



The Impact of English Medium Instruction (EMI) on Students' Language Abilities

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Abstract

This paper reports on an investigation of Turkish English-medium university students' perceptions of the change in their language ability and difference between students' level of English proficiency when they start their departmental studies and in their 4th semester and onwards based on their proficiency exam scores. Results revealed that 1) studying in an English-medium university improves students' reading, listening and overall English proficiency significantly 2) there is not a statistically significant change between student's pre and post writing scores 3) the empirical findings are line with participants' perceptions of the impact of studying in an English-medium university on their language development. These findings suggest insightful implications for English-medium universities in Turkey and all around the world.

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Keywords: EMI; English-medium instruction; language development; proficiency; impact of EMI

1. Introduction

1.1. Introduce the problem

Being a global lingua franca, English is increasingly recognized as an indispensable requirement in various fields including business, diplomacy, and academics (Byun et al., 2011). It facilitates global exchange of information, development of knowledge, and prospects for career advancement and mobility (Montgomery, 2004). Agreeing on the importance of English as the language of science and business, Kruseman (2003) suggests that the medium of education should be English so that students will be equipped for an international career in today's globalizing world. As a result of this view,

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a growing number of non-English speaking countries are adopting English as a medium of instruction at their institutions of higher education (HE). Coleman (2006) names this phenomenon as “Englishization of European Higher Education” and categorizes the reasons which compel higher education institutions to offer programs and teach courses through the medium of English as follows: “Content and Language Integrated Learning (CLIL), internationalization, student exchanges, teaching and research materials, staff mobility, graduate employability and the market in international students” (p.4). It is, therefore, inevitable that many parents, especially those from middle or upper class families, prefer an English-medium school for their children, both at the secondary and HE levels (Collins, 2010). Similarly, due to these reasons the number of Turkish students who opt to study in an English-medium university (EMI) has increased dramatically. Despite its accelerating popularity, there is little research on the efficacy of EMI given in Turkish universities on students’ language proficiency.

1.2. Literature review

1.2.1. EMI and Turkish context

EMI can be defined as “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” (Dearden, 2014: 2). In the context of this study, EMI means delivering course content by using English language with the assumption that all the lessons, assignments and course materials used in the course are all in English. In this setting, faculty members’ primary concern is not to improve students’ language ability while delivering the content in English.

EMI is a growing phenomenon in Turkey similar to the other part of the world. According to the statistics of Ministry of National Education (MONE) while there were 103 private and 90 state English-medium secondary schools in the 1987-1988 academic year by the 2006-2007 school year, the number of private secondary schools was 717 and the number of English-medium secondary schools was 415 (MONE, 2008). This shows how the popularity of EMI increased among Turkish secondary schools. As for the higher education, universities in Turkey are categorized as state and foundation. Currently, there are 112 state and 65 private universities in Turkey (Turkish higher education council website). As the first state university with EMI, Middle East Technical University (METU) and Bilkent University, as the first private university in Ankara, took the lead to provide EMI and since then many state and foundation universities adopted EMI (Başıbek, N., Dolmacı, M., Cengiz, B.C., Bür, B., Dilek, Y. & Kara, B, 2014).

The popularity of EMI instruction in higher education institutions is not only due to Turkey’s ascension to EU membership. There are also some other implications. Through EMI, universities can enhance their international prestige and provide extensive career opportunities for their graduates both by the government and private industry. It is,

therefore, inevitable that many parents, especially those from middle or upper class families, prefer an English-medium school for their children, both at the secondary and HE levels (Collins, 2010).

1.2.2. EMI and language acquisition

Even if the aim is not to improve the language level of the students, some theories claim that there could be a positive change in students' language abilities when they are exposed to language in a meaningful way. One of those theories is the connectionist theory of language acquisition. This theory suggests that "learners gradually build up their knowledge of language through exposure to the thousands of instances of the linguistic features they eventually hear" (Lightbrown and Spada, 2006: 41). Similarly, in EMI context, since learners are exposed to "language features in specific situational or linguistic contexts over and over again, learners develop a stronger and stronger network of 'connections' between these elements" (Lightbrown and Spada, 2006: 41). Based on the connectionist theory, students are supposedly developing their language skills as they are studying the content.

Krashen's input hypothesis can also provide an explanation for the development of language skills as a result of exposure to the target language. Krashen claims that "acquisition occurs when one is exposed to language that is comprehensible and that contains I +1" (Lightbrown and Spada, 2006: 37). Exposure to meaningful input even without explicit focus on the language can help students develop their language.

In contrast to the theories which support natural development of language skills through exposure only, there are also theories which claim a different view point. According to Schmidt's noticing hypothesis, if students do not notice a particular structure, it may not be possible for him/her to learn it. Consciousness-raising activities and explicit focus-on-form have a crucial role in promoting L2 development (Fotos & Ellis, 1991; Long, 1991; Sharwood, 1993). Similarly, Lightbrown and Spada (2006:38) agree on the importance of explicit focus-on-form by stating that "students may reach a point from which they fail to make further progress on some features of the second language unless they also have access to guided instruction". Based on this view, programs which only focus on comprehension and fluency are likely to be less effective in developing students' language skills and the theory suggests that there needs to be form-focused instruction and corrective feedback in certain circumstances in order to fully develop the foreign language skills.

1.2.3. EMI and previous research

Most research on EMI has been conducted in order to explore the challenges of studying and teaching in an EMI context (Coleman, 2006; Kırkgoz, 2009) and the perceptions of students on the effects of EMI on their language proficiency (Kim, Kweon and Kim, 2016; Lee, 2014). As Hu and Lei (2014) states, there is a lack of empirical

research on what happens to English language proficiency of second language learners during university instruction. Storch (2009) investigated the changes in the learners' academic writing after one semester of study in an L2-medium university. She found that after a semester of study at the university, the learners' writing skills improved mainly in terms of structure and development of ideas and some improvement was observed in the formality of learners' language (Storch, 2009). However, there was no evidence of improvement in linguistic accuracy or complexity. She attributed this to a number of factors including the short duration of the study (one semester) and the absence of feedback. Another study conducted by Knoch, Roushad, Oon and Storch (2015) found that students' writing improved after three years of study but only in terms of fluency. However, changes in accuracy, grammatical and lexical complexity as well as global scores of writing fell short of significance (Knoch et al., 2015).

Due to the concerns related to the effectiveness of English-medium courses it is important to identify the efficacy of EMI given in Turkish universities on students' language proficiency.

1.3. Objective

The purpose of this study is to investigate the effects of EMI on students' language abilities and students' perspectives of the change in the context of higher education in a foundation university in Turkey. It investigates the change in language proficiency in three main skills (reading, listening and writing) which is measured by the institution's proficiency exam before students start their departments and after studying 4-8 semesters in their departments and it also compares the findings with the perceptions of students of the change. The research aims to answer the following research questions in order to make recommendations for higher education institutions and contribute to students' success as well as shedding light on an area that has been popularly investigated in and around Turkey in the last few years.

Research Questions:

1. How do students perceive the change in their language ability due to EMI?
2. What is the difference between students' overall level of English when they start their departmental studies and in their 4th semester and onwards based on their proficiency exam scores?
3. Are there any differences between pre and post proficiency exam grades in terms of reading, listening and writing skills?

2. Method

2.1. Research design and participants

This research encompasses a longitudinal pre-test and post-test experimental design over two to four academic years. The research involves two data collection times but from the same group of participants. A representative sample of 104 students from a foundation university in Turkey was involved in the study since as Merriam (2009) suggests, “unless you plan to interview, observe, or analyze all the people, activities, or documents within the case, you will need to do some sampling within the case” (p. 81). Demographic information of the participants who completed the questionnaire can be seen in Table 1. Twenty-five of these students who volunteered to take the exam were all studying at engineering faculty.

Table 1. Demographic information on study participants

Gender	Nationality		Faculty		Semester		Years of Lang. Learning Ex.							
	F	%	F	%	F	%	F	%						
Female	41	39.4	Turkish	101	97.1	Engineering	93	89.4	4	32	30.8	1-3	10	9.6
Male	63	60.6	Others	3	2.9	Business	7	6.7	5	15	14.4	4-6	15	14.4
						Social Sciences	4	3.8	6	35	33.7	7-9	23	22.1
									7	6	5.8	10 and more	56	53.8
						8 and more	16	15.4						

2.2. Research instruments

113 students were asked to complete a single 14-item survey containing demographic questions and items about their perceptions of the change in their language development. However, in order to control the impact of other factors on the perceived change, the data of the students who indicated that they went abroad or took other courses to improve their English were eliminated from the sample group. As a result, the data gathered from 104 participants were used in the study. Later, the institutional standardized proficiency exam which is prepared by a group of exam specialists using the Common European Framework (CEF) levels B1, B2 and C1 as references in order to determine students' readiness for a course of academic study in English was administered to 25 volunteering participants as the post-test. Therefore, pre-test instrument of the research is the compulsory proficiency exam that the students took to be eligible to study in their departments and the post-test of the research was the same exam which was given to the same students who volunteered to take the same exam after studying 4 to 8 semester in their departments. The test is based on a general subject area, and all parts of the exam are related to this overall topic. The aim of the exam is to test reading, writing and listening skills for academic purposes.

The exam was administered three times in order to increase the number of participants by offering different times which suited students' schedules. However, in

order to increase the reliability, all sessions were held under identical circumstances in which the physical conditions were conducive to test-taking.

Students' papers were evaluated and marked with giving utmost care to reliability. In the reading and listening sections of the exam bubble optical answer sheets are used and the answers objectively using the optical mark reader. Although the writing section is subjectively graded, to eliminate the subjectivity certain measures were taken. Before marking the writing papers, a standardization session was held where the two raters marked the same paper using the institutional writing rubric and then compared their grades in order to increase inter-rater reliability. Then, the markers graded the participants' papers separately. That is, papers were double-marked by two different raters. When there was a discrepancy in grades, a third marker also graded the papers.

3. Results

All the data was evaluated quantitatively using descriptive and inferential statistics computed through the Statistical Package for the Social Sciences (SPSS).

3.1. Perception of improvement

To report the students' perceptions of the change in their language abilities descriptive statistics was used. The means of scores and general tendencies, and frequency scores of the sample group were computed on SPSS to describe and summarize the data in a meaningful way. Percentages and the frequency of the responses are given in Table 2. These findings suggested that most of the participants (62 %) believe their English proficiency has improved in general, and more than 70 % of the participants believe that their reading and listening skills have improved. However, only 53.8 % think that their writing skills have improved.

Table 2. Students' perceived change in language proficiency

	<i>F</i>	%	<i>F</i>	%	<i>F</i>	%	<i>F</i>	%
	<u>General</u>		Reading		Listening		Writing	
Improved	65	62.5	79	76	84	80.8	56	53.8
Remained the same	21	20.2	9	8.7	6	5.8	33	31.7
Got worse	18	17.3	16	15.4	14	13.5	15	14.4

3.2. Comparison of proficiency scores

First, in order to check if there were any overall mean differences on each skill as well the total score means between pre-test and post-test, the descriptive statistics was used. For each of the exam sections and the total proficiency test scores for both pre-test and

post-test, the mean, standard deviation, and minimum and maximum scores were calculated and reported in Table 3. The findings suggested that the mean scores of the total, reading and listening skills have increased. Only the writing scores of the post-test have dropped compared to those of the pretest.

Table 3. Descriptive analysis of pre and post test scores

	Pre-test				Post-test			
	Min.	Max.	M	SD	Min.	Max.	M	SD
Reading	19	29	23.72	2.99	24	38	27.28	3.27
Listening	13	30	22.04	4.23	16	29	23.96	3.84
Writing	20	34	26.80	4.04	11	36	24.72	6.47
Total	59	84	72.44	7.41	53	93	75.92	9.96

To measure the correlation between reading, listening, writing skills, and total exam scores the Pearson product-moment correlation coefficient test was reported (Table 4). The findings revealed that there is not a significant correlation between the scores of different sections while a significant correlation was observed between each skill and the total scores as well as between the pre and post total scores.

Table 4. Correlations between scores

Scores	1	2	3	4	5	6	7	8
1. PreR	-							
2. PreL	.323	-						
3. PreW	.185	-.046	-					
4. PreTOT	.689**	.683**	.594**	-				
5. PostR	.404*	.36	.008	.368	-			
6. PostL	.506**	.338	.26	.550**	.292	-		
7. PostW	.26	.304	.550**	.595**	.006	.458*	-	
8. PostTOT	.504*	.452*	.457*	.725**	.444*	.781**	.838**	-

** p< 0.01; * p<0.05

To find out if there is a significant change in students' overall grades in pre and post-tests, before deciding on the statistical test to be used, the normality of scores were checked through the ratio of skewness and kurtosis over their respective standard errors as well as Shapiro-Wilk values. Since our sample data do not meet normality which is one of the basic assumptions that underlie the parametric statistical procedure, Wilcoxon's matched pairs-signed rank test, which is the non-parametric counterpart of the dependent t-test, was used (Carver & Nash, 2012). The findings of the Wilcoxon's matched pairs-signed rank test revealed that post-reading, post-listening and post-total

test scores were significantly higher than the pre-test scores ($p < .05$). However, post-writing test scores were not statistically significantly higher than the pre-test scores ($p > .05$).

4. Discussion and conclusions

The statistically significant positive difference between the pre and post listening and reading total scores suggests that when language becomes a means to an end and when there is meaningful exposure to language and task engagement, it makes a positive impact on receptive language skills development, which is supported by Krashen's (1985) input hypothesis. Since students are exposed to comprehensible input, they improve their language proficiency unconsciously by being engaged in various tasks. This finding is also in line with what Ament and Prez-Vidal (2015) found out in their study with students at Catalan University. In their study, it was noted that there were noticeable gains in receptive language tasks whereas less gains in writing and grammar tasks. In their study, Knoch et al. (2015) also reported that accuracy, grammatical and lexical complexity and global scores of writing fell short of significance (Knoch et al., 2015). The findings of current study and the previous studies might point out the importance of noticing and form-focused instruction in promoting language development. When students' errors are not corrected or when they do not receive guidance, they may not be able to improve their language use and errors might be fossilized in time. In Bitchener and Knoch's (2009) longitudinal research, it was found that groups receiving written corrective feedback outperformed the controlled the group on all post writing tests. Therefore, it might be suggested that although the aim of EMI is not to give explicit language instruction, it could be to the benefit of students to receive continuous explicit instruction and feedback on the accuracy and appropriacy of their language use.

The results also indicated that students' perceptions and the empirical findings are in line with each other. As a lower percentage of participants believed in the development in writing skills, the test results showed that only the mean of writing scores dropped. It is important to note that all the test takers and the majority of the participants sharing their perceptions were engineering students. The perception and drop in the writing scores could be attributed to the nature of the engineering faculty courses which require fewer productive written tasks. Therefore, it is important for universities to consider the nature of tasks and activities in each department and support students' language development in all skills and aspects rather than only in receptive skills.

5. Limitations

Some limitations to the study need to be acknowledged. The major limitation is the constraints on generalizability since it is difficult to draw descriptive or inferential conclusions from a sample of a small group. Since it was difficult to access participants over an extended period of time and since it was a very long test which took 5 hours, the

number of volunteering students was not as high as it was wished for. All participants constituting the sample in this study are from one single educational context, that is, from mostly the same faculty of one university. A broader interpretation and more valid generalization could be made when a similar study is conducted with participants from other universities and various faculties. Another shortcoming of this study relates to the lack of qualitative data collection tools to triangulate the data. Had different tools like observations and interviews been used, the data could have been cross-validated.

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