Canaran, Ö., Demirkol, T., Bayram, İ. & Doğan, M. (2022). Predicting perceived difficulty of English medium instruction (EMI) undergraduate courses. *International Online Journal of Education and Teaching (IOJET), 10*(1). 228-245.

Received : 10.10.2022
Revised version received : 08.12.2022
Accepted : 11.12. 2022

PREDICTING PERCEIVED DIFFICULTY OF ENGLISH MEDIUM INSTRUCTION (EMI) UNDERGRADUATE COURSES

Research Article

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Abstract

Despite extensive research on students' language-related difficulties, there is still little known about the predictors of difficulty of undergraduate courses for English Medium Instruction (EMI) students. The aim of the study was to investigate the predictive effect of several variables on the perceived difficulty of EMI from undergraduate students' perspectives. Data came from a questionnaire applied to 511 undergraduate students from three EMI universities in Turkey. A binary logistic regression was used for the analysis of multiple determinants that could predict the difficulty of undergraduate courses as perceived by students. Findings indicated that gender, department, type of secondary school, the amount of time for self-study in English, duration and perceived usefulness of English preparatory training, and perceived ability in writing, speaking, and grammar were not statistically significant predictors of perceived difficulty. However, age, grade level, perceived ability in reading, listening, and vocabulary as well as receiving additional language support were found to be the significant predictors of the perceived difficulty in undergraduate courses in Turkish EMI settings. EMI students may benefit from orientation programs that can assist them in adjusting to university life, as well as personal academic advising that provides strategies for developing learning skills in undergraduate courses.

Keywords: EMI students, undergraduate courses, perceived difficulty, logistic regression analysis

1. Introduction

Parallel to the growth of English as the medium of information communication across the globe, the employment of English has opened a research avenue under the title of English for Academic Purposes (EAP), particularly in tertiary education with much to offer for many, including instructors, students and researchers (Hyland & Hamp-Lyons, 2002; Hyland & Jiang, 2021). Now there is rapid spread of English into higher education (HE) institutions under the concept of English-medium instruction (EMI), which is a newly emerging field with its own implications for HE institutions not only in Europe (Schmidt-Unterberger, 2018) but also in non-Anglophone countries (Chapple, 2015; Galloway et al., 2020) including Turkey. Still, despite its wide-reaching popularity in HE, the practice of EMI is away from standardization due to the different needs of students and educational institutions. For instance, in European context, improving HE-students' English proficiency is not an objective (Schmidt-Unterberger, 2018) while in non-Anglophone contexts such as Japan and China, EMI is promoted as it enhances students' English proficiency (Galloway & Ruegg, 2020). Even this contradictory

approach to EMI suggests EMI is in need of further research that counts context-specific factors (Galloway & Ruegg, 2020) such as how it is/should be provided by instructors (Başıbek et al., 2014; Karakaş, 2016; Kırkgöz, 2009) and how difficult EMI is perceived by students (Lasagabaster, 2016; Curle et al., 2020; Kamaşak et al., 2021). In this study, we aim at exploring a set of variables ranging from gender to the amount of time dedicated to study English prior to EMI, all of which may possibly influence how students perceive the difficulty of EMI in the Turkish context.

1.1. The position of EMI in Turkey

Turkey has been mostly known as a country striving for a westernized approach in all aspects of society, including education. English has been welcomed as a gatekeeper to achieve higher technological improvements (Doğançay-Aktuna, 1998). Internationalization has found an enthusiastic audience in Turkish universities as internationalization of HE is associated with not only a high quality research account but also with international reputation (Özer, 2016). Internationalization of HE is particularly accompanied by Englishization of educational language and has put EMI in a controversial position in Turkey. A mild level of opposition against Englishization points at the lack of policy concerning the spread of English-origin words into Turkish glossary, which is taken as a threat to the purity of Turkish language (Doğançay-Aktuna, 1998). The spread of English among the youth has also been perceived as a sign of cultural degeneration (Selvi, 2014). More severe criticism is directed towards the side effects of English in academic settings. Accordingly, the most prevalent concern is about the low level of English proficiency attained through English teaching practices in Turkey (Madalinska-Michalak & Bavli, 2018; Coşkun, 2016; Education First Report, 2020). Coupled with this general low English proficiency in tertiary education, some are cautious towards EMI on the ground that students' intake of the content knowledge is lessened (Karakaş, 2016; Kırkgöz, 2014). All these concerns have failed short of degrading the importance attached to EMI as the number of EMI departments in Turkey is on the upswing. For its advocates, EMI maintains a crucial role in Turkish HE thanks to its numerous social and economic merits (Aslan, 2018).

1.2. Factors to affect students' attitude towards EMI

HE students in Turkey approach EMI with instrumental motivation and see it as a gatekeeper for their career promotion (Ekoç, 2020; Macaro & Akıncıoğlu, 2018; Turhan & Kırkgöz, 2018). Despite its benefits from the lens of students, EMI keeps being challenging for many (Yıldız et al., 2017) and the search for factors behind the challenges of EMI has inspired only a few of studies in the Turkish context up to now.

Kamaşak et al. (2021) approached the topic by focusing on linguistic challenges EMI students (N= 498) reported in Turkish HE. Results pointed at academic writing and vocabulary as difficult topics for the majority of students. The study also indicated students proving their language ability through University Proficiency Exam experienced more difficulty in meeting the linguistic demands in comparison to ones presenting an acceptable score from an internationally recognized language proficiency exam. Along with the type of proficiency exam, two other factors, namely having EMI experience in the secondary level and the content of English Preparatory Program (EPP), were found to be indicators of the difficulty for students.

In another study, Ekoç (2020) investigated why students (N=295) in a Turkish technical university had difficulty in studying through EMI. The reasons were attributed to inadequate English proficiency of students and lecturers. Turhan and Kırkgöz (2018) also investigated the challenges experienced by a group of students (N=125) studying mechanical engineering at

Turkish EMI. Results highlighted a set of factors ranging from inability to understand the content of the classes to the loss of concentration due to the non-standard use of English among lecturers.

Curle et al. (2020) focused on language proficiency to see how well it predicts students' academic performance in EMI. Unlike previous researchers, Curle et al. (2020) did not find general English proficiency to play a predictive role in students' general academic performance in the EMI context. The researchers concluded that general English proficiency was not related to EMI performance and what needed to be searched in relation to EMI achievement of students was their proficiency in academic English.

Apart from studies where language proficiency was inspected as a predictor of difficulty for EMI students, Macaro and Akıncıoğlu (2018) examined gender and the year of study as variables to influence difficulties of EMI. Girls expressed significantly more difficulty in giving a public speech while there was no other difference between boys and girls in terms of difficulty. The year of study was reported to affect the motivational level of students as freshmen expressed more positivism towards EMI than sophomores.

As the picture drawn by this set of studies displays, factors shaping students' EMI experience are multiple and there is still a gap of research into the elements related to EMI experience of students. As such, this study aims to fill in this gap by investigating the topic in relation to an inclusive set of variables with a representative sampling size.

1.3. Purpose of the Study

Despite a great number of studies examining Turkish EMI students' motivation, needs and perceptions, much remains to be learned about the factors affecting their perceptions regarding the difficulty of undergraduate courses in EMI. Our research study is exploratory in nature and aims to investigate the predictors of perceived difficulty of undergraduate studies for EMI students. To this end, this study investigated the following research question:

- Which determinants predict the difficulty of undergraduate courses as perceived by EMI students?

This research aims to contribute to the EMI literature through the systematic examination of specific determinants that might affect the perceived difficulty of undergraduate courses in EMI contexts. Variables compiled as a result of literature review are as follows:

- gender (Macaro & Akıncıoğlu, 2018; Lasagabaster, 2016),
- age (Richardson & Woodley, 2003),
- grade (Turhan & Kırkgöz, 2018; Macaro & Akıncıoğlu, 2018),
- department (Ekoç, 2020; Turhan & Kırkgöz, 2018),
- type of high school (Doğançay-Aktuna, 1998),
- age at which English was learned (Güneş, 2011),
- duration and perceived usefulness of preparatory English education (British Council & TEPAV, 2015),
- perceived proficiency in four skills, grammar and vocabulary (Altınmakas & Bayyurt, 2019; Kamaşak et al., 2021) ,
- extra support to improve English proficiency (Lee, 2010),

- amount of time spent to study English (Karahan, 2007)

Although most of the variables were investigated directly in relation to EMI from different perspectives, some others such as age and type of high school were discussed as predictors of academic attainment but not directly in EMI contexts. Our study is preliminary in attempting to investigate such a comprehensive list of factors as the predictors of EMI students' perceived difficulty in following undergraduate programs.

2. Method

2.1. Participants

This study was conducted in Turkey, where HE is a growing sector accommodating millions of students and academicians. Currently, among 207 Turkish universities, 110 (53%) offer EMI. In cases where English is the medium of instruction, instruction is either given fully in English (100%) or 30% in English, which means that at least one of the courses in a term is offered in English. Participants were chosen from three universities (one state, two private) that offer EMI 100%. Research sites were decided based on practicality and voluntariness to participate.

Our research population -in terms of gender- included 65% male, 35% female (from university 1), 35% male, 65% female (from university 2), and 55% male, 45% female students (from university 3). When the ratio of English prep school enrollments was considered during the time of data collection, our research population consisted of 80% enrollment rate (university 1), 80% enrollment rate (university 2), 85% enrollment rate (university 3). With regard to the type of high school participants graduated, our research population was made of 40% state school graduates, 60% private school graduates (university 1), 60% state school graduates, 40% private school graduates (university 2), 90% state school graduates, 10% private school graduates (university 3).

In total, 511 undergraduate students took part in this study. 41% of the participants were female, and 59% of them were male. 49 % of our participants were studying in the fields of educational sciences, 32 % were from the social sciences, while 19 % from the fields of engineering. 79% of the participants had attended English prep school. 65% of the participants graduated from state high schools and 35% from private colleges. Thus, our data set is believed to be representative of the research population.

2.2. Data Collection Tools

This study applied a survey methodology for data collection. Participants were asked to respond to a self-administered questionnaire without the intervention of the researchers. The questionnaire was developed by the researchers and shared with the respondents through their e-mails or online environments (WhatsApp groups, forums, and social media, etc.). Participation was voluntary and we tried to reach as many students as possible by asking for help from our colleagues and former students.

The questionnaire included three parts. In part 1, there were 5 items seeking demographic information such as age, gender, grade etc. In part 2, participants were asked to respond to items related with their previous language learning experiences as well as their perceived competencies in language use and skills. In Part 3, we asked participants questions about their undergraduate courses. The items in the questionnaire were given to the participants in Turkish. Data was gathered in the fall semester of the 2019-2020 academic year.

2.3. Data Analysis

A binary logistic model was fitted to the data to investigate the possible factors affecting perceived difficulty of undergraduate courses. Each variable was tested to see whether it had a significant effect on perceived difficulty of undergraduate courses, and non-significant variables were removed from the analysis. The study was conducted taking only the significant variables into consideration.

Categorical variables used in the study were gender, age, grade, department, type of high school, age at which English was learned, the duration of preparatory English education, perceived usefulness of preparatory English education, perceived proficiency in reading writing, listening speaking, grammar and vocabulary, extra support to improve English proficiency, and amount of time spent to study English.

Before conducting logistic regression, multicollinearity and outliers were detected. To prove that multicollinearity was not present in the dataset, tolerance limit was sought to be greater than 0,5 and closer to 1, and the variance inflating factor (VIF) was sought to be less than 10. To show that our dataset was free from outliers, Cook's distance was considered to be less than 1.

3. Results

An analysis of values in the study showed values of tolerance were between 0,683 and 0,960, and all VIF values were less than 1,463. Thus, there was no multicollinearity in the dataset. Taking Cook's distance into consideration, 8 outliers were removed from the data set. The rest of the items were less than 0,427, proving that no outliers were present. After all assumptions were met, logistic regression was conducted with 511 data in total, 503 of which were valid data and 8 of which were invalid data.

The responses to the dependent variable "having difficulty in undergraduate courses" were coded as either "0" or "1". For students who indicated that they had difficulty following their undergraduate courses in English, the dependent variable was coded as 1; and for those who indicated that they did not have difficulty following their undergraduate courses in English, the dependent variable was coded as 0.

Table 1 displays which categorical variables (defined as dummy variables) logistic regression analysis were based on. Logistic regression analysis was carried out based on the variables coded as "0".

Table 1.

Coding of Categorical Variables

		Frequency	Parameter coding		
			(1)	(2)	(3)
Reading	Insufficient	2	1.000	.000	.000
	Moderately sufficient	36	.000	1.000	.000
	Sufficient	263	.000	.000	1.000
	Very sufficient	202	.000	.000	.000
Vocabulary	Insufficient	15	1.000	.000	.000
	Moderately sufficient	130	.000	1.000	.000
	Sufficient	245	.000	.000	1.000
	Very sufficient	113	.000	.000	.000

Listening	Insufficient	13	1.000	.000	.000
	Moderately sufficient	95	.000	1.000	.000
	Sufficient	246	.000	.000	1.000
	Very sufficient	149	.000	.000	.000
Grade	1.0	359	1.000		
	2.0	144	.000		
In need of extra support to improve current English	No	301	1.000		
	Yes	202	.000		
Age	17-20	303	1.000		
	21-24	200	.000		

Taking the predictor variables used in this study into account, values regarding the observed and predicted frequencies have been displayed in Table 2.

Table 2.

The Observed and the Predicted Frequencies by Logistic Regression with the Cutoff of 0.50 in Block 0

			Prediction		
			Having difficulty in undergraduate courses		
	Observed		No	Yes	Prediction %
Step 0	Having difficulty in undergraduate courses	No	345	0	100.0
		Yes	158	0	.0
	Average %				68.6

a. Fixed variable has been included in the model
b. Cut off = 0,5

An analysis of Table 2 indicates that all students were categorized on the basis of not having difficulty in their undergraduate courses, and the percentage of correct categorization was

found to be 68.6%. In other words, the percentage of correct predictions on average was found to be 68.6 in Block 0.

Table 3 displays the results of the Omnibus test, pointing to a significant difference between Block 0 and Block 1 (p<0, 05).

Table 3.

Omnibus Test Results

		Chi-square	sd	p
Step 1	Step	194	12	<.001
	Block	194	12	<.001
	Model	194	12	<.001

* Block 1: Method = Enter

As a result of the Omnibus test, Ho was rejected and it was concluded that there was a significant difference between Block 0 and Block 1, thus proving the model to be more accurate. Hosmer-Lemeshow test was conducted to see whether there was a significant difference between predicted and observed values.

Table 4.

Hosmer–Lemeshow Test Results

Step	Chi-square	sd	p
1	13.557	8	.094

An analysis of the results of Hosmer–Lemeshow test (see Table 4) shows there is an insignificant difference between observed and predicted values (p>0,05). In other words, the predictive ability of the model overlaps with the actual situation.

Nagelkerke results, indicating the practicality of the model as well as to what extent independent variables explain the dependent variables, have been displayed in Table 5.

Table 5.

Value of Nagelkerke R^2

Step	Nagelkerke R^2
1	.450

The value of nagelkerke R^2 (see Table 5) indicates that independent variables explain the 45% of variance in the dependent variable (having difficulty in undergraduate courses). In linear regression, R^2 has a clear definition: It is the proportion of the variation in the dependent variable that can be explained by predictors in the model (Peng et al., 2002).

An analysis of the predictive ability of the model displayed in Table 6 shows that the average goes up to 77.9% in Block 1. This indicates a proportion of improvement in the predictive

ability of the model since the percentage of correct predictions was found to be 68.6 in Block 0. In this case, categorical variables in the logistic regression model can be investigated.

Table 6. *The Observed and the Predicted Frequencies by Logistic Regression with the Cutoff of 0.50 in Block 1.*

			Prediction		
			Having difficulty in undergraduate courses		
	Observed		No	Yes	Prediction %
Step 1	Having difficulty in undergraduate courses	No	312	33	90.4
		Yes	78	80	50.6
	Average %				77.9

a. Cut off = 0,5

As displayed in Table 7, categorical variables such as “age”, “grade”, “reading”, “listening”, “vocabulary”, “In need of extra support to improve current English” have been included in the model as their p-values were less than 0,05. ($p<0,05$). All variables with p-values greater than 0,05 have been excluded from the model ($p>0,05$). With reference to B coefficient, the logistic regression model is assessed in terms of the direction of variable association and its magnitude among the research variables.

With reference to B coefficient, magnitude and direction of the effect of each individual independent variable to the dependent variable (having difficulty in undergraduate courses) were analyzed.

Table 7.

Variables in the Logistic Regression Model

		B	S.E.	Wald	df	Sig.	Exp(B)
Step 1[a]	Age (1)	-.607	.258	5.546	1	.019	.545
	Grade (1)	1.379	.332	17.219	1	.000	3.972
	Reading			12.261	3	.007	
	Reading (1)	21.273	28323.561	.000	1	.999	1732801108.881
	Reading (2)	2.181	.644	11.467	1	.001	8.853
	Reading (3)	.095	.293	.106	1	.745	1.100
	Listening			17.500	3	.001	
	Listening (1)	21.359	10063.716	.000	1	.998	1888109622.335
	Listening (2)	1.515	.400	14.346	1	.000	4.549
	Listening (3)	.468	.344	1.847	1	.174	1.597
	Vocabulary			6.917	3	.075	
	Vocabulary (1)	1.568	.815	3.700	1	.054	4.797
	Vocabulary (2)	.705	.391	3.253	1	.071	2.024
	Vocabulary (3)	.219	.358	.372	1	.542	1.244

Extra Support (1)	-1.260	.243	26.887	1	.000	.284
Constant	-2.066	.460	20.164	1	.000	.127

a. Variable(s) entered on step 1: Age, Grade, Reading, Listening, Vocabulary, Extra Support.

As indicated in Table 7, an analysis of the difference between groups of variables yielded the following results;

- a significant difference in having difficulty in undergraduate courses with reference to age was detected. EMI students aged 21-24 reported 1,84 times (1/0,545) more difficulty in undergraduate courses when compared to those aged 17-20.
- a significant difference in having difficulty in undergraduate courses with reference to grade was detected. Freshmen EMI students had 3,97 times more difficulty in undergraduate courses when compared to sophomores.
- a significant difference in having difficulty in undergraduate courses with reference to reading skill was detected. Students who thought their reading skills were insufficient indicated 8,85 times more difficulty in undergraduate courses when compared to the ones with very sufficient reading skills.
- a significant difference in having difficulty in undergraduate courses with reference to listening skill was detected. Students who thought their listening skills were insufficient had 4,55 times more difficulty in undergraduate courses when compared to the ones with very sufficient listening skills.
- a significant difference in having difficulty in undergraduate courses with reference to knowledge of vocabulary was detected. Students who thought their knowledge of vocabulary was insufficient had 4,80 times more difficulty in undergraduate courses when compared to the ones with very sufficient knowledge of vocabulary. In addition, students who thought their knowledge of vocabulary was moderately sufficient had 2,02 times more difficulty in undergraduate courses when compared to the ones with very sufficient knowledge of vocabulary.
- a significant difference in having difficulty in undergraduate courses with reference to being in need of extra support to improve current English was detected. Students who needed extra support experienced 3,52 times (1/0,284) more difficulty in undergraduate courses when compared to the ones who did not need such kind of extra support.

4. Discussion

A logistic regression analysis revealed gender, department, type of secondary school, the amount of time for self-study in English, duration and perceived usefulness of English preparatory training, and perceived ability in writing, speaking, and grammar were not statistically significant predictors of perceived difficulty of undergraduate courses. However, age, grade level, perceived ability in reading, listening and vocabulary as well as receiving additional language support were predicting perceived difficulty of undergraduate courses.

We considered gender as a variable since female learners are commonly regarded as more enthusiastic about language learning than male learners (Lasagabaster, 2016). Our findings did not indicate gender as a significant predictor and corroborated previous studies (e.g., Macaro & Akıncıoğlu, 2018; Pun & Jin, 2021) revealing no significant difference between male and female learners regarding the difficulties they experience while taking EMI courses.

EMI students' fields of study could be worthy of investigation due to subject-specific requirements and variations in the knowledge system of different disciplines (Hyland, 2006; Kuteeva & Airey, 2014). However, we found students' department did not predict perceived difficulty, which contradicts a recent study (Kamaşak et al., 2021) revealing EMI students in the social sciences encountered greater challenges in reading and writing than students of the engineering department. Participant profile might be a limitation here since the majority of our research population consists of students from the field of educational and social sciences.

Results showed prior exposure to English did not have a predictive effect on difficulty as similarly suggested by Pun and Jin (2021). Students graduating from private secondary schools are conceived to face fewer challenges in EMI universities since many private schools in Turkey promote their curricula, boasting the number of English lessons and international language exams evaluating students' language proficiency. Despite this added focus on English education, these schools may be proportionally low in quality standards. In other words, our results can be taken as evidence of the fact that a higher number of English courses given by private secondary schools does not guarantee higher quality in language education.

Further, we considered students engaging in more self-study time would have fewer difficulties in following academic courses, but we found this did not predict perceived difficulty. This could be related to such factors as the scarcity of quality time spent during self-study, affective and motivational variables, and students' lack of awareness and guidance concerning their needs. Thus, students might need more and effective academic advising to positively influence their academic development through encouragement and strategies for study skills (Young-Jones et al., 2013)

The reason for selecting the length and perceived usefulness of the EPP as a variable was that EMI students in Turkey have one to two academic years of intensive language education in EPPs. Thus, the duration they spent in an EPP and their (perceived) beliefs about its effectiveness might impact challenges they have in EMI studies. Our findings revealed EPP status was not a significant predictor of perceived difficulty. We were surprised to obtain this finding since students' low language proficiency (Aizawa et al., 2020; Başıbek et al., 2014; Macaro, 2019) and the mismatch between the curricula of EPPs and academic programs (Kırkgöz, 2009; Yıldız et al., 2017) are commonly associated with the problems in EPPs.

Reported proficiency in writing, speaking and grammar was not found as significant predictors of perceived difficulty. This findings contradicts previous research reporting writing (e.g., Breeze & Dafaouz, 2017; Evans & Morrison, 2011; Kamaşak et al., 2021) and speaking (e.g., Kamaşak et al., 2021; Öner & Mede, 2015) were posing difficulties for EMI students. This might need further investigation to reveal whether there were any contextual practices to help students' development in these productive language skills. Grammar did not predict difficulty for students in our context. We might associate this with secondary schools' language curricula putting a great deal of emphasis on the teaching of grammar as reported by British Council and TEPAV (2013).

Considering the variables having predictive effective, we found students of ages from 21 to 24 had more difficulties in undergraduate courses than those of ages from 17 to 20. We refrain from a discussion about an age-related cognitive decline, since there is not a wide gap between the ages of the two groups, but we might ascribe the increased difficulty to the increasingly specialized content of the academic programs in EMI. As students enroll in new classes, the EMI curriculum requires them to put more effort into dealing with complex and specific concepts, register, discourse, and assignments in the courses (Evans & Morrison, 2011; Kamaşak et al., 2021; Pun & Jin, 2021).

We also found freshmen faced more perceived difficulty than sophomores in pursuing undergraduate courses. We can attribute this to students' immediate shift to the EMI after a non-EMI secondary education. Considering the general English proficiency ranking of Turkey by the EF English Proficiency Index (2020), where it was ranked 33rd out of 34 countries in Europe, it is evident Turkey is performing very low in foreign language education. Therefore, before entering an academic program at the university level, most students are supported through an intensive EPP for different periods of time. Moving from a Turkish medium instruction (TMI) during primary and secondary education to EMI in tertiary education with low proficiency (British Council & TEPAV, 2015), students need to cope with both adapting to a new educational and social life in a university and the pressure of learning a foreign language in such restricted time. Completion of an EPP with varied proficiency levels and abilities is followed by another challenging transition, from an EPP to an academic English program. Freshmen might struggle in adapting themselves to academic life while simultaneously striving to compensate for the disparity between the training in an EPP and the requirements of undergraduate courses (Kırkgöz, 2009). This finding corroborates Evans and Morrison's (2011) longitudinal research with 3,000 freshmen in Hong Kong, where they found first-year students faced various academic problems. Similarly, Pun and Jin (2021) revealed first-year undergraduates in a Chinese EMI perceived a greater degree of difficulty in content learning than senior students.

Our results further indicated perceived ability in reading, listening, and vocabulary were the predictors of perceived difficulty in EMI in contrast to the previous studies (Kamaşak et al., 2021; Uchihara & Harada, 2018). Here, we might open up a discussion about L1 reading literacy of Turkish students as the development of literacy in L1 can support the literacy development in L2 (Brantmeier, 2005). According to PISA 2018 statistics, reading literacy of 15-year-old Turkish students was lower than the OECD average, indicating most secondary students enroll in EMI universities with low reading performance, even in their native language. This problem might deepen when students are expected to develop reading literacy in L2 to successfully follow EMI curricula. Besides low L1 and L2 reading proficiency, students face the challenge of learning English as a foreign language. Therefore, students' exposure to technical and academic English texts in the classroom and opportunities for using English outside the classroom through extracurricular programs need to be increased with the joint undertaking of EPP staff and EMI faculty.

Listening was found as a predictor of perceived difficulty. There are many factors posing challenges to students in listening (Aizawa et al., 2020; Chan, 2015). In our case, the problem might rest with the classroom being the only setting for language learning. So the amount and quality of listening instruction at school is crucial to supporting students in improving their listening abilities. However, the British Council and TEPAV report (2013) revealed in state schools there were only minor outcomes in terms of students speaking/listening in lessons and teachers put too much emphasis on grammar and too little emphasis on speaking and listening skills in the classroom. In addition, a study by Çakır (2018) revealed although EFL teachers in Turkey accept the significance of listening in language learning, many neglect listening skills in their lessons.

Vocabulary was identified as another predictor of perceived difficulty by EMI learners. We know EPPs are the first stage where students could learn subject-specific English words but vocabulary training in most EPPs is based on the themes covered in the general English textbooks, which might prevent students from developing their knowledge in subject-specific terminology. Similarly, former research from other EMI settings revealed vocabulary as a major barrier for students in following academic programs (Başıbek et al., 2014; Evans & Green, 2007; Macaro et al., 2020). We believe language teaching should not be considered as

the sole responsibility of English teachers in EPPs. EMI staff should be aware of the linguistic challenges students face, and they should be supported through professional development programs about how students learn L2 vocabulary (Macaro, 2019). We can also suggest EPP and EMI curriculum developers implement a data-driven learning approach through corpus studies. With such approach, program planners, test developers, and teachers can focus on a subject-specific vocabulary load and the lexical and syntactic complexity of texts, and can prepare word lists for English for Academic Purposes (Bi, 2020; Jablonkai, 2021). Corpus studies might help in the teaching and learning of disciplinary vocabulary and in providing familiarity with the textual conventions of a specific discipline (Ackerley, 2017).

Lastly, we found students receiving additional language support during EMI studies had more difficulty than those who did not receive such support. Students receiving extra language support could be those of lower language proficiency, thereby increasing the likelihood that these students would experience difficulties in following the academic program. This finding could support the studies by Aizawa and Rose (2019) and Curle et al. (2020), pointing toward a significant relationship between students' language proficiency and difficulties in content learning. Both studies argued that providing language support to those with proficiency problems is important, but the type of language support is of the utmost importance in helping students overcome challenges. The nature of the language support itself, whether it is relevant, timely, effective, and tailored is a question. Further, by whom this support will be provided is controversial; as was previously stated, EMI faculty do not accept responsibility for language teaching (Dearden & Macaro, 2016) and language teachers have difficulty in identifying the type and amount of language support students from different disciplines and grade-levels are in need of. Thus, we call for a collaborative action taken by language experts and EMI faculty for discussing and resolving the situational and discipline-specific problems of students and spending time and energy together for the promotion of quality education.

5. Conclusion

The study researched the variables with a predictive effect on students' perceived difficulties while studying academic courses in EMI universities. Implications suggest EMI freshmen in Turkey would benefit from needs-based orientation programs planned with the joint efforts of the faculty. Such programs should enable new students to adapt socially, psychologically, and academically to a new phase in their lives. Academic advising systems should be structured in a more systematic and learner-centered manner. From the start of the EPP, academic advisors and language teachers can collaborate to better know the learner as a person and as a university learner, discussing his/her strengths, areas of improvement, and expectations. With effective mentoring, EMI students in our context might develop awareness of their needs, improve self-study and language skills, and thrive in their academic program and future professional life.

Considering the circumstances in our context, the claim of raising individuals with knowledge and skills needed to compete in the international business arena might not be realistic. To achieve this goal in a realistic fashion, we must hear students' voices more and make more concerted efforts to address the difficulties they experience in EMI. Discussions on the incompatibility between the curricula of academic programs and EPP departments should be carried forward by professional development programs for EMI staff, including decision-makers and faculty members. Ensuring quality education means basing education on well-established quality management systems. We should also modify individual working habits in the academy in favor of more collaborative and cooperative efforts for the benefit of learners.

We need qualitative data to gain deeper insights into our learners' perceived difficulties in following undergraduate courses in EMI, which is a limitation to our study. Another limitation is the research population, consisting of only three EMI universities in Turkey. Therefore, our findings and suggestions could not be generalized to other EMI settings either at a local or international level.

References

Ackerley, K. (2017). Effects of corpus-based instruction on phraseology in learner English. *Language Learning and Technology*, *21*(3), 195-216.

Aizawa, I., & Rose, H. (2019). An analysis of Japan's English as a medium of instruction initiatives within higher education: the gap between meso-level policy and micro-level practice. *Higher Education*, *77*(6), 1125-1142. https://doi.org/10.1007/s10734-018-0323-5

Aizawa, I., Rose, H., Thompson, G., & Curle, S. (2020). Beyond the threshold: Exploring English language proficiency, linguistic challenges, and academic language skills of Japanese students in an English medium instruction programme. *Language Teaching Research*, 1-25. doi. 10.1177/1362168820965510

Altınmakas, D., & Bayyurt, Y. (2019). An exploratory study on factors influencing undergraduate students' academic writing practices in Turkey. *Journal of English for Academic Purposes*, *37*, 88-103. https://doi.org/10.1016/j.jeap.2018.11.006

Aslan, M. (2018). The debate on English-medium instruction and globalisation in the Turkish context: a sociopolitical perspective. *Journal of Multilingual and Multicultural Development*, *39*(7), 602-616. https://doi.org/10.1080/01434632.2017.1417413

Başıbek, N., M. Dolmac, B. C. Cengiz, B. Bür, Y. Dilek, and B. Kara. (2014). Lecturers' perceptions of English medium instruction at engineering departments of higher education: a study on partial English medium instruction at some state universities in Turkey. *Procedia- Social and Behavioral Sciences* 116, 1819–1825. https://doi.org/10.1016/j.sbspro.2014.01.477

Bi, P. (2020). Revisiting genre effects on linguistic features of L2 writing: A usage-based perspective. *International Journal of Applied Linguistics*, 1–16. https://doi.org/10.1111/ijal.12297.

Brantmeier, C. (2005). Effects of reader's knowledge, text type, and test type on L1 and L2 reading comprehension in Spanish. *Modern Language Journal, 89,* 37-53. https://doi.org/10.1111/j.0026-7902.2005.00264.x

Breeze, R., & Dafouz, E. (2017). Constructing complex cognitive discourse functions in higher education: An exploratory study of exam answers in Spanish- and English-medium instruction settings. *System, 70,* 81–91. https://doi.org/10.1016/j.system.2017.09.024

British Council and TEPAV. (2013). Turkey national needs assessment of state school English language teaching. Ankara: Mattek. https://www.britishcouncil.org.tr/sites/default/files/turkey_national_needs_assessment_of_state_school_english_language_teaching.pdf

British Council and TEPAV (2015). The state of English in higher education in Turkey. https://www.britishcouncil.org.tr/sites/default/files/he_baseline_study_book_web_-_son.pdf

Çakır, I. (2018). Is listening instruction neglected intentionally or incidentally in foreign language teaching contexts?. *Journal of Language and Linguistic Studies*, *14*(2), 154-172.

Chan, S. (2015). Linguistic challenges in the mathematical register for EFL learners: Linguistic and multimodal strategies to help learners tackle mathematics word problems. *International Journal of Bilingual Education and Bilingualism*, *18*, 306–318. https://doi.org/10.1080/13670050.2014.988114

Chao-Ying Joanne Peng, Kuk Lida Lee & Gary M. Ingersoll (2002). An Introduction to Logistic Regression Analysis and Reporting, *The Journal of Educational Research*, *96*(1), 3-14. https://doi.org/10.1080/00220670209598786

Chapple, J.(2015). Teaching in English Is not necessarily the teaching of English. *International Education Studies*, *8*(3), 1–13. doi: https://doi.org/10.5539/ies.v8n3p1

Coskun, A. (2016). Causes of the "I can understand English but I can't speak" syndrome in Turkey. *Journal on English Language Teaching*, *6*(3), 1-12.

Cummins, J. (1979). Cognitive/Academic Language Proficiency, Linguistic Interdependence, the Optimum Age Question and Some Other Matters. *Working Papers on Bilingualism*, No. 19.

Curle, S., Yuksel, D., Soruç, A., & Altay, M. (2020). Predictors of English Medium Instruction academic success: English proficiency versus first language medium. *System, 95,* 102378. doi: https://doi.org/10.1016/j.system.2020.102378

Dearden, J. & Macaro, E. (2016). Higher education teachers' attitudes towards English: A three country comparison. *Studies in Second Language Learning and Teaching, 6* (2), 3–34. Doi: https://doi.org/10.14746/sllt.2016.6.3.5

Dogancay-Aktuna, S. (1998). The spread of English in Turkey and its current sociolinguistic profile. *Journal of multilingual and multicultural Development, 19*(1), 24-39.

Education First (2020). EF English Proficiency Index. Retrieved from https://www.ef.com.tr/assetscdn/WIBIwq6RdJvcD9bc8RMd/legacy/__/~/media/centralefcom/epi/downloads/full-reports/v10/ef-epi-2020-english.pdf

Ekoç, A. (2020). English Medium Instruction (EMI) from the perspectives of students at a technical university in Turkey. *Journal of Further and Higher Education, 44*(2), 231-243. doi: https://doi.org/10.1080/0309877X.2018.1527025

Evans, S., & Green, C. (2007). Why EAP is necessary: A survey of Hong Kong tertiary students. *Journal of English for Academic Purposes, 6*(1), 3-17. doi: 10.1016/j.jeap.2006.11.005

Evans, S., & Morrison, B. (2011). Meeting the challenges of English-medium higher education: The first-year experience in Hong Kong. *English for Specific Purposes*, *30*(3), 198-208. doi: https://doi.org/10.1016/j.esp.2011.01.001

Galloway, N., Numajiri, T., & Rees, N. (2020). The "internationalisation", or "Englishisation", of higher education in East Asia. Higher Education, 80, https://doi.org/10.1007/s10734-019-00486-1.

Galloway, N., & Ruegg, R. (2020). The provision of student support on English medium instruction programmes in Japan and China. J*ournal of English for Academic Purposes, 45*, 1-12. doi: https:// 10.1016/j.jeap.2020.100846

Güneş, S. (2011). The background factors that influence learners' English proficiency. (Unpublished master thesis). Bilkent University, Ankara, Turkey.

Hyland, K. (2006). *English for academic purposes: An advanced resource book*. Routledge.

Hyland, K., & Hamp-Lyons, L. (2002). EAP: Issues and directions. *Journal of English for Academic Purposes, 1*, 1-12.

Hyland, K., & Jiang, F. K. (2021). A bibliometric study of EAP research: Who is doing what, where and when? *Journal of English for Academic Purposes, 49*, 1-12. doi: https://doi.org/10.1016/j.jeap.2020.100929

Jablonkai, R. R. (2021). Corpus linguistic methods in EMI research: A missed opportunity?. In *Research Methods in English Medium Instruction* (pp. 92-106). Routledge. doi: 10.4324/9781003025115-7

Kamaşak, R., Sahan, K., & Rose, H. (2021). Academic language-related challenges at an English-medium university. *Journal of English for Academic Purposes, 49*, 100945. doi: 10.1016/j.jeap.2020.100945

Karahan, F. (2007). Language attitudes of Turkish students towards the English language and its use in Turkish context. *Çankaya University Journal of arts and sciences*, *1*(7), 73-87.

Karakas, A. (2016). Turkish lecturers' views on the place of mother tongue in the teaching of content courses through English medium. *Asian Englishes*, *18*(3), 242-257. doi: https://doi.org/10.1080/13488678.2016.1229831

Karakaş, A. (2018). Visible-language covert policy: An investigation of language policy documents at EMI universities in Turkey. *International Online Journal of Education and Teaching (IOJET), 5*(4), 788-807.

Kırkgöz, Y. (2009). Students' and lecturers' perceptions of the effectiveness of foreign language instruction in an English-medium university in Turkey. *Teaching in higher education, 14*(1), 81-93. doi: https://doi.org/10.1080/13562510802602640

Kırkgöz, Y. (2014). Students' perceptions of English language versus Turkish language used as the medium of instruction in higher education in Turkey. Turkish Studies, *9*(12), 443-459. doi:http://dx.doi.org/10.7827/TurkishStudies.7596

Kuteeva, M., & Airey, J. (2014). Disciplinary differences in the use of English in higher education: Reflections on recent language policy developments. *Higher Education, 67*(5), 533-549. doi: https://10.1007/s10734-013-9660-6.

Lasagabaster, D. 2016. "The Relationship Between Motivation, Gender, L1 and Possible Selves in English-medium Instruction." *International Journal of Multilingualism 13*(3): 315–332. doi:https://doi.org/10.1080/14790718.2015.1105806

Lee, B. (2010). The pre-university English-educational background of college freshmen in a foreign language program: A tale of diverse private education and English proficiency. *Asia Pacific Education Review, 11*(1), 69-82. doi: https://10.1007/s12564-010-9079-z

Lee, K., & Lee, H. (2018). Korean graduate students' self-perceptions of English skills and needs in an English-medium instruction context. *Journal of Multilingual and Multicultural Development, 39*(8), 715-728.doi: https://doi.org/10.1080/01434632.2018.1438442

Macaro, E. (2019). Exploring the role of language in English medium instruction. *International Journal of Bilingual Education and Bilingualism*. *23*(3), 263-276. doi: https://doi.org/10.1080/13670050.2019.1620678

Macaro, E., & Akincioglu, M. (2018). Turkish university students' perceptions about English Medium Instruction: exploring year group, gender and university type as variables. *Journal of Multilingual and Multicultural Development, 39*(3), 256-270. doi: https://doi.org/10.1080/01434632.2017.1367398

Macaro, E., Tian, L., & Chu, L. (2020). First and second language use in English medium instruction contexts. *Language Teaching Research, 24*(3), 382-402. doi:

https://doi.org/10.1177/1362168818783231

Madalińska-Michalak, J., & Bavli, B. (2018). Challenges in teaching English as a foreign language at schools in Poland and Turkey. *European Journal of Teacher Education, 41*(5), 688-706. doi: https://doi.org/10.1080/02619768.2018.1531125

OECD (2019). *PISA 2018 Assessment and Analytical Framework*, PISA, OECD Publishing, Paris, doi: https://doi.org/10.1787/b25efab8-en.

Öner, G., & Mede, E. (2015). Evaluation of A1 level program at an English preparatory school in a Turkish university: a case study. *ELT Research Journal, 4*(3), 204-226.

Özer, M. (2016). The internationalization of higher education in Turkey: Realities, motivations and opportunities. *Insight Turkey, 18*(4), 53-64.

Pun J, Jin X (2021) Student challenges and learning strategies at Hong Kong EMI universities. PLoS ONE *16*(5): e0251564. doi: https://doi.org/10.1371/journal.pone.0251564

Richardson, J. T., & Woodley, A. (2003). Another look at the role of age, gender and subject as predictors of academic attainment in higher education. *Studies in Higher Education, 28*(4), 475-493. doi:https://doi.org/10.1080/0307507032000122305

Schmidt-Unterberger, B. (2018). The English-medium paradigm: a conceptualisation of English-medium teaching in higher education, *International Journal of Bilingual Education and Bilingualism, 21*(5), 527-539. doi: https://doi.org/10.1080/13670050.2018.1491949

Selvi, A. F. (2014) . The Medium-Of-Instruction Debate in Turkey: Oscillating between National Ideas and Bilingual Ideals. *Current Issues in Language Planning, 15*(2), 133–152. doi: https://doi.org/10.1080/14664208.2014.898357

Turhan, B., & Kırkgöz, Y. (2018). Motivation of engineering students and lecturers toward English medium instruction at tertiary level in Turkey. *Journal of Language and Linguistic Studies, 14* (1), 261-277.

Uchihara, T., Harada, T. (2018). Roles of vocabulary knowledge for success in English-medium instruction: Self-perceptions and academic outcomes of Japanese undergraduates. *TESOL Quarterly, 52,* 564–587. doi: **https://doi.org/10.1002/tesq.453**

Yıldız, M., Soruç, A., & Griffiths, C. (2017). Challenges and needs of students in the EMI (English as a medium of instruction) classroom. *Konin Language Studies, 5*(4), 387-402. doi: doi: https://doi.org/10.30438/ksj.2017.5.4.1

Young-Jones, A. D., Burt, T. D., Dixon, S., & Hawthorne, M. J. (2013). Academic advising: does it really impact student success?. *Quality Assurance in Education, 21*(1), 7-19. doi: https://doi.org/10.2399/yod.18.042