially in cognitive subjects and in lessons that were hard to understand. Additionally, I tried to lower the difficulty level by obtaining Turkish resources, and as a result, I did not experience any decrease in my success level."

Moreover, some of the responders said that they distracted from the lessons when they faced with an unknown word and felt the need to look at the meaning of the word to catch up with the lesson. Participants may encounter challenges in understanding English texts, materials and academic terms due to their limited knowledge of English vocabulary on certain topic of their majors. Students shared their ideas regarding this point as below:

[P1]: "*[...] I had difficulty understanding lessons taught in English, and that's why I used a dictionary.*"

[P2]: "*[...] I don't struggle much with the way English lessons are conducted anymore. Since similar or even the same words are used in the lessons, I can easily understand the lesson. However, there are still some words I don't know, and in those cases, I mostly use translation applications. Sometimes I ask the teacher during the lesson.*"

[P1]: "*[...] If I have difficulty understanding the lesson, I try to identify the words that I don't know related to the topic. Sometimes I have a vocabulary deficiency in some topics.*"

[P7]: "*[...] Compared to previous years, I can understand the lessons much more comfortably now, but I still have difficulty in understanding lessons with a high level of difficulty. To overcome this, I need to read from different sources for those lessons.*"

Additionally, I take note of the Turkish translations of the sentences I don't understand and memorize the words whose meanings I don't know."

[P7]: *"[...]We can add the following regarding writing; in terms of making comments in writing, I had difficulty expressing myself fully because the writing language was English and my vocabulary was not very strong. As a solution to this, it was helpful to do research beforehand related to the topic and to practice writing to be familiar with the words."*

[P8]: *"[...]Sometimes there are complex words. For example, just reading the English definition of the efficiency concept we saw in microeconomics class was not enough. I had to look at its Turkish meaning and examples too. So sometimes I need to look at the Turkish equivalents and academic sources related to that field."*

[P9]: *"[...] The problems I may encounter while reading in English usually arise from lack of vocabulary."*

[P12]: *"[...]If I hear the terms used in the lesson for the first time, it takes time to understand those terms and fully grasp the topic. Sometimes my vocabulary is not sufficient."*

[P15] *"[...] I have difficulty with scientific terms, but I learn them after a few repetitions."*

Additionally, students' perceptions about their inadequacy in English cause also them to feel difficulties in their EMI majors in four linguistic skills' different areas. Some of the opinions around these feelings of inadequacy are expressed by the interview participants in the following manner:

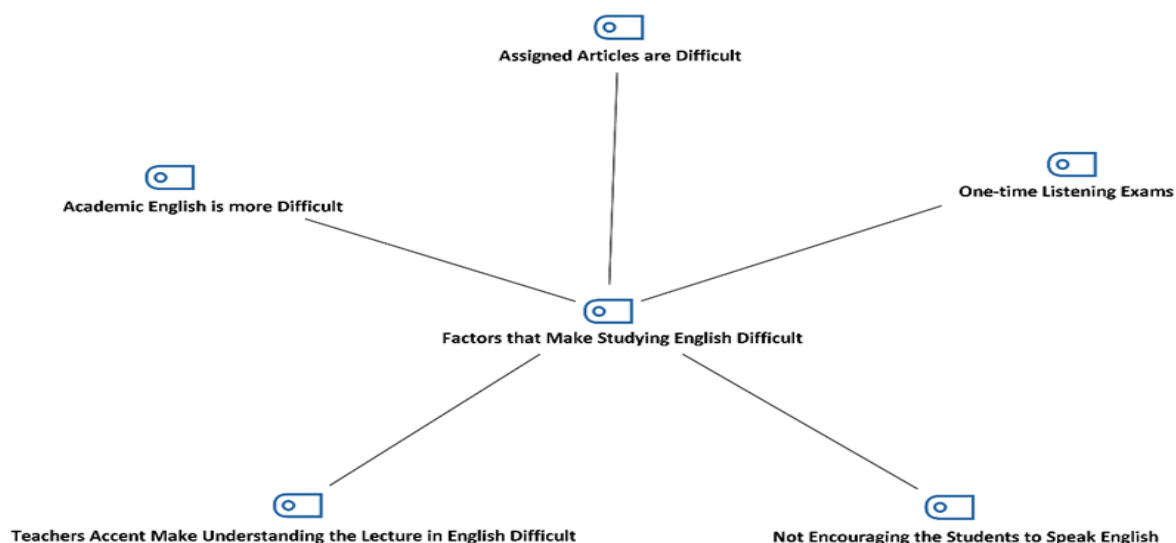
[P1]: "[...]As I mentioned when I was in first grade, I thought my English level was not sufficient. But later, of course, with time, I realized that I could understand English by listening to lessons."

[P4]: "[...] I was always aware of the deficiency due to English education, and I was experiencing the difficulty of this a lot."

[P15]: "[...] I need to learn more English, as I find myself insufficient in situations where I have to speak English."

The second theme is about the factors that make EMI harder for the students during their courses in their majors. The relevant codes for these factors are “assigned articles are difficult”, “academic English is more difficult”, “one-time listening exams”, “teachers’ accent make understanding the lecture in English more difficult” and “not encouraging the students to speak in English”. Figure 10 below shows the second theme and related codes for this theme.

Figure 10. Theme 2: Factors that make Studying English Difficult



For the first code, students stated that they were not encouraged to speak in English during EMI courses as their lecturers showed tolerance when they applied to Turkish. To exemplify this situation:

[P1]: *"[...] When I started college, my speaking skills deteriorated because the compulsory environment that forced me to speak was gone, and I had no one to speak with."*

[P7]: *"[...]As for speaking, I frequently had problems with speaking fluently because our curriculum did not include any speaking-based practice classes, and our teachers were very tolerant when we couldn't speak English, which led us to speak more Turkish and not work on improving our speaking skills."*

Secondly, a participant conveyed the challenge experience in listening exams as below:

[P4]: *"[...] In Turkey, generally in preparatory schools, they always played what we listened to again. But it wasn't like that in other schools like METU. For example, in exams, as well as in daily classes, we were only able to listen to something once, and we had to write down whatever we heard. There were also questions and what we listened to were usually not short, but at least five to ten minutes long. I remember that this was a bit challenging for me."*

Another problem they confronted in EMI classes is that the related articles assigned to them are challenging. As an example to this situation, this participant's opinion below may be given:

[P4]: *"[...] If I move on to the reading part, we were reading a lot of long articles and we had to write them again in the form of a new article in our own*

language, and to be honest, what I remember from that time is, what is the article about? What is it related to? Focusing on that was very difficult for me. After a certain point, the connection was lost in me. Focusing was very difficult because the language was also very heavy. If I couldn't understand a part, everything else was lost on me."

Participants found academic English harder than normal English courses. Responders expressed their viewpoints upon this, as shown below:

[P4]: *"[...] Even if a person's English is good, academic English is a bit different inevitably. You need to be familiar with the terms used in academic English. A person's everyday English-speaking ability may be quite good, but it may not be very effective in school lessons."*

P8: *"[...] I don't have difficulty with vocabulary outside of academic concepts related to my field, and I don't allocate extra study time for this."*

The lecturers' accents also pose some challenges for the students as their communication skills, pronunciation or accent may be misunderstood by the students in some cases. Several respondents indicated their thoughts as in the example:

[P9]: *"[...] The problems we experience are generally not related to the language itself. The accent and language proficiency of the instructor who teaches the class can sometimes create issues. To overcome this, we may ask the instructor to briefly summarize the topic in Turkish."*

[P4]: *"[...] Now our teachers were Turkish, and we even had a few Russian teachers. We also had teachers from different backgrounds. Our classes were already quite challenging, and with the addition of the teachers' accents, understanding the lessons became even more difficult. My attention span in class was already not very*

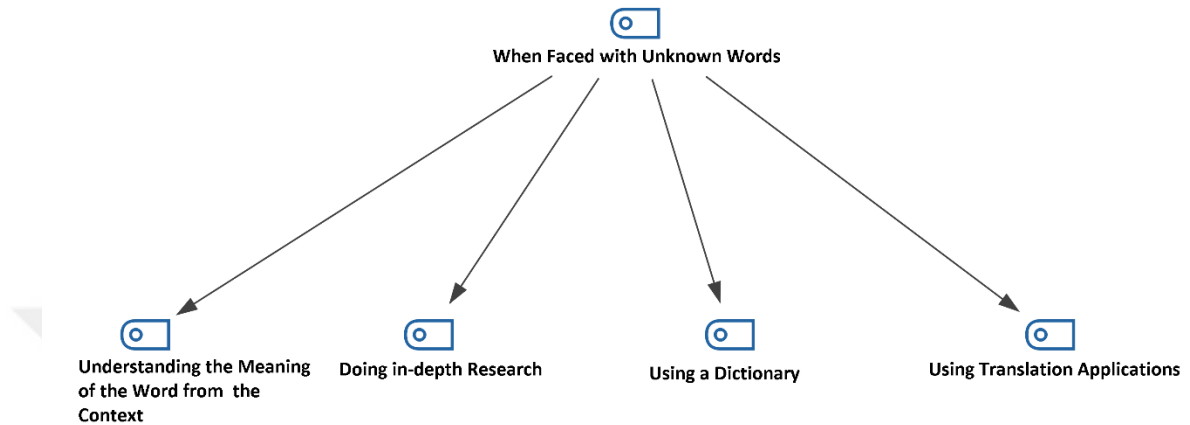
long."

[P10]: *"[...] The biggest challenge I faced was the inability of some teachers to use English effectively. They could sometimes swallow words, and we couldn't understand their full meanings. They could also break the rules and create different sentences, which made it difficult for us to understand the lesson. We ask them to repeat or clarify, and some of them accept it, while others wait until the end of the class to ask questions, which causes the topics to slip away. This was the biggest difficulty I experienced."*

The third theme emerged as a pattern for the ways to deal with the linguistic challenges students encountered in their EMI courses. Students follow these ways to take steps in addressing the problems so that they can develop their language proficiency in EMI courses and prosper in their academic pursuits. The main themes appearing under this pattern are that “when faced with unknown words”, “motivation for English”, “overcoming challenges with language skills”. These sub-themes also have codes under their headings.

The first sub-theme is about the strategies for the students to overcome the difficulties they face “when faced with unknown words”. As seen in Figure 11, “understanding the meaning of the word from the context”, doing in-depth research”, “using a dictionary” and “using translation applications” are the main codes appeared as a result of the analysis.

Figure 11. *First Sub-theme: When Faced with Unknown Words*



The following statements are a few examples on how students try to overcome the challenges when they confront with unknown words.

Some students indicated they inferred the meanings of the unknown words from the context, as the following examples:

[P3]: *"[...] If I have difficulty understanding something, I look directly at its meaning. Usually, I can deduce the meaning from the sentence or context, but if I want to be sure, I check it. In some of our classes, we encounter very technical terms, so it's important to not only understand what is being said but also to understand what it means."*

[P6]: *"[...] Audio somehow or listening to music even was helping when, but it's important to note that not listening, listen just paying attention to what it says and trying to guess the words, because it is hard at first place to catch all those words but in time you can."*

[P8]: *"[...] I can understand even the words I don't know by inferring from the whole sentence, or at worst, I use translation."*

The same responder also indicated doing research to understand the meanings of the unknown words, as following:

[P8]: *"[...] Sometimes there are complex words. For example, when we saw the concept of efficiency in the microeconomics class, just reading the English definition was not enough. I had to look at its Turkish meaning and examples too. So sometimes I need to look at Turkish equivalents and Turkish academic sources related to my field."*

Students also referred to dictionaries to find the meanings of the words they do not know when they do not infer it from the context. Some of the sample answers given by the students are as follows:

[P1]: *"[...] I had difficulty understanding the lessons that were taught in English, and in this regard, I used a dictionary. Of course, I also researched their Turkish equivalents on the internet and searched for the meanings of medical terms."*

[P7]: *"[...] If there is a word I want to say and I don't know its English equivalent, I immediately look it up in a translator and use it in the sentence. I especially used this tactic a lot during the summer after my high school preparation education, and I saw its benefits in the next academic year."*

[P3]: *"[...] If I have difficulty understanding something, I look directly at its meaning."*

Additionally, most students stated they used translation applications for the

words they do not know their meanings.

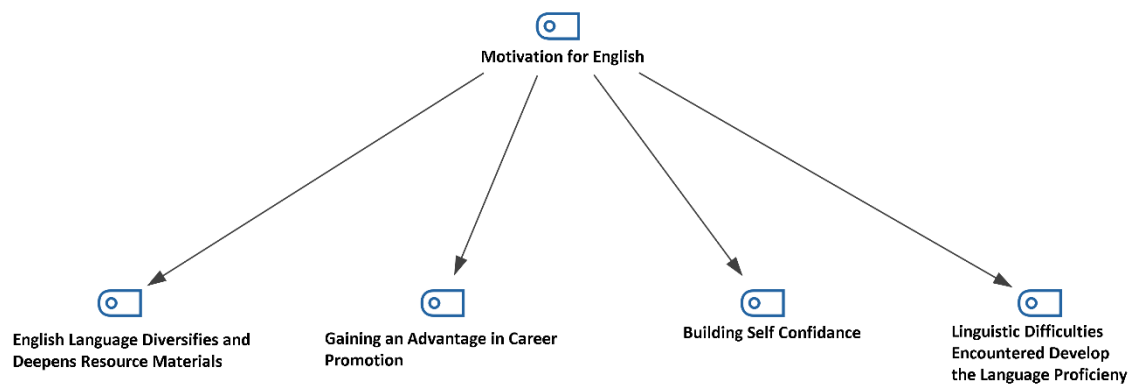
[P2]: *"[...] But there are still times when I come across words I don't know, and in those cases, I mostly use translation applications."*

[P10]: *"[...] But the most common source I rely on in this regard is the internet. There are open dictionaries, Google translate and translation tools. These resources are really helpful."*

[P14]: *"[...] Translations of incomprehensible sentences can be supported by researching from other sources or using a dictionary."*

The second sub-theme is “motivation for English” displaying the students’ drives for studying in an EMI programme. The related codes for the theme and the related examples are provided with Figure 12 and the examples below respectively.

Figure 12. *Second Sub-theme for Motivation for English*



The first code is that English language provides the students with the chance for the entrance to a high number of resources and materials published in English related to their field of study. Several students expressed their viewpoints, as followings:

[P1]: *"[...] After graduating, I realized that my knowledge accumulation is not less than that of someone who studied in Turkish, on the contrary, it is better, because we were able to read and follow foreign sources directly. Yes, understanding some things in my mother tongue was easier, but I was also able to research and learn them from the internet."*

[P1]: *"[...] Yes, I think I was able to gain academic knowledge related to my field by receiving education in English. Thanks to English education, I improved my English and when I read English sources related to my department, I can reach sufficient information. Using English sources instead of Turkish sources is much more beneficial both in terms of language development and contribution to my classes."*

[P8]: *"[...] I believe that English education provides me with academic knowledge related to my field. It enables me to learn not only the Turkish-specific aspects of the information but also the international dimension of the subject matter with English terminology."*

[P13]: *"[...] The problem is not English, but rather the lack of research on process engineering in Turkey. For example, there are few or inadequate sources about the price of a catalyst or the production process of synthetic fabrics in Turkish. The solution to this problem is to rely on YouTube videos, MATLAB, and UNISIM computer-aided programs and processes, which are often created by Indian and American university students. Additionally, unfortunately, many academic terms do not have Turkish equivalents yet."*

[P13]: *"[...] I consider English education to be especially valuable in the field of social sciences. Most sources in the literature are in English or have been translated into English. Additionally, learning these terms in the language that is widely used in academia can prevent misunderstandings in the meaning of terms in different languages. For these reasons, English education is extremely effective both in terms of accessing the literature and understanding the content."*

Students also indicated that they had higher and better advantages for getting a good career position in their field after their graduation when compared to the students who took their education in TMI. Participants share their ideas regarding this code as shown below:

[P1]: *"[...] I realized after graduating that a good education and proficiency in English had paid off for me. When foreign patients came to the hospital, I was the only one who could communicate with them because I was an English-speaking medicine faculty graduate."*

[P3]: *"[...] First of all, my field is related to various departments. I study courses in management, finance, software and technology, etc. Since I am more interested in software, I will talk about it first. All software languages are in English and I think the best way to study this field is to take it entirely in English because I need to write my code in English and understand everything about the application I use to write the code. English is a global language, and it is now a prerequisite for everyone."*

Some of the students stated that they are highly motivated for EMI education as it built their self confidence in their field of study, the following example is directly related to this point:

[P5]: *"[...] I think it's never easy to study in full EMI. It requires extra effort."*

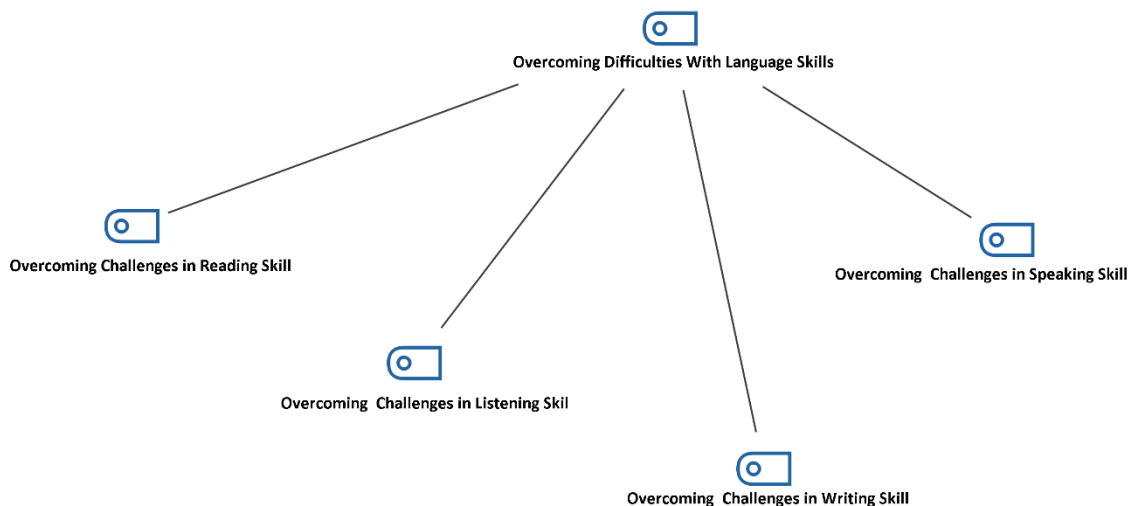
However, English always falls short in Turkey. Personally, I can say that studying in English has made me more confident in English."

Additionally, responders noted that the linguistic challenges they encountered in their EMI majors developed their English language proficiency. The following replies are consistent with this code:

[P5]: "[...] I think struggling helps people develop. I think if the program wasn't in English, I wouldn't have worked as hard. These are the things I tell people who are considering choosing this program."

[P6]: "[...] It was challenging but it was like pushing me to learn something about English. So, I need to learn like a lifelong activity. It's actually and whenever I say ohh it's enough then I'm gonna stop, I think I must go on for a better improvement in my English skills."

Figure 13. Third Sub-theme for Overcoming Difficulties with Language Skills



The second sub-theme is presenting the codes pertinent to “overcoming difficulties with language skills” regarding reading, listening, writing and speaking skills in order. Participants reflected, in this part, their strategies to overcome these challenges in four skills in their EMI journey. The Figure 13 above shows this layout.

As for the reading skill, students had some strategies to overcome the challenges they faced. Students stated that they keep vocabulary notebook to note the words encountered during reading texts in English. For example:

[P13]: *"[...] I have a vocabulary notebook for reading in English, and I always write down unfamiliar words in alphabetical order, one after the other."*

Students also resort to translation when they face a problem in understanding the relevant reading texts in English. To exemplify this situation, the following excerpts can be given:

[P12]: *"[...] I sometimes miss the whole sentence while reading especially in long sentences in articles, even if I know the meaning of the words. To solve this, I translate that sentence separately and go through it again, and I think I can overcome this by reading more articles."*

[P7]: *"[...] I also take note of the Turkish translations of the sentences I can't understand and memorize the words I don't know the meaning of."*

[P1]: *"[...] I had trouble with English reading. I thought my text was simple like a regular sentence, but it was difficult to understand because medicine is hard, and teachers wrote short notes instead of the whole sentence in their lecture notes. It took me some time to realize this, and as someone who is anxious, I got demoralized when I*

didn't understand. I thought I had to understand because I took preparatory classes. Then I started translating word by word and writing down the words I didn't know underneath. Over time, I got used to the Turkish meanings of some terms. After six years, I noticed that I could read an English text, a medical text, as fast as in Turkish."

Students apply for Turkish equivalents of the related texts or materials available when they do not understand an article, text or a material related to their subject or they often resort to the dictionary. The following students indicated the following reply related to this situation:

[P1]: *"[...] Reading articles and trying to understand them or reading texts with their Turkish translations in my hand have been very helpful."*

[P9]: *"[...] I usually face problems with vocabulary while reading in English. I solve this by constantly using a dictionary."*

As for the listening skill, students expressed their ideas on how to overcome the challenges they encountered during their listening activities in their EMI courses. They developed a few strategies for themselves. To exemplify these solutions, the responders indicated they “placed more emphasis on written sources”, as shown below:

[P8]: *"[...] I think it's quite difficult to follow the lessons in English because we continue our lives using Turkish as the main language - in our conversations, what we watch, our relationships, and even in the geography we are in. When you miss something, it's hard to catch up and understand the whole sentence. It requires full focus. That's why I focus more on written sources, especially on slides, rather than the lecture itself."*

[P14]: *"[...] I try to support the lesson by translating from the English textbook."*

[P14]: *"[...] To understand the lesson, there can be difficulties in listening as each person's vocabulary, sentence structures, and accents can be different. To overcome these, I can pay attention to the words and make connections by using the English textbook of the lesson."*

Moreover, students indicated they “came prepared to their EMI courses” so as not to have difficulty in listening and understanding the lecture in their EMI classes. One of the respondents stated the following idea:

[P7]: *"[...] In terms of listening, when I am exposed to words I don't know the meaning of, my attention easily gets distracted and I have trouble focusing on the entire subject. As a solution to this, I studied the lesson individually before attending the class, and I mostly found it helpful."*

[P7]: *"[...] Studying the topic before going to class is very effective. Being knowledgeable about what the teacher will talk about helps us simplify things while listening to English."*

Students stated that "working with online applications" to improve their listening skills. A respondent provided the following reply for this code:

[P1]: *"[...] When I first started using Cambly for listening practice, I had to pay a lot of attention to understand what was being said, but after about 3 months, I am now more comfortable and able to understand and speak more fluently."*

Several participants indicated that they listened to social media content in

English in order to improve their listening abilities in their EMI majors. Students expressed their opinions in the following manner:

[P8]: *"[...] As for listening, I use music and videos. When listening to songs on Spotify, I listen to the lyrics along with the song. On YouTube, I usually watch videos from foreign channels. Watching TV shows also helps me improve my listening skills."*

[P14]: *"[...] I don't have any problems with reading and writing, but to overcome the difficulties I have with listening, I try to support myself with foreign TV series or music."*

[P1]: *"[...] After five years before graduation, while watching a video of a foreign YouTuber on YouTube at home, I realized that I could understand it without needing subtitles. Of course, constantly watching foreign YouTubers and TV series was important in terms of getting used to the accent."*

Some of the students said that they recorded the lectures so as not to miss any part and listened to it afterwards. Following excerpts exemplify this code:

[P1]: *"[...] When it comes to English listening, I used to have difficulty understanding what I heard at first. That's why I recorded the lectures in class and listened to them later. For a long time, I thought that I couldn't understand what I was listening to in English."*

[P9]: *"[...] When listening in English, there can be information that I miss sometimes. To overcome this, I can ask my friends to fill in my missing notes or listen to it again."*

They also required the lecturers to tell the subject in Turkish in the situations they do not understand.

[P7]: "[...] I had difficulty understanding the content of the subject that was explained in English, and I sometimes asked the instructor to explain it in Turkish as well, and by listening to both Turkish and English, it helped me to solidify the subject matter."

[P9]: "[...] The problems that occur are generally not related to the language itself. The accent of the instructor who teaches the course, their proficiency in the language, etc. can sometimes cause problems. To overcome this, we can sometimes ask the instructor to briefly summarize the topic in Turkish."

As for the speaking skill which was indicated as the most difficult skill by the participants in their EMI majors, participants improved several ways to overcome the difficulties they felt. For example, they tend to push themselves to speak more during the EMI course or to talk to their friends with the aim of improving their speaking skills. The students touched upon these points, as shown below:

[P5]: "[...] During the preparatory period, my friend and I used to do things like having conversations only in English via Zoom 2-3 times a week."

[P3]: "[...] I sometimes have trouble with speaking and I try to overcome these problems by trying to speak more."

Students even tried to speak with themselves to improve their English speaking skills as it can be seen in the following replies:

[P5]: *"[...] Speaking is probably the most lacking part for me. I usually try to practice speaking in front of a mirror."*

[P7]: *"[...] When it comes to speaking, I often had problems with fluent speaking because we didn't have any classes that focused on practicing speaking in our curriculum, and our teachers were very tolerant when we couldn't speak English, which pushed us to speak more Turkish and we didn't focus on this issue. As a solution to this, in my individual studies, using the notes our teachers wrote as if they were my own sentences and practicing speaking English on my own helped me."*

[P8]: *"[...] As for speaking, since I still don't have the habit of using a foreign language that affects my daily life, when I'm on my own, I choose a topic and talk to myself about that topic."*

Students also benefited from online applications for developing their speaking skills. The following answers of the students supported this code, as displayed below:

[P1]: *"[...]I thought about starting with Cambly, but I was hesitant because I am a bit of a shy person and the idea of speaking English with foreigners made me very nervous. When I started with Cambly about 3 months ago, I was very tense and anxious. I was afraid of making mistakes or saying something wrong, so I would formulate the sentence correctly in my head before saying it. But then, as I got used to it, I started to relax and noticed that I could speak faster. Yes, I still make grammar mistakes from time to time, but it doesn't matter as long as I can communicate with the person in front of me."*

[P11]: *"[...]I can say that my speaking skills are better than my listening skills. I improved myself in this regard by using voice chat applications like Tandem and talking to foreign friends."*

Finally, students revealed their strategies for improving their writing skills such as internalizing more reading texts, preparing in advance for the topic, trying to write similar sentences in structure or getting help from the online programmes. The following replies of the participants can be given for these cases:

[P6]: *"[...] Actually reading also helps, I can say. Because when as like as long as you are exposed to reading so many texts, you get an idea of how to write actually. And when you practice it, you see just how it flows, so you know it is again reading what makes."*

[P7]: *"[...] We can add the following about writing; in terms of making comments on a subject matter, I had difficulty expressing myself fully because English was not enough, and my vocabulary was limited. To overcome this, I found it helpful to do research beforehand to familiarize myself with the topic and practice my writing skill to improve my vocabulary and writing skills."*

[P13]: *"[...] I create sentences similar to the sentence structure of the relevant translation, dictionaries or written articles for writing."*

[P12]: *"[...] I can make grammar mistakes in writing, but when I check them with translation programs, I get the correct corrections."*

In conclusion, the findings from the semi-structured interviews shed light on the challenges and strategies encountered by students in EMI courses.

CHAPTER V

5. DISCUSSION

This chapter aims to peruse the findings of the research pertinent to the research questions. In this regard, the findings of the research, supported by quantitative and qualitative data, are discussed by comparing with, contrasting and referring to the related previous research in the literature. Following the discussion, an overall discussion of the current research, the pedagogical implications and the limitations of the research and recommendations for further research will be provided.

5.1 OVERVIEW OF THE RESEARCH

This current research investigated the university students' academic language-related challenges in their EMI majors. As well as analyzing the linguistic difficulties HE students have in EMI contexts, the research scrutinized how these skill-based challenges varied according to the demographic characteristics of the participants, which is of great importance for the research outcomes. The attendants' gender, type of university (state vs. foundation), field of study, type of EMI (full EMI or partial EMI), whether or not attending the preparatory class prior to EMI programme, year of study were taken into consideration as variables. A mixed-method approach, both quantitative and qualitative method, was employed in order to achieve these targets by using the questionnaire of students' language-related challenges and a follow-up semi-structured interview.

5. 2. DISCUSSION

In this section, the findings will be examined in relation to the research questions. This section discusses the challenges faced by university students in these four language skills in EMI settings based on the literature.

This research's first question seeks to answer what the skill-based linguistic difficulties EMI students have in Turkish HE context are. The data for this research was gathered through the scale of student challenges in EMI and a follow-up semi-structured interview.

The results of the EMI linguistic challenges questionnaire are categorized based on the four skills and their respective subcategories. After analyzing the forty-three items related to student language challenges, which assess difficulties in the four language skills using a five-point Likert scale, the initial findings indicate that students generally find four language constructs manageable, with mean scores above 3 except for one item related to writing. Descriptive statistics reveal that the writing sub-construct, specifically the item "proofreading written work," falls slightly below the midpoint of 3. Further examination of the scale's items across the four constructs reveals that writing is the most challenging skill among the four language skills. There is a statistically slight difference between the difficulties students face in writing and speaking, as indicated by their mean scores. Thus, it can be concluded that productive skills (writing and speaking) pose greater challenges compared to receptive skills (reading and listening). Notably, listening appears to be the least challenging skill for EMI students. The most challenging items within the four skills are "proofreading written work" in the writing sub-scale, "participating actively in discussion" in the speaking skill sub-scale, "working out the meaning of difficult words" in the reading skill sub-scale, and "understanding classmates' accents" in the listening skill sub-scale. These findings suggest that students struggle the most with productive linguistic tasks related to writing and speaking, in contrast to receptive skill tasks, which align with the changing levels of difficulty reflected in their mean scores. The mean scores of the most challenging linguistic items consistently correspond with the mean scores of the most challenging sub-scales.

Semi-structured interview also supports the findings of the quantitative data as the participants reported speaking as the most difficult skill along with writing in EMI

contexts. For example, a second-grade student studying International Relations expressed that speaking skills were the area where they felt they needed improvement the most. He mentioned that he often engaged in speaking practice by talking to their reflection in the mirror, as a way to address his speaking challenges. Similarly, a fourth-grade student in the Psychology department voiced her thoughts on speaking difficulties. She mentioned that she often faced challenges in speaking fluently, attributing it to the lack of practical speaking lessons in their curriculum. Additionally, she noted that the teachers displayed a lenient attitude when students struggled with speaking English, which inadvertently led to an increased reliance on Turkish during class discussions. As a result, there was a lack of emphasis on enhancing speaking skills. She advocated for the improvement of speaking abilities through consistent practice and regular usage. In the Engineering department, another fourth-grade student admitted to grappling with writing due to a lack of complete understanding of the specific guidelines associated with academic writing. Consequently, they encountered a slightly greater challenge in writing compared to others. Additionally, a third-grade Engineering student acknowledged that although they could effectively communicate using simple language to explain texts or research, they struggled to meet the requirements of academic thesis and article writing due to insufficient proficiency in academic English.

In short, the qualitative interviews provide further support for the quantitative findings, as participants highlight speaking and writing as the most difficult skills in EMI contexts. They emphasize the need for improvement and suggest strategies such as mirror practice, increased emphasis on practical speaking lessons, better teacher support, and consistent practice to enhance speaking and writing abilities.

The results of the mixed-method current study show that writing is the most difficult skill among the four language skills, and the most difficult element in the writing subconstruct is "proofreading written work" and speaking was found to be the most challenging skill as productive skill in semi-structured interview. Evans and Green's (2007) research also supports the results of the current study. The authors

examined the language difficulties of international students in Hong Kong and found that writing and speaking subsequently were the most challenging skills for these students. They also found that proofreading and correcting one's own work is a major challenge for international students, which is consistent with the findings of the current study. The results of Evans and Green's research (2007) resonate with the present study and the research outcomes of Evans and Morrison (2011), who conducted mixed-method research with a big sample of attendants and found that students had the most challenge during writing essay in a suitable academic style (Evans & Morrison, 2011, p.203). However, understanding technical vocabulary and comprehending lectures are the other most difficult items, this time, in listening skill in their research. Their findings about listening are not in line with the current research as listening skill is the least challenging sub-skill in this research. This difference may be due to the different context of the research and the background of the participants.

Another study that supports the results of the current research is the research by Aizawa et al. (2020). The authors investigated the challenges faced by Japanese students studying in English-medium universities in Japan. They found that writing and then speaking were the most challenging skills for Japanese students, which is consistent with the current research's findings. They also found that students struggled foremost with academic writing conventions and producing clear and concise sentences, which aligns with the current study's finding that proofreading and correcting written work was a significant challenge for students. Similarly, their findings that students face more challenges in productive skills than receptive skills in EMI courses substantiated the findings of the present research. In this respect, it can be claimed that having difficulty in language skills requiring productivity in diverse contexts are an inveterate issue in EMI courses and this calls for more academic linguistic abilities and students may need to be provided with more language-related support. In the current research, the challenge in proofreading written work proposes that students may lack the required linguistic competence to determine and correct their mistakes in their written work. Therefore, EMI programs should also be equipped with explicit language instruction and effective

practice in writing skills, like grammar, syntax, and necessary proofreading techniques.

In their research in Turkish context, Hasırcı and Cosgun (2018) also revealed that speaking was the weakest skill for the participants in EMI courses, and they showed less improvement in this skill throughout their years of study when compared to other skills. Inadequate language practice, students' inclination for using their home languages, and non-native instructors' often resorting to their native language were given as the most possible reasons behind this difficulty. The results of this research also display that unknown technical vocabulary restricts the ease of having lessons in EMI (Hasırcı, & Cosgun, 2018, p.111). Both quantitative and qualitative outcomes of the current research resonate the same findings. It can be concluded that the same contexts bear similar results.

In the research by Kamaşak, Sahan, and Rose (2021) with 498 undergraduate students in Turkish context, the questionnaire findings indicated that participants experienced more challenges in writing and speaking skills when compared to the other two skills. The findings of Kamaşak, Sahan, and Rose (2021) are aligned with the findings of the current research in the same Turkish context. It can be inferred that students have more difficulty in productive language skills than receptive linguistic skills as these skills require more active academic proper language abilities and higher level of language proficiency than the receptive language skills. Academic writing and producing clear, neat and concise sentences in a certain context are a challenging ability among Turkish students. With the aim of overcoming these challenges, university administration boards may present more academic linguistic opportunities with language courses and support undergraduate students throughout their major years apart from PYPs. Students' difficulty in actively participating in discussion suggests that they may lack the language skills necessary to convey their thoughts and feelings in a fluent and coherent manner. Therefore, EMI programs should give students the chance to practice speaking in a range of settings, including presentations, debates, and group discussions.

Kırkgöz (2005)'s research is consistent with the present research's results as well. Kırkgöz's research indicated that students perceived themselves at ease in listening and reading skill in EMI whereas they saw themselves at the weakest in academic writing and especially in speaking activities. The results of Kırkgöz's research show parallelism with the outcomes of the current study as both research were conducted in the same context.

On the other hand, Hallekjær's research (2010) investigated the challenges faced by 391 Norwegian students studying in English-medium programs in three Norwegian HE institutions. The findings indicated that students struggled with comprehending lectures, taking related notes during listening to these lectures and understanding the technical vocabulary needed. In Hallekjær's research, listening is the most challenging skill whereas it is the easiest skill in current research. It is crucial to note that the two research were conducted with different samples, contexts, and methodologies, which may have conducted to dissimilar outcomes in terms of the challenges students had the most.

Similarly, the results of the present research corroborate the findings of Rose et al.'s research (2020). According to Rose et al.'s (2020) research, respondents indicated that they had challenges in understanding academic content and coping with the fast pace of the lectures through EMI. It was also found that expressing themselves in written and oral forms was also a challenging factor for the EMI students. These findings resonate with the results of the present research.

Soruç and Griffiths's (2018) research also indicated that the students encountered difficulties in listening to the heavy accents of their international peers and faced challenges in speaking with peers who had limited English proficiency. Understanding English used in the classroom also proved to be a challenge for the students. The findings of their research also resonate with the current paper as the attendees also

reported having difficulty in grasping their peers' accent in English in listening skill as the most challenging ability in this sub-construct.

In terms of productive skills, it can be argued that writing and speaking call for higher levels of language proficiency and academic language literacy skills than the other language skills. For this reason, what students engage with the most being writing and speaking is not a surprising outcome particularly in the medium of a foreign language, English in this case. On the other hand, the challenges students encounter in EMI situations are not only peculiar to Turkish context but also can be witnessed in cross-cultural settings with different student samples from different countries, as proved by the results of diverse research. These difficulties may stem from the complexity of English language, the unfamiliarity with academic English, and the lack of belief in using English.

The second question explored whether the linguistic challenges showed differences according to gender, type of university (state vs. foundation), field of study, type of EMI (full EMI or partial EMI), attending the preparatory class prior to EMI programme, year of study. Preliminary findings from the research's second question will be uncovered in this part by referring to the subsections of the question.

As for the gender, the results of the analysis revealed that female students experienced more difficulties in writing, reading and listening during their EMI courses than the male students. However, there was not a significant difference between females and males in speaking skill in their EMI courses. More specifically, it can be asserted that female participants felt more challenges in proofreading written work in writing, in working out the meaning of difficult words in reading and understanding their classmates' accents in listening than their male counterparts had but there was no statistically significant difference observed between male and female for having difficulty in speaking. The rate of difficulty females faced being more than the rate of males may be attributed to the distribution of the departments and the number of females

in these departments. As MLPS departments in this research outnumbered the other departments and the low number of the female students in this related division may be a reason of their having more difficulty in three skills. It is worth noting that there was not a significant difference between the two genders in terms of speaking skill in EMI courses. It may be proposed that the components affecting the success in writing, listening and reading skills may be more related to English language proficiency whereas variables affecting speaking construct may be correlated with distinct factor like confidence and ease with spoken English.

The findings of Gurler (2015)'s research indicated that there was not a statistically significant difference in speaking success among PYP students according to two genders. However, there is a statistically significant difference between self-confidence and speaking grades between males and females. Gender is an important factor for students having self-confidence in speaking achievement according to the result of their research. The research suggested raising the levels of students' self-confidence in both genders for their achieving success in speaking activities. The finding of the research bears resemblance to the finding of the current paper as both researches revealed that there was not a direct connection between gender and speaking skills in department involving EMI.

Kamaşak et al. (2020) investigated whether there was a difference between the two genders across the four skills challenges and findings indicated that males had more difficulty in listening skill in EMI classes than female students. No other significant difference was observed in gender variable concerning linguistic challenges in EMI courses. The findings of Kamaşak et al. (2020)'s research contradict the results of the present research. The possible reason behind this discrepancy may be that the different samples of the population participated in the researches and their different backgrounds yielded dissimilar results.

Lasekan (2018) conducted mixed-method research with 221 undergraduate students in India and found that female students had higher English language proficiency

levels than male students owing to their more affirmative attitudes and more self-confidence towards English language learning. Another research by Karthigeyan and Nirmala (2012) also indicated that female students performed better in English language exams than male students. The current research found that female students had more challenges in specific language skills such as writing, reading, and listening during their EMI classes. However, the present research and Lasekan (2018)'s research found no significant difference between males and females in terms of speaking skill. The distinction between these two papers may be attributed to a number of factors such as geographical location (India vs. Turkey), sample size of the population and cultural context. Cultural elements may play an important role in shaping positive attitudes towards English language learning in EMI courses in Turkey and immersion undergraduate programmes in India and may contribute to the differences across genders in English language learning. As the two researches yielded contradictory results regarding gender differences, more information is needed to fully grasp the situation contributing to these variations.

In another quantitative research, Macaro and Akıncıoğlu (2018) investigated 989 students' perceptions about EMI and the challenges they encountered in EMI settings through different variables including gender. The findings of their research revealed that females were contented with EMI and had a more positive stance towards EMI than their male counterparts. However, female students had more challenges when speaking in front of their classmates and lecturers than male students. The results of the research contradict the findings of the present research. It is worth noting that these researches focused on different aspects of EMI contexts by giving more importance to different variables, and therefore, the outcomes may not be directly comparable in this mean.

Bukve (2020)'s research uses data from a survey given to students at two institutions in Norway and Finland in order to investigate gender variations in students' perceptions on language use in HE. The results of the research indicated that most of the participants had favorable attitudes towards EMI. However, female students in Finland had less confident stance towards EMI in their English language skills than their male

peers and female participants in both countries stated they had more challenges in struggling with day-to-day courses in EMI. In both countries, it is easy to say that both male and female students are at ease in four skills in EMI contexts and particularly they both perform better in receptive skills than productive skills in EMI courses. However, females generally had slightly more difficulty in four skills than their male counterparts in both countries except for listening skill in Norway. Both males and females showed the same rate of ease in listening skill in Norway (Bukve, 2020, p.13). The results of Bukve (2020)'s research is aligned with the current research as female had more difficulties in general. While there was no difference in speaking in Turkish EMI context between two genders in the present research, it was the listening skill in EMI courses in Norway that no discrepancy was observed between male and female students. It can be argued that different contexts and cultural settings may be the reason behind this disparity. Interestingly, the outcomes of Bukve (2020)'s research showed that females felt less confidence in themselves in four language skills. This may be the cause of their coping with more language learning issues for female students' being more aware of their insufficient language skills.

The second subsection of the second research question is about the type of university. The findings of the research suggested that foundation university students experienced more difficulties than their counterparts in state universities in four language skills regarding their EMI education. The students in private universities found reading skill in EMI courses the most difficult while students in state universities had the most challenge in listening skill in their EMI classes. The most problematic area in reading was working out the meaning of difficult words for foundation university students whereas understanding classmates' accents in listening skill was the most problematic area for students in state universities. When it is looked at the least challenging skills for both types of universities, the results are just reversed. Listening skill was easier for foundation university students than other skills while reading was relatively easier for state university students than the other skills.

In the field of EMI, there is not much research comparing public and private universities. One of the first research in this vein was the research of Macaro and Akıncioğlu (2018). Macaro and Akıncioğlu (2018) conducted quantitative research in order to investigate how Turkish university students perceive EMI in their education regarding their gender, year of study and type of university and how these variables affect their stances towards EMI. Of the nine items regarding challenges in EMI, six items were statistically significant. Related to the challenges students face in EMI, the findings of the questionnaire with 989 students from 18 universities indicated that state university students experienced more difficulties than the students in foundation universities. State university students experienced most difficulty in listening to other students in EMI classes while foundation students found reading texts the most difficult in EMI courses.

The results of Macaro and Akıncioğlu (2018) are not consistent with the present research. Both researches suggested university students had challenges in EMI classes, and these challenges varied depending on the type of university and language skills being assessed. While foundation university students had more difficulty in four skills than state university students in the current paper, it was the state university students who had more challenges in four skills when compared to the foundation university students in Macaro and Akıncioğlu (2018)'s research. In their research, foundation university students stated they coped with EMI more than their counterparts in state universities by adding aspects of learning easier through EMI in their majors. The discrepancy in the results of two researches may be attributed to a few factors.

Firstly, both the academic levels and also the language levels of the university students may differ between foundation and state universities. State universities are public institutions that demand higher enrollment requirements and admit students with higher academic competence and higher language proficiency. However, foundation universities are private institutions that present PYP or EMI courses to the students who may tend to have lower levels of academic qualification and English language proficiency. The distinction in the demographic communities between two types of

universities may have contributed to results of two research studies, resulting in that participants in foundation universities face more difficulties in reading skill while listening skill was more taxing for the ones in state universities in the current paper of research.

Secondly, approaches to EMI instruction and academic resources available may show differences between two types of university. Less experienced or qualified faculty members may be another reason behind this distinction. Their way of instruction and the resources may have impacted the varied challenges students encountered between foundation and state universities (Galloway et al., 2017, p.25, He and Chiang, 2016, p.11).

Thirdly, the curriculum and the related course materials benefited in both university type may be contradictory. The more or less challenging and appropriate materials may have contributed to the aspects of the difficulties confronted in four skills in two types of universities.

The third subsection of the second research question is related to the field of study. The finding of the present research for the field of study displayed that students in MLPS department had more challenges than those in Social Studies and Medical Sciences respectively in writing skill in EMI courses. As for the reading skill, the participants in MLPS encountered more problems than their counterparts in Social Studies and Medical Studies respectively. Moreover, speaking skill in EMI courses was more challenging for MLPS students than the students in Medical Sciences. Regarding listening skill in EMI courses, MLPS students found it more taxing than Humanities, Social Sciences and Medical Sciences in order.

In the research investigating the students' linguistic challenges in EMI settings, Kamaşak, Sahan and Rose (2020) looked into the language related challenges students experienced in EMI classes according to the field of study. They divided the disciplines into three departments in universities as engineering, social sciences and medicine. The

findings of their research demonstrated that students who studied a major in Social Sciences found writing and reading skills in EMI courses more difficult than those in engineering departments. This result may point out that social sciences students may face more challenges in academic reading and writing skills in their field of study than their peers in engineering disciplines. No distinctions in terms of linguistic challenges were found in speaking and listening skills with regard to the students' field of study.

Both researches sustain important insights into the linguistic challenges students experience across different fields of study in EMI classes. The results of two researches are not consistent with each other. While the current paper divided the departments into four, Kamaşak, Şahan and Rose (2020) divided the departments in three. While students who studied in Social Sciences through EMI encountered greater challenges in reading and writing skills than the ones in Engineering in Kamaşak, Şahan and Rose (2020)'s research, students in MLPS including Engineering Departments had more difficulty than some of the other departments relatedly in four skills in the present research. Therefore, the results did not support each other. The first study compares Social Sciences and Engineering Departments and identifies that Social Sciences students encounter more difficulties in writing and reading skills compared to their Engineering peers. In contrast, the second research compares and find differences between the MLPS department with Social Studies and Medical Sciences, indicating that MLPS students face more challenges in writing and reading skills compared to students in the other fields. The first research does not find any distinctions in speaking and listening skills between social sciences and engineering students, while the second study reveals that speaking skills are more challenging for MLPS students compared to those in Medical Sciences and listening skill is more taxing for MLPS than for the other three divisions in descending order. One factor for the difference could be the nature of the curriculum and coursework in each field of study. It is likely that Social Sciences and MLPS programs have different academic requirements, focusing on distinct language skills and communication styles. The specific language demands and academic conventions within these fields might contribute to the varying levels of difficulty experienced by students. Moreover, variations in teaching approaches, resources, and support provided to students

in different departments could influence their language proficiency and skill development. Furthermore, the prior language background and language exposure of students in different fields of study could also contribute to the differences in difficulty. Students entering Social Sciences or MLPS programs may have different language backgrounds, exposure to academic English, or prior language training, which could influence their language proficiency and ability to meet the demands of EMI courses.

In another quantitative findings of the research, Yuksel, Altay, Curle and Aizawa (in press) aimed to examine whether productive language skills predict success in full-EMI Social Sciences (N=75) and full-EMI MLPS (N=75) divisions. The findings indicated that speaking and writing skills were the most taxing skills in both Social Sciences and MPLS. While the study by Yuksel, Altay, Curle, and Aizawa (in press) examines the predictive power of productive language skills on success in full-EMI programs in Social Sciences and MLPS divisions, this study compares the language difficulties experienced by students in four fields of study within EMI courses. The results of Yuksel, Altay, Curle and Aizawa (in press) do not fully and directly substantiate the findings of the current paper as their focuses are not directly on the same topic of research. When comparing the two studies anyway, both acknowledge the significance of speaking and writing skills as challenging areas in EMI programs. However, the current research provides a more detailed analysis by considering the field of study and comparing the language challenges across different departments. It highlights that the specific difficulties vary depending on the field, with MLPS students experiencing more challenges in writing, reading, speaking, and listening skills compared to students in other fields.

In the mixed-method research, Altay and Yuksel (2021) aimed to discover whether receptive skills (reading and listening) predict success in Social Sciences (N=75) full-EMI and MLPS (75) full-EMI divisions in Turkey. The outcomes indicated that while students in Social Sciences faced more challenges in reading skill than the ones in MLPS, their ESP reading grades showed statistically resemblance in predicting their EMI success. Reading was also indicated by the interviewees as the most often

used skill among four skills in EMI courses. As for listening skill, Social Sciences indicated their more exposure to that skill and their ESP listening successfully predicted their EMI success. This was not the case for the students in MLPS according to the results, however. Moreover, the students in MLPS hardly depend on listening. The results of this research study are not in line with the current paper as well.

The differences in four skills across the department divisions may stem from the requirements of the specific discipline structures (Hayland, 2006) and these departments delivering subjects mostly in full EMI may be another reason for this problem as having lesson in full EMI demands more language proficiency in specific skills across the departments. In the research conducted in Swedish HE by Bolton and Kuteeva (2012), for example, the highest rate for reading skill belonged to the students in Science departments. Students indicated most of the course materials in Science departments available just in English whereas the rate of reading in English due to the language of the materials decreased in Social Sciences, Humanities and Law department. Similarly, students in MLPS finding reading skill more challenging than the other departments in this current research may be a reason behind it. This distinction may be interpreted as its being directly related to the nature of building knowledge in different divisions of departments (Becher, 1989).

One of the possible reasons for these opposing findings may be that the categorization of the university division is not equal in the researches abovementioned. While the present study divided the departments into four in line with The University of Oxford's Divisions and Departments framework, the mentioned papers divided the departments in two or three accordingly. In this mean, the present paper may have delved deeper into the difficulties faced by the university students in a specific EMI department. The other reason behind this variation may be the greater number of the students from a variety of universities in Turkey by not restricting neither the number of the sample size nor the diversity of the universities.

According to the findings of the current research regarding type of EMI, there is a statistically significant difference between full EMI and partial EMI regarding four language skills. The results suggest that partial EMI students face more challenges across four skills than the participants in full EMI. While it is the writing skill that the students in partial EMI found the most challenging skill, the most difficult skill for full EMI students is speaking skill. The least challenging skill in partial EMI is speaking skill whereas full EMI students found writing skill less challenging than the other skills in their EMI courses. The results of the present research suggest that the level of English proficiency required is higher in full EMI majors than partial EMI contexts, which may explain the distinctions in the particular challenges encountered by two types of EMI.

Chou (2018) investigated the influences of full and partial EMI contexts on the anxiety and confidence level of speaking skills and inquired about the speaking strategies students employed. Additionally, students in both groups reported their speaking skill grades. Both groups indicated they experienced anxiety and confidence problems during their English-speaking classes in EMI contexts. The further results indicated that full EMI students had more confidence and less anxiety in speaking activities than their counterparts in partial EMI and they could utilize more speaking strategies than partial EMI students (Chou, 2018, p.628). According to the self-reports of the students, English speaking scores of the students in full EMI majors were higher than the scores of partial EMI students. Despite the discrepancy in their focus, the findings of the researches are in the same line with each other as partial EMI students face more difficulties when compared to full EMI. The discrepancy between both groups in speaking skill may be attributed to the difference in the level of exposure to the target language and the language proficiency and production demands in return across both groups. In the current study, full EMI students found the speaking skill the most challenging as the requirement of the programme is much more detailed and inclusive in speaking skills such as using appropriate wording, responding to interlocutors or maintaining fluency. Partial EMI students, on the other hand, may be supported with the necessary speaking help when they struggle with certain speaking activities, and they may not be required to perform a high level of proficiency in speaking. Therefore, the students in partial EMI may feel at more

ease in speaking skill than the other language skills and may not find speaking skill as hard as those in full EMI. Both researches provide beneficial insight into the challenges and profits of EMI in language and subject learning. The EMI contexts may provide more comprehensive language learning environments and may also require higher English proficiency in linguistic skills. Partial EMI, however, may not supply the students with the same level of English language exposure or the opportunities for language practices as full EMI and may not require much language skills demands from students.

In another research by Sert (2008), the effectiveness of three different approaches to English language instruction was investigated with respect to the language and academic knowledge attainment. These approaches were namely full EMI, partial EMI and TMI. The results demonstrated that full EMI was the most effective method in the acquisition of language proficiency and academic content. However, none of the existing methods in this research were found fully satisfactory and further research was suggested. In the questionnaire in the triangulated research, how effectively students thought they could acquire language skills was asked to the students in full EMI, partial EMI and TMI. When the means of them compared, full EMI students stated having more difficulty in speaking, writing, listening and reading respectively in descending order than partial EMI students despite the higher effectiveness of full EMI. In the current paper, partial EMI students faced more difficulty than those in full EMI. The results in Sert (2009)'s research may seem contradictory to the current research despite the effectiveness of full EMI. When looked closer, it may be easily seen that efficiency and comprehensive nature of the full EMI was accepted in both researches. In terms of the challenges faced by types of EMI, the students in full EMI stated the same view by finding speaking skill the most challenging. While full EMI students in the current paper found the writing the least difficult skill, it was the reading skill for those in Sert (2008)'s research that they found the least challenging. Students in partial EMI also found productive skills more difficult at the same level than receptive skills in Sert (2008)'s research. These findings in both researches are also discursive. The possible reason for these differences in terms of skills between the two studies are the distinct sample and the size of population, socio-cultural

diversity factors and discrepancy in the academic and linguistic level of the students in those HE institutions cross universities may be the other causes of the different results.

The findings of the research by Altay and Yuksel (2022) displayed that the partial EMI students experienced more difficulties regarding four skills than the students in full EMI. With respect to four skills, partial EMI students found writing skill the most challenging whereas the listening skill the least challenging. Full EMI students also indicated listening skill as the least difficult skill. Full EMI students perceived the speaking skill as the most challenging skill in their EMI courses in Altay and Yuksel (2022)'s research. The results of their research and the present paper are in the same line, and they reflect the findings of each other to some extent as partial EMI students had more challenges in EMI courses than those in full EMI in both researches, the most difficult skill in full EMI courses is speaking skill and writing skill in partial EMI in both researches. The least challenging skill in partial EMI is speaking skill in the present research while partial EMI students in Altay and Yuksel (2022)'s research found listening skill easier than the other skills. The differences in findings between the two studies may be due to differences in that the current paper collected data from all the departments reached in the Turkish HE contexts while Altay and Yuksel (2022) collected the related data from the students in Business Administration Programmes at two universities in Turkey.

The findings of the current research moderately corroborated with the findings of Kamaşak et al. (2021)'s and Aizawa et al. (2020)'s researches as their sample data was driven from the full EMI students in HEs and the participants also indicated finding the speaking skill as the most challenging in EMI contexts.

Şahan and Sahan (2021) conducted quantitative research to compare the perceptions and motivations of undergraduate students in full EMI and partial EMI engineering programs in Turkish HE context. They administered a questionnaire to 198 participants in both types of EMI programmes in engineering departments and the findings showed that full EMI students had higher expectations for job prospects and greater

confidence in themselves as prospective engineers, leading to increased potential for career opportunities. Full EMI students also had more positive perspectives on their academic standards, probably due to higher admission demands and wider range of sources in English. Full EMI students also indicated having higher language proficiency in reading and writing skills than partial EMI students, but no statistically significant difference detected in listening and speaking skills between full and partial EMI students. Speaking was the most difficult skill for both groups of EMI students.

Şahan and Şahan (2021)'s research and the current paper moderately differs in their findings with respect to the linguistic challenges that full and partial EMI students encounter in four language skills in EMI studies. It was accepted in both studies that full EMI students did better in EMI contents than their counterparts in partial EMI. While Şahan and Sahan (2021) found speaking skill for both full and partial EMI students as the most challenging skill, the current paper found only speaking the most difficult skill for full EMI students but writing as the most difficult skill for partial EMI students. Therefore, while both studies agree that speaking is the most challenging skill for full EMI students, they differ in partial EMI students regarding the most challenging skill. While the most challenging skill for partial EMI was writing skill in the present study, it was speaking skill for their peers in the research of Şahan and Sahan (2021). While partial EMI students face more challenges regarding four linguistic skills in the present research, partial EMI students had lower language proficiency in reading and writing skills and no statistically significant discrepancies was observed between two partial and full EMI groups in Şahan and Sahan (2021)'s research. One potential explanation for the differences in the findings of the two researches may be attributed to the differences in their target field of study groups. As Şahan and Sahan (2021)'s research concentrated on the attendants in engineering faculty, the existing paper collected its data from all the departments reached as possible. The other possible reason for the distinction between both researches are their different research focus, relatedly different research questions and data samples. The different methodologies used in the two researches may account for the discrepancies in the findings.

Despite all the differences, all the researches scrutinized and compared with the existing research under this heading underscore the importance of language proficiency in Turkish HE EMI context. The results of these studies indicate the significance of EMI programmes on the improvement of academic and linguistic skill across the various departments and divisions. They also suggest that more importance should be given to the speaking skills of EMI students as mostly both students groups of full and partial EMI found it the most challenging skill in those researches, which was also the case for full EMI students in the current research. After all, all the findings in these diverse papers represent that partial EMI students had more difficulties and the level of linguistic proficiency required in full EMI programs was greater than the level demanded for partial EMI departments. Related institutions offering EMI programmes may need to reconsider this matter when planning the programmes and choosing students for these programmes.

According to the results pertinent to prior EMI experience, the students who took preparatory class prior to their majors had more difficulty in four skills than those who did not take PYP. It is the speaking skill that the participants who took PYP had the most challenge while it is the writing skill they had the least difficulty during their EMI majors. When compared to each other, the findings suggest that there was a rather slight difference in their means of four skills in term of the difficulties the students who took PYP face during their EMI majors. The students who did not take PYP, on the other hand, lived the most difficulty in writing skill and the least difficulty in speaking skill conversely to the students with PYP.

The reason why the students without PYP can cope more easily with four linguistic skills than their counterparts with PYP that the students did not take PYP because they had submitted a sort of language proficiency such as TOEFL, YDS, IELTS, or they had passed the PYP examination so as not to take PYP and to commence directly to their majors. This may mean that they already show a certain level of success in linguistic proficiency and do better in four linguistic skills than their peers with PYP.

In Kırkgöz (2009)'s research on the EMI effectiveness of the students and the lecturers in an EMI university in Turkish HE, they found that over 90% of the pupils did not consider the PYP prepare them for their academic majors. The results of Kırkgöz (2009) generally confirmed the findings of the present research as the students with PYP had more difficulty in linguistic skills with respect to the ones who commenced their majors directly.

Inan, Yuksel and Gurkan (2012) conducted another research examining the teachers' ideas from EMI departments in two Turkish HE on which language skills they see as important in the first EMI year after PYP. The findings suggest that receptive skills were considered more significant skills to be improved in PYP than productive skills while speaking skill was not considered as a crucial skill. The results of the current research are not consistent with the findings of Inan, Yuksel, and Gurkan (2012) as this present research prioritizes speaking as the most challenging skill in PYP and see the writing as the least challenging one. The difference may be connected to the difference between the target attendance groups as it is the teacher group in the research of Inan, Yuksel, and Gurkan (2012) and the student group in the current paper.

Akyel and Özek (2010) investigated the required linguistic skills for EMI courses and collected data from both teachers and students in a Turkish university offering EMI courses. The results of their study pertinent to the current research indicated that reading and listening skills should be improved for the acquisition of EMI academic courses. Both of the participant groups reported that speaking skill was not paid enough attention in PYP and more significance should be given to speaking skill as they saw speaking skill an indispensable part of EMI context for a successful language and academic learning. This result may be considered in the same line with the conclusions of present research as it was the speaking skill students had the most challenge in it.

Overall, all high school graduate can choose an EMI department in pertinent to their score of national university exam and rankings in Turkey without taking their

language proficiency into an account. While Council of Higher Education control everything about this university entrance exam, universities are left independent in organizing their PYPs, in the standards for the exemption from PYP and the setting the criteria for the institutional language exam for the related exemption from PYPs (Yüksel et al., 2022). According to some research (Aizawa et al., 2020; Soruç et al., 2021), there is not a consistent uniformed linguistic threshold or certification among EMI HE institutions in Turkey. As an outcome of this case, a prospective undergraduate student may be successful in a language test and may be admitted to an EMI program without taking related PYP while he/ she may be unsuccessful in another HE institution with the same results or certifications (Özdemir-Yılmaz, 2022, p.340). It can be deduced that all the group samples related to language challenges students face may not give the same results across the universities in different researches as there is not a consensus on linguistic threshold level for PYP. Exemplarily, one group of the students in an EMI department in a HE might find writing the least challenging skill while the students in another group scenario might find writing skill difficult and see this skill crucial to be supported.

The gap between the students who took PYP and the ones starting directly to their majors did not close according to the results of the current research. This may mean that there is an unattainable language proficiency gap for the students with PYP even if they have spent a whole year of language learning in comparison to the students who pass language test or presented a sort of linguistic proficiency score. Additionally, the results suggest that they have more difficulty in speaking skill.

The results of the last subsection in the second research question illustrate the rankings for four skills according to the year of study. According to this, there is a meaningful difference between the degree of the challenges students encounter and the year of study, except for the speaking skill. In general, as the year of study increases, the challenges in writing, reading, and listening skills students experience show a decrease. However, the speaking skill remains consistently challenging for undergraduate students in EMI contexts.

In the first year of study, reading is the most difficult skill while writing is slightly less challenging. In the second year, listening becomes the most difficult skill, closely followed by speaking. In the third year, listening remains the most challenging skill. In the fourth year, reading poses the greatest challenge, with listening closely behind. In the fifth year, speaking becomes the most difficult skill, with reading being slightly less challenging. Finally, in the sixth year, students in the medicine faculty face the most difficulty in speaking.

Although there are some exceptions, overall, the challenges faced by students decrease as they progress in their studies. However, the difficulty in the four skills remains consistent throughout their education. The least challenging skill varies depending on the year of study: listening in the first year, reading in the second year, speaking in the third year, writing in the fourth year, and listening again in the fifth and sixth years.

The qualitative data also supported these findings. The attendees stated that they had difficulty in various skills and circumstances in their initial years of EMI courses due to lack of knowledge, experience and exposure to the target language. After some prior exposure to the language and getting sufficient knowledge in related skills and vocabulary, students felt at ease in showing academic performance through English.

Both quantitative and qualitative findings of the current research are in line with results of Yang (2015)'s research. In Yang (2015)'s research, students' linguistic performances in a Taiwanese CLIL programme were investigated. The results suggested that students had better receptive skills before their industrial placement when compared to their pre-test scores in commencing their education while productive skills were found more challenging for the students even though they showed an improvement throughout the years of study. This was, however, not the case for content acquisition according to the findings of the research (Yang, 2015, p. 372).

Doctoral research conducted by Rogier (2012) examined the perceptions of undergraduate students regarding the effects EMI on their linguistic proficiency. The findings revealed that students believed their English language skills improved over a four-year period of EMI. The primary reason cited for this improvement was exposure to the language. The most improvement was indicated in speaking skill, followed by reading, writing and listening skill, respectively. The findings were inconsistent with the present research as speaking skill did not show a steady increase and there was not such a clear-cut development regarding four skills in the four-year period of study. The difference may be due to the different context and sample as Rogier (2012)'s study took place in UAE context.

In a parallel study involving Korean undergraduate students, Kim, Kweon, and Kim (2016) examined students' perceptions about whether EMI in their majors improved their language proficiency or not. More than half of the students stated they were not sure about the impact of EMI on the development of their English proficiency over the years. Half of the remaining percentage indicated EMI did not develop their English. It was concluded that EMI did not improve students' English language proficiency according to the students' perceptions. Additionally, the students reported that listening comprehension showed the most improvement during EMI while speaking ability demonstrated the least improvement. The findings of Kim, Kweon, and Kim (2016)' research was in the same line with the current research to some extent as the speaking skill remains the most challenging skill across all the years of study and participants in both studies stated they had challenges in four skills in various degrees.

Kırkgöz (2005) also found in her research that students perceived themselves the strongest in receptive skills while the weakest in productive skills regardless of the year of study. This perception of the students did not change over the years of study. According to Kırkgöz (2005), first-year and final-year EMI students considered themselves proficient in reading and listening skills but weak in writing and especially speaking skills (p.117). This indicates that regardless of the year of study, students faced the same challenges in terms of language skills. However, final-year students felt more confident in their English

language skills, suggesting that experience and time spent in an EMI context had a positive effect on their language development (p.117). The findings of Kırkgöz (2005)'s research resonates with the present research to some extent as speaking as a productive skill remains challenging for students and final year students indicated confidence in their English language proficiency as a result of progression and experience throughout the time. The findings from both studies imply that although students may experience some improvement in their language skills over time, the challenges in developing productive skills persist.

These justifications for the improvement in their language skills over time correspond to the research results of Hasırcı and Coşkun (2018) as their research revealed that consistent and meaningful exposure to English in an EMI context could lead to productive improvements in language skills when supported with corrective feedback. Notably, speaking remained as the least developed and weakest skill among four skills throughout all years of study, aligning with the current paper.

These results suggest that the challenges faced by EMI students are not uniform across all language skills or across all years of study. Therefore, it is important for curriculum designers and instructors to understand these differences in order to provide appropriate support and instruction for EMI students. The reason for the differences in the most challenging skills across the year of study may be that the curriculum contents vary and get harder across the year of study and in relation to the departments. The linguistic demands of the numeric-based departments and social sciences may also show differences, so the linguistic demands may show differences across the years. The general tendency is that students have more difficulties in the first years of their studies even if they had PYP before commencing their majors or had a certain language proficiency certificate. After they got familiar with the content and the terminology of the related field of study, they get less difficulty in the following years of their studies. There were some exceptions such as listening skill. The students had more challenges in their second year of study than in their first year of study. The reason behind it may be attributed to the related course and its contents along with the departmental factors.

The third question aims to answer how Turkish HE students attending EMI programmes perceive language and learning challenges. The findings from the interviews highlight the challenges faced by students in EMI courses, including unfamiliar words, difficulty in thinking and expressing themselves in English, shyness to speak, lack of grammar knowledge, struggles in following lectures, distractions caused by unknown words, and feelings of inadequacy. These challenges affect their comprehension, engagement, and overall performance. Furthermore, factors such as difficult assigned articles, academic English complexity, one-time listening exams, teachers' accents, and a lack of encouragement to speak in English contribute to the difficulties faced by students. However, students employ various strategies to overcome these challenges, including understanding word meanings from context, conducting research, using translation applications, and developing motivation for English. They also utilize specific approaches for each language skill, such as keeping vocabulary notebooks, utilizing online resources, practicing listening through various means, engaging in speaking activities, and improving writing skills through reading and structured writing. These findings emphasize the importance of addressing these challenges and supporting students in developing their language proficiency to succeed in their EMI courses.

Kırkgöz (2009)'s research resonates with the qualitative data of this paper as students found technical vocabulary hard to grasp without some initial exposure to EMI courses. In another study of Kırkgöz (2014), EMI students highlighted various challenges they encountered in their learning journey, such as difficulties in comprehending lectures and specific details, finding the process time-consuming, and facing challenges in understanding exam questions. Despite these challenges, EMI students acknowledged several advantages, including the opportunity to improve their language skills through EMI, enhanced access to popular English resources, better job prospects, and the ability to stay updated with global developments in the same research. These findings are also in line with the present research as students especially stated the difficulties they had in understanding the lectures due to the lecturers' different or insufficient accent or due to students' lack of experience. Additionally, students in the current research also perceive

studying their majors through EMI in HE as prestigious for job prospects and easy enterprise to the global knowledge.

A similar discovery was found in Yıldız et al.'s (2017) research. According to Yıldız et al. (2017), students face several language-related challenges in their EMI experience. These challenges include difficulties in acquiring technical vocabulary specific to their field of study, understanding and following lecturers who may use non-proficient language or switch between languages, adapting to content courses taught in English after completing PYPs, multitasking during lectures (e.g., listening and taking notes simultaneously), and engaging in effective listening and speaking as well as listening and writing activities. The results substantiate the findings of the qualitative data in the present paper. The participants of the semi-structured interview parallelly indicated that they had challenges in understanding the EMI lectures due to their lack of lexical knowledge and non-proficient accent of the non-native lecturers or lecturers' constant usage of code-switching. Students' multitasking also posed challenges during EMI courses for them as they found it hard to listen to the lectures with full heart while taking relevant notes.

Similarly, Soruç and Griffiths (2018) discovered parallel findings in their research. The students reported struggles in comprehending English-speaking lecturers, understanding the delivered content, keeping pace with the lecture, and grasping the topic. Additionally, they found it challenging to interact with foreign lecturers. These results attest to the similar difficulties students encounter in both researches.

Correspondingly, the findings of the mixed method research by Evans and Morrison (2011) highlighted that undergraduates in their early years of EMI programs encountered difficulties in understanding technical vocabulary and lectures, adapting to academic writing style, and meeting institutional and disciplinary requirements. However, the research also indicated that students attempted to overcome these challenges through high motivation, diligent effort, effective learning strategies, and supportive peer networks. The strategies for overcoming the linguistic challenges are in line with the findings of the semi-structured interview in the current research. Interviewees stated that

they made in-depth research for comprehending technical vocabulary, pushed themselves by studying hard beforehand to understand their lectures, immersed themselves in reading materials, conducted prior topic preparation, attempted to construct sentences with similar structures, and sought assistance from online programs to overcome writing challenges.

To summarize, all the data coming from quantitative and qualitative analysis highlights that students generally find the four language skills manageable in their EMI courses. Writing appears to be the most challenging skill, followed closely by speaking. Reading and listening skills are comparatively less difficult for students.

5.3. PEDAGOGICAL IMPLICATIONS AND FURTHER SUGGESTIONS

The results of the mixed method research suggest that university students should improve their academic linguistic and literacy skills in English through diverse activities including academic writing exercises, extensive reading, listening to real English materials, joining discussion sessions and group studies so as to cope with the linguistic difficulties they experience. Besides, lecturers may also support their students with academic language instruction on the structures and features of English by providing feedback and revising strategies to the needed extent alongside with the strategies and techniques for effective communication through interactive activities and feedback.

In order to overcome these difficulties struggled by students, it is crucial for HE institutions to provide language support programmes, training courses, and workshops for non-native students who have their courses through EMI so as to have a voice in the global academic community. This programme may also include English language materials and related resources, facilities for linguistic and cultural exchange with English native speakers.

The present research highlights the significance of addressing the challenges, particularly in writing, speaking and academic vocabulary by informing the related

educators and the policymakers in order to improve the quality of EMI in Turkey. Therefore, in order to achieve success in the global academic community, it is crucial for students and educational institutions to recognize the value of acquiring language proficiency and academic language literacy abilities in English.

Regarding gender, the results that female students face more challenges in reading, listening and writing in EMI courses than their male counterparts bear significant implications for EMI lecturers, curriculum designers and policy makers. Instructors should acknowledge the nature of gender differences in language learning, especially in EMI courses and supply more support and feedback for female students in writing, listening and reading skill in which they face more challenges. Moreover, curriculum designers should include activities and materials more oriented to the needs for male and female students. After all, policy makers should take into consideration gender implication when determining EMI policies by providing more facilities and sources for female students in EMI settings.

As another variable in this research, the discrepancies felt in two types of university bear significant implications for EMI institutions and instructors in both foundation and state universities. It is noteworthy to highlight the requirement for designating and teaching EMI courses in a way that considers the difficulties and accordingly the special needs students possess in both types of university by maintaining adequate language support and academic language materials to them. For instance, the findings of the present research emphasize that instructors in state universities may be required to concentrate more on building students' listening skills, while those in private universities may show more interest in developing comprehension techniques in reading skills.

In order to achieve success in their academic pursuit, universities should take into consideration offering discipline-based language support programmes to alleviate the challenges students face in distinct departments. While preparing the subject-specific language programmes (Hakim, 2023), universities should also provide more

comprehensive language programmes as per the majors by taking the international students and their additional language challenges they encounter into account and securing an inclusive EMI environment in which all the students have the same opportunities to improve their academic knowledge through EMI regardless of their language backgrounds. Not only the institutions but also the instructors themselves should consider the challenges students have in their EMI majors and design the related courses accordingly. For example, students in MLPS may need more support in all skills whereas their peers in social sciences may need support in reading and writing skills in EMI courses. Problematizing one-size-fits-all language policy in universities, Airey and his friends (2017) proposed flexible language policies so as to consider the specific needs of diverse departments. This may be the solution for this situation in Turkish contexts as well.

The findings regarding field of study highlight the need for discipline-specific language support programs across different fields of study to help students develop their academic language skills and overcome the difficulties they experience. Hakim (2021) stated about the language support in EMI majors in a conference that:

“It is typically generic rather than specific to students’ disciplinary needs. This echoes research in Anglophone contexts, which has highlighted the typical generic study skills approach taken to academic literacy and language development of students” (p.1).

The findings related to PYP illustrate both the challenges and inadequacies PYP presents, particularly in speaking, for successful EMI learning. These findings may necessitate reconsidering the focus and efficacy of PYP and making necessary changes and innovations of ELT curriculum in PYP to ensure that it aligns more closely with the requirements of EMI programs in Turkish HE context and to yield a consensus on the language proficiency threshold level necessary for the EMI programmes.

Furthermore, the results of this study highlight the need for ongoing evaluation and revision of EMI programs. Specifically, the findings suggest that the English Language Teaching (ELT) curriculum should be revised to better meet the demands of EMI programs. For instance, the curriculum could be redesigned to provide more support for speaking skills in the later years of study, or to focus more on listening skills in the earlier years.

Overall, this study underscores the importance of understanding the specific language learning needs and challenges of EMI students. By doing so, curriculum designers and instructors can provide more effective support and instruction, which can ultimately enhance the success of EMI students in their academic and professional pursuits.

5.4. LIMITATIONS AND SUGGESTIONS

While this research provides valuable insights into the language-related challenges encountered by Turkish students in EMI programs, there are certain limitations that should be acknowledged.

The study specifically targets the Turkish EMI programs in higher education, and as a result, the findings may not be directly generalizable to other countries or educational systems that have distinct linguistic and cultural contexts.

The findings of this research have limitations as obtaining data from foundation universities was difficult in the process and as a result, the data primarily focus on public universities that offer EMI undergraduate programs in Turkey. Future research should consider involving more foundation universities and exploring them to obtain understanding of a comprehensive overview of the entire country's situation or characteristics.

While the current research combines quantitative data analysis with thematic analysis of semi-structured interviews, the emphasis is more on the quantitative aspect. The qualitative data from interviews may provide rich insights, but a more extensive qualitative analysis could have offered a deeper understanding of the challenges faced by EMI students.

The research relies on self-reported data from student semi-structured interviews, which may be subject to bias and limitations such as social desirability bias or memory recall issues. The accuracy and reliability of the data are dependent on participants' perceptions and interpretations.

The main focus of the study is on internal factors that contribute to students' language challenges in EMI programs, while external factors such as teaching approaches, curriculum design, and institutional support are not extensively investigated. However, these external factors might also have a substantial impact on the development of language difficulties.

The research follows a cross-sectional approach, which examines the participants' experiences at a particular moment in time. However, conducting longitudinal studies that observe students' language difficulties over a longer duration could offer a more thorough insight into their language progression and changing challenges.

Notwithstanding these limitations, this study provides valuable insights into the language difficulties faced by Turkish EMI students and establishes a basis for future research in this field.

CONCLUSION

It has been witnessed a progressive demand in teaching academic subjects (mathematics, science, international relations, business, etc.) through English in higher education in a number of countries where English is not spoken as the native language in recent years (Dearden, 2014; Kamaşak, & Ozbilgin, 2019). The debate upon what EMI is in progress throughout the world. For this research, EMI is accepted 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 et al., 2018, p. 37). In Turkey, as a non-Anglophone country, the number of EMI universities show an increase in its number and expansion in Higher Education institutions as well.

To the best of understanding, there is a scarcity of studies that have thoroughly and systematically examined the language-related difficulties faced by students across various settings and diverse student populations. In light of this research gap, the present study aimed to address the linguistic challenges in different English language skills and the academic achievement of students in EMI programs. The study specifically investigated four academic divisions with full and partial EMI choices across state and foundation universities in Turkish settings by paying attention to gender, year of study and prior EMI experience as well. The thematic analysis of the semi-structured interview strengthened the results of the quantitative data by emphasizing the particular difficulties that the participants faced in relation to each language skill. This extensive study holds great significance as it fills a significant gap in the existing literature by being the first large-scale investigation of its kind. The objective of this research is to contribute to the existing knowledge and provide a deeper understanding of the specific challenges encountered by Turkish students when studying through EMI. The study aimed to shed light on the unique difficulties and clarify the context-specific factors that Turkish students face in EMI settings.

The core purpose of the first research question was to delve into the skill-based linguistic difficulties that EMI students encounter within the Turkish HE system. EMI students in Turkish HE context generally have a good grasp of four language constructs except for proofreading written work in the writing skill, which was the most challenging skill among the four language skills. Productive skills, particularly writing and speaking, were identified as more challenging than receptive skills such as reading and listening, and the most challenging linguistic items were consistently aligned with the most challenging subscales. The findings from the semi-structured interviews supported and confirmed that students faced the greatest challenges in productive skills, particularly speaking. The data collected through these interviews reinforced the notion that speaking was the skill that students struggled with the most.

The second question scrutinized the linguistic challenges students faced regarding the demographic variables such as gender, type of EMI, type of university, prior PYP experience, having full or partial EMI, year of study. The results highlighted that students generally find the four language skills manageable in their EMI majors. Writing appears to be the most challenging skill, followed closely by speaking. Reading and listening skills are comparatively less difficult for students. Female students experience more difficulties in writing, reading, and listening compared to male students, although no significant difference is observed in speaking. Students in foundation universities face more challenges in all four language skills compared to students in state universities. Within different fields of study, students in the MLPS department encounter more difficulties in writing, reading, and speaking compared to students in Social Studies and Medical Sciences. Partial EMI students experience more challenges across all four skills compared to full EMI students, with writing being the most challenging for partial EMI and speaking being the most challenging for full EMI. Students who took preparatory classes prior to their majors face more difficulties in all four skills compared to those who did not. Challenges in writing, reading, and listening decrease as the year of study progresses, but speaking remains consistently challenging.

The third question seeks to ascertain undergraduates' perception towards EMI through semi-structured interview. Interviews with Turkish HE students in EMI programs highlight various challenges, including unfamiliar words, difficulty expressing themselves, shyness to speak, lack of grammar knowledge, struggles in following lectures, and feelings of inadequacy. Strategies used by students to overcome these challenges include context-based word understanding, research, translation applications, motivation building, vocabulary notebooks, online resources, listening practice, speaking activities, and improving writing through reading and structured writing.

In a nutshell, the findings emphasize the need to address these challenges and support students in developing their language proficiency to succeed in EMI courses.

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APPENDICES

APPENDIX A

The University of Oxford's Divisions and Departments framework

Humanities	Mathematical, Physical and Life Sciences	Social Sciences	Medical Sciences
Classics	Computer Science	Anthropology and Museum Ethnography	Biochemistry
English Language and Literature	Chemistry	Archaeology	Clinical Medicine
History	Earth Sciences	Government	Clinical Neurosciences
History of Art	Engineering Science	Economics	Experimental Psychology
Medieval and Modern Languages	Materials	Education	Medicine
Music	Mathematics	Geography and the Environment	Obstetrics and Gynaecology
Oriental Studies	Physics	Interdisciplinary Area Studies	Oncology
Philosophy	Plant Sciences	International Development	Orthopaedics, Rheumatology and Musculoskeletal Sciences
Theology and Religion	Statistics	Technology and the Internet	Paediatrics
Art	Zoology	Business Law	Pathology Pharmacology
		Politics and International Relations Social Policy and Intervention Sociology	Physiology, Anatomy and Genetics Population Health Psychiatry Surgical Sciences Primary Care Health Sciences

Source: University of Oxford (2020). Divisions and Departments, University of Oxford. Retrieved 30 January 2020, from <http://www.ox.ac.uk/about/divisions-and-departments>.

APPENDIX B

The EMI Challenges Scales

Academic Writing Skills

- 1 Planning written assignments
- 2 Revising written work
- 3 Using appropriate academic style
- 4 Writing a bibliography/ references section
- 5 Proofreading written work
- 6 Referring to sources in written work
- 7 Summarizing/ paraphrasing ideas in sources
- 8 Organising ideas in coherent paragraphs
- 9 Expressing ideas clearly and logically
- 10 Linking ideas from different sources
- 11 Writing the introduction to an assignment
- 12 Writing the body of an assignment
- 13 Writing the conclusion to an assignment
- 14 Linking sentences smoothly

Academic Reading Skills

- 1 Understanding specific vocabulary
- 2 Working out the meaning of difficult words
- 3 Reading carefully to understand a text
- 4 Reading quickly to find specific information
- 5 Identifying supporting ideas and examples
- 6 Reading quickly to get overall meaning
- 7 Identifying the key ideas of a text
- 8 Taking brief, relevant notes
- 9 Understanding the organisation of a text

Academic Speaking Skills

- 1 Speaking accurately (grammar)
- 2 Speaking clearly (pronunciation)
- 3 Presenting information/ ideas
- 4 Participating actively in discussion
- 5 Communicating ideas fluently
- 6 Speaking from notes
- 7 Asking questions
- 8 Answering questions
- 9 Communicating ideas confidently
- 10 Using visual aids (e.g. PowerPoint)

Academic Listening Skills

- 1 Understanding the main ideas of lectures
- 2 Understanding the overall organisation of lectures
- 3 Understanding key vocabulary
- 4 Taking brief, clear notes
- 5 Identifying supporting ideas and examples
- 6 Understanding lecturers' accents
- 7 Following a discussion
- 8 Identifying different views and ideas
- 9 Understanding questions
- 10 Understanding classmates' accents

APPENDIX C

Semi-Structured Interview Protocol (Altay, & Yuksel, 2022)

- 1) Do you think you have been able to get academic information about your field, thanks to the education in English? (Does taking all the courses in English affect the extent to which you understand academic subjects or course contents?)
- 2) If you have difficulty in understanding the lessons taught in English, what kind of support do you apply for (e.g., using other sources, using a dictionary, searching the Turkish version on the internet, asking the lecturer, and asking a friend)?
- 3) Do you think your English language level is sufficient to understand the lessons taught in English? If not, how much English do you need to learn and study more?
- 4) What are the main difficulties you experience while taking courses in English?
- 5) What are the difficulties you experience particularly in reading, writing, listening, and speaking skills separately?

CURRICULUM VITAE

Personal Information

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Educational Background:

2001-2002: Safranbolu Anatolian High School

2005-2009: Marmara University (Bachelor's Degree)- English Language Teaching

2020-2020: Karabuk University (Masters' Degree)- Educational Administration and Management-First Term

2020-2023: Kocaeli University (Masters' Degree) - English Language Teaching

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2009-2023- Turkish Ministry of National Education- Expert English Teacher

Certifications:

2020: IMASCON 2020 Autumn Congress Proceedings- Distance Learning in 21st Century's Adult Learning

2021: IMASCON 2021 Spring Congress Proceedings - Confusion upon Specific Terms and Their Distinctions in the Scope: A Literature Review on ELF, EFL, CBI, CLIL, EMI, ESP, EAP

2021: Warwick 8th PGR Conference 2021, April (Paper Presentation)- Language Related Challenges and Proficiency Level Threshold in an English Medium Instruction Program