EVALUATION OF A NATIONWIDE ICT REFORM MOVEMENT IN TURKEY: INSIGHTS FROM THE FATİH PROJECT

By

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Date Received: 03/09/2017 Date Revised: 16/09/2017 Date Accepted: 02/10/2017

ABSTRACT

Turkey has recently embarked on a country wide endeavor of integrating technology into compulsory educational system with a 2.5 billion-dollar project called FATİH. The project consists of multiple intertwined stages, including hardware installation, equipment supply, software and content development as well as teacher training. These diverse and ambitious objectives make FATİH project a rare macro project with various insights and lessons for international educational arena and academia. The major objective of the project is also unique for the CALL literature: Providing equal opportunities for students during twelve years of compulsory education in state schools by means of educational technologies. The present study focuses on English language teaching context and amendments peculiar to English language students. The data were collected from 1,600 students with a survey questionnaire. The investigation focused on the perceptions about the project tools and materials as well as ICT related competencies of English language students. The results revealed that although there is a positive perception toward the innovations of the projects, there is still a long way to go in terms of full adoption of the ICT as a means of learning and development.

Keywords: English Language Teaching, ICT Integration, Secondary Education, Survey.

INTRODUCTION

Integrating technology into the whole compulsory educational system of a country is quite a challenging task not only for responsible authorities but also for teachers and students. Turkey has recently experienced such a radical transformation with the implementation of a nationwide project entitled "Movement of Enhancing Opportunities and Improving Technology" (Turkish acronym: FATİH). The primary argument of this project is to provide equal opportunities for students during compulsory primary and secondary education in state schools by means of Information and Communication Technology (ICT) tools and materials. It consisted of various stages of technology integration from installation of hardware infrastructure, software development and installation to preparation of computer and internet based instructional materials for in and outside classroom.

The perception of technology use in English language teaching has been positive among teachers of English as a Foreign Language (EFL) in Turkey on the grounds that computers and internet provide a plethora of authentic language input and multiple channels of interaction in different forms (Aydın, 2013; Hismanoğlu, 2010; Karakaya, 2010). Over the last two decades, the advent of ICT technologies has thus changed the nature of English language teaching in countries where English is not spoken outside the classroom. In this respect, FATİH Project (FP), as a macro ICT integration movement, is expected to provide English language students with powerful content that is theoretically and practically tailored in line with their needs.

FATİH Project

FATİH project is a national initiative that has been carried out by the Ministry of National Education (MoNE) in cooperation with the Ministry of Transport, Maritime Affairs and Communications in Turkey since November 2011 to be completed in five years. The project is based on the

premise that all the students in compulsory education will be provided with equal opportunities with the use of ICT technologies. To this end, the FP supplied ICT infrastructure and tools for the schools until the end of 2013 with a budget of around 2.5 billion dollars. Beginning by upper secondary education schools in the first year, the project then focused on the lower secondary education and primary education consecutively. The integration of ICT tools in 570,000 classrooms consisted of Interactive Whiteboards (IWBs), internet network and tablet PCs for teachers and students. The project has five main phase components (Faith Projesi, 2015):

- Providing equipment and software infrastructure
- Providing educational e-content and guidelines
- The efficient use of ICT in course programs
- In-service education for teachers
- Providing conscious, safe, manageable and testable ICT usage

A nationwide project for ICT integration aims to provide relevant, tailored and innovative instructional contents and software. In this respect, FATİH project is not merely an ICT equipment project independent of educational e-content. Educational e-content are published on the official educational website EIN (EğitimBilişimAğı [Education Information Network, http://www.eba.gov.tr/]). In addition to official e-content provided by the government within the scope of the project, the teachers affiliated to the MoNE can also develop and upload educational materials. In 2014, it was stated in the activity report of the MoNE that 7,761 videos, 55,116 educational visuals, 1,674 e-books, 1,396 e-journal, 4,386 audios, 1,600 document, and 84 e-content websites were published on EIN. Among those, 74 videos, 126 visuals, 23 e-books, 270 audios, and 12 documents offered on the EIN website related to English language learning.

E-content prepared for upper secondary school students consist of 43 videos, 16 e-books, audio tracks of the course book, and 7 web portals. E-books are the PDF versions of the main course books assigned by the MoNE, none offers interactivity. Video and audio materials are not designed or produced by native speakers. Moreover, videos are prepared in two different versions; one that presents grammatical structures in English for 17-20 minutes, and the other that offers dialogues and daily interactions in English for 1.5-5 minutes. Grammatical structures presented in the videos do not completely match with the offered language content in the national curriculum. Web portals for teachers' use include eleven course books. The rest are composed of certain online content what are purchased from private companies and offered to learners' use through EIN. The materials on EIN are not manageable – little, often, and flexible (Murray and Barnes, 1998) – and interactive pieces to facilitate cognitive and affective engagement (Tomlinson, 2013) with the language learning process. The materials on EIN are mostly designed in big and inflexible pieces which do not allow the learners to exploit and individualize the language learning materials. They are mostly comprised of activities that require cognitive strategies rather than metacognitive and socio-affective strategies (Oxford, 1990).

In-service teacher training courses have also been a very important part of the project. Eight-hour informative trainings were carried out in the schools where infrastructure work was completed. Also, 25-hour preparatory trainings are planned to equip teachers with the necessary competences that relate to the use of ICT. Another type of teacher training is 30-hour instructional trainings that are the basic training of the project. Different types of training seminars are also available for the use of specific software.

The 30-hour in-service trainings are carried out in five days with twenty teachers per training session. The components of the trainings include issues, such as "FATİH Project in education; installation and use of ICT equipment; searching, finding, and selecting e-content; designing and developing e-content, planning and presenting a lesson using founded/developed e-content" and "evaluation of the sufficiency of a lesson presented through technology and e-content used in the lesson by the teacher". In each classroom, there are computers for 20 teachers, one computer for the trainer and internet connection with a speed of at least 1 Mb. Until 2016, 114,308 teachers participated in those face-to-face trainings (EIN, 2017).

The project has had various significant impacts on state

schools. According to the data revealed in Strategic Report 2015-2019 (MoNE, 2015a), 84,921 classrooms in 3,657 schools are equipped with the IWBs, multifunctional printers, document cameras, and internet network. The number of distributed tablets is 737,800 (The MoNE, 2015b). It was stated in Activity Report of the MoNE in 2014 that 4 out of 8 targets had been reached in the project. Targets achieved were reported to be the tablets distributed to teachers (around 125,000), e-content for the IWBs and tablets (18,507), in-service training for teachers (64) and schools with network systems and data centers (54,156) (The MoNE, 2015a).

ICT in English Language Teaching

Offering new venues of practice and communication, technology serves language learning (Garrett, 1991) in a number of ways. While earlier technologies allowed the language learners to drill and practice, today's technology make online communication with native speakers possible anytime, anywhere. Hence, technology in the foreign language contexts offer opportunities of authentic language exposition, interaction, and may help the learners to generate output (Skehan, 2003; Smith, 2003; Swain, 1985). In addition, language learners may attend to L2 forms by promoting their attentional sources through computer mediated interaction (Blake, 2009; Chapelle, 1997, Long, 1996; Schmidt, 1994) and their language learning experiences may be enhanced (Chapelle, 1997; Zhao, 2005) accordingly. Considering the limited opportunities of foreign language learners to use the language outside the classroom communicatively, internet and computer technologies surely offer enhanced use of language by compensating for the status quo if it is used in line with the learning goals and eliminate many barriers to successful language learning (Zhao, 2005).

As underlined in the literature of applied linguistics, theoretically speaking, any attempt to integrate technology in foreign language teaching requires adopting a wider pedagogic perspective embracing the continuum of curriculum and instruction. Among technology integration models (see Davis, Bagozzi, and Warshaw, 1989; Rogers, 1995, 2003; Cuban, 1993; Venkatesh, Morris, Davis, and Davis, 2003), the theoretical position proposed by Bax (2003) is essential to investigate the impacts of a macro ICT project like FATİH. Bax (2003) argues that we are still experiencing open Computer Assisted Language Learning (CALL) and the aim is to reach an integrated approach. In Integrated CALL, technology becomes such a common practice that it becomes invisible, for which Bax (2003) used the term 'normalization'. He adds, "Most importantly, CALL will be normalized when computers are treated as always secondary to learning itself …" (Bax, 2003, p. 24). When technology is used without conscious effort, the integrated approach is accomplished. Bax (2003) defined seven stages of normalization of CALL as:

- Early adopters: A few teachers and schools adopt the technology out of curiosity.
- Ignorance/skepticism: However, most people are skeptical, or ignorant of its existence.
- Try once: People try it out but reject it because of early problems. They can't see its value - it doesn't appear to add anything of 'relative advantage' (Rogers, 1995).
- Try again: Someone tells them it really works. They try again. They see it does in fact have relative advantage.
- Fear/awe: More people start to use it, but still there is (a) fear, alternating with (b) exaggerated expectations.
- Normalizing: Gradually it is seen as something normal.
- Normalization: The technology is so integrated into our lives that it becomes invisible - 'normalized' (Bax, 2003).

Normalization is thus the main motive of CALL studies for Bax. It is also an important step in the diffusion of innovation theory (Rogers, 2003), which might be viewed as another interpretation of normalization of the ICT in education. In Integrated CALL, physical position of computer also shifted from separate labs to the classrooms, which is all about one of the major objectives of the FATİH Project. In this respect, for an EFL context like Turkey, it is important to define initially what the norm is in ICT use to talk about any evidence of normalization as a result of nationwide ICT integration. To reach this end in Turkey or in similar countries in terms of ICT integration, this definition is to be based on the foreign language teaching policy of the country, which

may help develop a set of criteria to identify where the country is in normalization stages of Bax (2003). The present study addresses this issue because ICT integration in terms of normalization (Bax, 2003) is not only a physical one, but a social, cognitive and an affective one as well (Bax, 2011).

1. Theoretical Framework

Explaining the adoption of technology as a process, Rogers (1995, 2003) explained diffusion of innovation, which is used to explain the uptake of technology provided by the FP. Rogers (1995, 2003) explained the spread of technology over five communication channels through a social system; knowledge, persuasion, decision, implementation, and confirmation. As a decision making unit, a language learner, passes through these channels to fully adopt or reject the currently available technology. The process begins with the knowledge of the technology, which corresponds to the perception in the present study. Language learners' awareness of and knowledge about the FP forms the first step of the process. Persuasion, the second step, is couched as the positive or negative attitude of the decision-making unit toward the technology. Language learners' attitudes – negative and positive – constitute the concentric foci of the present study, for which perception is depicted by Rogers (1995, 2003) as an important prerequisite. In the third step, the decision-making unit decides whether to adopt or reject the technology after engaging in certain activities. For the present study, third step, decision, refers to the competency (see Stoof, Martens, and Van Merrienboer, 2000) of the language learners in FP tools. The fourth step, implementation, is actualized when new ideas are tested with the technology, and finally confirmation occurs when the decision-making unit seeks reinforcement of the technology adopted.

There are ample studies on the role of perceptions on technology integration into education. The relevant literature accentuates the importance of the perceptions as a predictor and facilitator in technology implementation (e.g., Davis, 1989; Ertmer, 1999; Ritchie and Wiburg, 1994). Similarly, the studies on the FP have increased in number, most of which investigate variables related to teachers (Gök, 2014; Karataş, 2014; Kocaoğlu, 2013; Şanlı, Altun, and Tan, 2015; Yeni-Palabıyık, 2013). However, there is a paucity of research on the students' perception of ICT tools (Bağcı, 2013; Eren, 2015; Kırali, 2013). The focus on the FP within the literature of English language teaching is even more scarce (see Kayak and Kır, 2015).

However, no studies have so far investigated extensively the linguistic and pedagogical impacts exerted by the project on English language classrooms and students. Considering that around 18 million students in primary and secondary education are to benefit from the ICT-based learning experiences within the FP, an investigation of the project may offer insights for other countries considering similar reforms as well as for policy makers, shareholders, and academia. Based on this argument, the present study seeks to investigate FATİH Project with regards to the perception of students to find out how the project tools and materials are viewed and to what extent English language students are equipped with ICT competences to use FATİH project ICT tools.

Evaluating the results and impacts of the FATİH project may yield valuable insights that inform other countries considering similar reforms as well as for policy makers, shareholders, and academia. The present study focuses on one of the major agents of the educational system, the students, and thus on the core of the project. To this end, the following research questions were addressed:

RQ1: What are the perceptions of English language students about the FATİH project?

RQ2: To what extent is the English content of the FATİH project used in and outside the classroom?

RQ3: How competent do English language students perceive themselves to be in using FATİH project tools?

RQ4: Is there a significant difference in the perception of English language students about the FATİH project in terms of age, gender, and grade?

2. Methodology

2.1 Research Design

A survey model (Fraenkel, Wallen, and Hyun, 2012) was employed in this descriptive study. Perceptions of the participants concerning the FP were gathered via a survey

developed for the present study. In addition to the survey, the researchers gathered data from the reports of particular governmental and private bodies to understand and analyse the survey data yielded from the students.

2.2 Participants

Each cycle of the compulsory education in Turkey is four years. The study focuses solely on the last four-year cycle, upper secondary schools. In determining the sample of this study, quota/stratified random sampling and convenience sampling were used. In quota sampling "certain distinct subgroups" (Dörnyei, 2003, p. 55) are defined and the population is determined according to these groups. Stratified random sampling is used for "selecting a sample in such a way that identified subgroups in the population are represented" (Fraenkel et al., 2012, p. G-8). There are 7 geographical regions in Turkey with different socioeconomic, cultural, and linguistic characteristics. To secure the representativeness of the sample, data collection included students from all of the regions. Based on this initial definition of the samples, the study then adopted a convenience sampling as "a group of individuals who (conveniently) are available for study" (Fraenkel et al., 2012, p. 99). The sample of the study consisted of 1,600 upper secondary school students from 10 cities from different 7 regions of Turkey. The survey data were collected in the fall term of 2014-2015 and in the beginning of the spring term of 2015-2016 educational year.

2.3 Implementation

In the first phase of the research study, a survey on the perceptions of the students about the FP was developed. Following expert opinion and back translation, the survey was piloted to secure clarity, content validity, and reliability. This phase was completed in six months. The survey was administered both face-to-face and via an online secured data collection software. All of the participants were provided with a consent form informing them of the purpose of the study and specifying that participation was voluntary and confidential. In the post implementation phase, data management and analysis were performed using statistical software package.

2.4 Instruments

2.4.1 The Survey

A student survey was developed to collect quantitative data for the study. Development of the survey instrument was based on a review of the literature (Albirini, 2006; Ali, 2010; Çelik, 2012; Pabayo, 2006; Verhelst, Van Avermaet, Takala, Figueras, and North, 2006; Wang, Ertmer, and Nweby, 2004; Yang, 2006) and consultation with a group of researchers, through which survey factors were agreed upon widely. The factors were labeled as positive attitude, negative attitude, competency, and e-content awareness. Then, a pool of survey items was developed for each of the factors. The item pool for all factors consisted of around 200 items all in English. Following the initial studies of the authors, a survey form consisting of 55 items was designed and sent immediately for expert opinion. Five experts were involved in the piloting phase and all were faculty members in English Language Teaching programs. The items found inappropriate by the experts were excluded from the survey and the necessary corrections were made. Finally, a survey form consisting of 38 five-point Likert scale items was developed for the study.

This survey version was then translated into Turkish by using back translation technique. The survey was prepared in English initially and sent to 3 experts to translate it into Turkish. After the translation into Turkish was completed, it was then sent to another 3 experts to translate it back into English. All the translations were compared with each other to spot any ambiguity or vague statement; however, no mismatch between English and Turkish versions was observed in this phase.

2.4.2 Validity and Reliability

The piloting of the instrument was carried out on 205 students from two cities in different geographical regions. Then the clarity of the items and face validity of the instrument were negotiated with 60 students, and it was concluded that the survey presented clear and comprehensible items for the students at state schools. Finally, an exploratory factor analysis was conducted to measure the construct validity of the instrument.

According to the results of the analysis, 7 items were excluded from the survey and the number of items was

reduced to 31. Kaiser-Meyer-Olkin measure of sampling adequacy was found .88 and Bartlett's test of sphericity was found 2862.196 in factor analysis. These values showed the surveys' appropriateness for factor analysis. The factors cumulatively explained 51.306% of the variance in the survey. Table 1 shows the factor loads and total item correlation for each survey item, which provided convincing evidence that the instrument relates to the relevant theoretical constructs.

The reliability of the survey was determined by calculating Cronbach's co-efficiency Alpha. The reliability scores were calculated for both each factor and total score. The lowest score was measured as $\alpha = .757$ for the factor 'Negative attitude toward the FP' and the highest score was found to be $\alpha = .924$ for the factor 'E-content and ICT awareness'. The total Cronbach's Alpha score for all of the items was $\alpha = .908$, which led them to conclude that the instrument was reliable.

	Factors				
	E-content Awareness	Positive Attitude Toward the FP	Competency	Negative Attitude Toward the FP	R (total item correlation)
i23	0.80				0.80 (*)
i22	0.77				0.75
i21	0.73				0.74
i24	0.73				0.77
i18	0.71				0.76
i20	0.70				0.79
i19	0.67				0.71
i30	0.62				0.67
i25	0.61				0.56
i17	0.51				0.56
i5		0.77			0.76
i8		0.70			0.71
i7		0.70			0.72
i6		0.69			0.71
i4		0.64			0.68
i1		0.63			0.65
i11		0.61			0.69
i2		0.59			0.62
i3		0.54			0.53
i28			0.74		0.68
i26			0.69		0.49
i27			0.65		0.61
i29			0.64		0.62
i16			0.42		0.46
i31			0.40		0.53
i14				0.71	0.55
i13				0.68	0.56
i15				0.58	0.50
i12				0.57	0.49
i10				0.56	0.53
i9				0.42	0.36

*p<.05

Table 1. Rotated Factor Matrix

2.5 Data Analysis

The data gathered via survey instrument were tabulated and analyzed via a statistical software package. The validity of the survey instrument was measured using exploratory factor analysis and various accompanying tests. Descriptive statistics, such as frequency, mean, percentage, were utilized to analyze the demographic data, perceptions of the participants about FP and competencies of the students about the use of ICT. The significance of the difference between the demographic variables, use of technology and research factors were calculated using independent samples t-test and ANOVA.

3. Findings

3.1 Demography and Literacy in Technology

The demographic information of the participants comprises two parts; factual information and literacy in technology. The factual information consists of gender, age, and grade (Table 2). The participants' experiences in technology and computer access at home were taken into account to clarify their perceived ICT competency and awareness. This provided additional information to the perceived competency dimension which was not confined solely to knowledge on ICT. The background

Variable	Groups	Frequency (n)	Percentage (%)
Gender	Female	1178	73.6
	Male	422	26.4
	Total	1600	100.0
Age	13-15	638	39.9
	16+	962	60.1
	Total	1600	100.0
Grades in Upper Secondary School	9	602	37.6
	10	601	37.6
	11	301	18.8
	12	96	6.0
	Total	1600	100.0

Table 2. Demographic Findings

information included computer experience, the time spent on using computer, and perceived the competency level of computer and internet (Table 3). As participants from different cities, ages, and from all grades were included in the study, the confidence level of the sample size is around 97% with 3% of margin error.

The analysis of the access to ICT at home showed that 1,209 (75.6%) of the students have a computer at home, which means three of four students can access ICT materials easily. As for the experience with technology, 621 (38.8%) students were reported to have 7 years or more experience while 268 (16.8%) had no experience at all. The ones with 1-3 years of experience (n=247) were 15.4% and the ones with 4-6 years (n=464) were 29.0% of total participants. This finding revealed that most of the participants (67.8%) have more than 4 years of experience. 'Daily use of computer' was another variable in the survey and grouped in four areas. Among those, 26.8% of the participants (n=428) reported that they did not use computer on a daily basis while 1,172 (73.2%) reported to spend time with computers every day. The perceived levels of computer and internet competency were both categorized as beginner, mid-level, and advanced.

RQ1: The perceptions of English language students about FATIH Project

The perceptions of the students on the FP were explored via the survey questionnaire. The findings revealed that the students held a positive perception of the FP (Table 4).

The findings revealed that the perceived e-content awareness of the students was somewhat positive ($\bar{X}$ = 3.41). In addition, they reported to hold somewhat a positive attitude toward the FP ($\bar{X}$ = 3.34) and the finding was also supported with the fourth factor, a negative attitude toward FP, which was disagreed by the students ($\bar{X}$ = 2.26). The perceived competency concerning ICT is the highest score among all factors. The students mostly agreed that they are competent in ICT ($\bar{X}$ = 3.97).

Variable	Groups	Frequency (n)	Percentage (%)
Time Spent on using Computer	Not at all (0)	428	26.8
	Less than 1	618	38.6
	2-4hours	461	28.8
	5+hours	93	5.8
Perceived Computer Competency	Beginner	191	11.9
	Mid-level	1024	64.0
	Advanced	385	24.1
Perceived Internet Competency	Beginner	144	9.0
	Mid-level	881	55.1
	Advanced	575	35.9

Table 3. Computer Use and Perceived Competencies

	N	Mean	Std. Deviation
E-content Awareness	1600	3.41	.95
Positive Attitude toward the FP	1600	3.34	.94
Competency Concerning ICT	1600	3.97	.86
Negative Attitude toward the FP	1600	2.26	.93
Total	1600	3.27	.60

Table 4. Descriptive Statistics of the Survey

RQ2: To what extent the English e-content of FATİH Project is used

Items 20 and 23 in the survey stand for in-classroom use of e-content, and items 21, 22, and 24 address outside the classroom use. The descriptive analysis of these items sought to investigate the extent to which e-content are used in and outside the classroom by the students. Compared to general awareness of e-content for english courses within the FP, students' use of in and out-of-class e-content was higher. The students think that e-contents are supplementary ($\bar{X}$ =3.43) to the regular course materials, and that they can support their studies by using e-content ($\bar{X}$ =3.54) provided by the FP. The students find the audio-visual materials appealing ($\bar{X}$ =3.44) and e-content materials are somewhat more effective for learning English ($\bar{X}$ =3.31), so they think that working through e-content is advantageous ($\bar{X}$ =3.58). The level of using e-content in the classroom was found above average. The students think that they can do homework ($\bar{X}$ = 3.46) by benefiting from project e-content ($\bar{X}$ = 3.56), and they feel ready for the lessons when they complete their homework by making use of project e-content (X = 3.24). The level of using e-content out of the classroom was above average as well. The findings indicated that the e-content of english course on EIN are used in and out of the classroom by the students.

Rq3: The competence of the students in using project tools

The competency levels of the students were examined by referring to the data from the survey. The results revealed that students' perceived competency level of the ICT tools

peculiar to the FP was moderately high ($\bar{X}$ = 3.97, SD= 0.86).

RQ4: The relation between demographic information of the participants and the factors

The factors of the survey were examined in terms of demographic information of the participants and technology-related experiences. Independent samples t-test and ANOVA were used to analyse whether there was a significant difference between demographic information and the factors identified for the study. Table 5 shows the results of independent samples t-test of the factors in terms of the gender.

The scores showed significant differences between male and female participants in positive attitude, negative attitude, and in total with males scoring higher than females. Although it was not statistically significant, the males scored higher in e-content awareness and competency of ICT as well. In addition, males displayed more positive perception on and attitude toward the FP than females. However, males, inconsistently, scored higher in negative attitude toward the FP. The results of whether there is significant difference in the factors in terms of the participants' age are tabulated (Table 6).

A significant difference was observed between two groups 13-15 and 16+ on the factor 'Negative Attitude'. While 13-15 age group scored higher in all except for negative attitude, 16+ age group scored significantly higher than the 13-15 age group in negative attitude. In order to examine whether there was a significant difference between the survey factors and the grade of the participants, one-way ANOVA analysis was performed (Table 7).

	Gender	N	Mean	Std. Deviation	t	p(*)
E- content Awareness	female	1178	3.38	.92	-1.612	.107
	male	422	3.47	1.01		
Positive Attitude	female	1178	3.29	.91	-3.277	.001*
	male	422	3.47	.99		
Competency of ICT	female	1178	3.95	.84	-1.174	.240
	male	422	4.01	.92		
Negative Attitude	female	1178	2.22	.90	-2.636	.008*
	male	422	2.36	1.00		
Total	female	1178	3.24	.58	-3.396	.001*
	male	422	3.36	.65		

*p<.05

Table 5. Independent Samples t-test of All Factors and Gender

	Age	n	Mean	Std. Dev.	t	p(*)
E-content Awareness	13-15	638	3.55	1.01	5.111	.000*
	16+	962	3.31	.89		
Positive Attitude	13-15	638	3.55	.98	7.322	.000*
	16+	962	3.20	.88		
Competency of ICT	13-15	638	4.13	.81	6.254	.000*
	16+	962	3.86	.88		
Negative Attitude	13-15	638	2.14	.97	-4.218	.000*
	16+	962	2.34	.90		
Total	13-15	638	3.39	.61	6.311	.000*
	16+	962	3.20	.59		

*p<.05

Table 6. Independent Samples t-test of All Factors and Age

For a positive attitude toward the FP, it is evident that the scores decrease in the higher grades of upper secondary education. There is a statistically significant difference between the scores of tenth grade ($\bar{X}$ = 3.26) and 11th ($\bar{X}$ = 3.02), 12th ($\bar{X}$ = 2.96), and 9th ($\bar{X}$ = 3.64). Moreover, the scores of 11th and 12th grades are significantly lower than those of 9th and 10th grades.

Perceived competency concerning ICT tools peculiar to the FP was in the highest level in the 9th grade ($\bar{X}$ = 4.17), and the difference between 9th grade with the other grades was also statistically significant. There is a significant difference between the perceived competency levels of using ICT tools and the grades of the participants: The 10th graders scored higher than 11th and 12th graders. The scores of 11th and 12th grades are significantly lower than the scores of 9th and 10th grades which are statistically significant.

When it comes to the total scores, it can be seen that there is a significant difference between the participants' grades and their perceptions on the FP. The results revealed that the 9th graders have the highest scores in all factors except for the negative attitude ($\bar{X}$ = 2.36) and in total. The highest scores indicated that 9th graders had the most positive perception of the FP in general, the highest competency of ICT tools peculiar to the FP, and the greatest awareness of e-content of the FP and on a positive attitude toward the FP. The scores of 11th and 12th grades were significantly lower

Factors	Grades	n	Mean	Std. Dev.	F	p	Post Hoc (Tukey)
E-content Awareness	9. grade	602	3.64	1.02	26.474	.000	9>10,11,12
	10. grade	601	3.37	.86			10>11,10<9
	11. grade	301	3.09	.90			11<9,10
	12. grade	96	3.16	.78			12<9
Positive Attitude	9. grade	602	3.64	.97	41.928	.000	9>10,11,12
	10. grade	601	3.26	.88			10>11,12 10<9
	11. grade	301	3.02	.81			11<9,10
	12. grade	96	2.96	.83			12<9,10
Competency of ICT	9. grade	602	4.17	.79	21.046	.000	9>10,11,12
	10. grade	601	3.86	.89			10<9
	11. grade	301	3.88	.83			11<9
	12. grade	96	3.64	.93			12<9
Negative Attitude	9. grade	602	2.16	.99	4.982	.002	9<10
	10. grade	601	2.36	.92			10>9
	11. grade	301	2.26	.86			
	12. grade	96	2.19	.75			
Total	9. grade	602	3.46	.61	39.817	.000	9>10,11,12,
	10. grade	601	3.24	.58			10<9,10>11,12
	11. grade	301	3.06	.55			11<9,10,
	12. grade	96	3.01	.55			12<9,10

*The mean difference is significant at the 0.05 level

Table 7. One-way ANOVA of the Grades and Survey Factors

than the scores of 9th and 10th grades in total analysis. The 10th graders had higher scores ($\overline{X} = 3.24$) than 11th and 12th graders while having lower score than the 9th graders.

4. Discussion

4.1 RQ1: The Perceptions of Students

The first research question addresses the perceptions of English language students about the FP. Internal mechanisms like perception are much effective in technology adoption than external factors like resources (Ertmer, 1999; Ritchie and Wiburg, 1994). Language learners' perceptions of and attitudes toward the FATİH project, as two important internal constructs in diffusion of innovation (Rogers, 1995, 2003), revealed that language learners are likely to adopt the FATİH project technology.

The students in the present study reported to have a moderately positive perception on the FP ($\overline{X} = 3.27$). This finding is in line with the findings of Sayır (2014), Günbayı and Yörük (2015), who carried out research in the similar contexts and with participants. The interpretation of this finding may not be grounded firmly on the notion of digital age because the students belong to the same digital era, according to Prensky (2001). Rather, these significant differences may be explained with the initiation of the project in the schools. That is, the project has not been initiated at the same time in all of the schools; the setup of the hardware has been carried out gradually.

According to the "diffusion of innovation theory" of Rogers (2003), adopting a given technology requires a positive attitude toward it. This study shows that the students in upper secondary schools have an average level of a positive attitude toward the FP. In addition, the participating students did not view technology integration into learning English as a challenge, but rather they thought that it facilitates learning English. Contrary to the present study, Altın (2014) found a negative attitude toward the FP among students. According to Davis (1989), the actual use of technology is the total outcome of the perception on the ease of use and usefulness, which explains the findings of the present study about the students' positive perception of ease of use and usefulness of the FP tools.

Until now, 737,000 tablets have been disseminated in the schools (MoNE, 2015b), but they have not been used as an educational material yet, which shows that the project has not been well planned and the process has not been cost-efficient. Disseminating high-budgeted ICT tools to the students in high quantities and yielding no outcomes, in any case, is a failure. The project coordinators endorsed that the tablets have already been a disappointment; however, the authors were informed by the Ministry authorities that the dissemination of tablets would keep going in 2016 and onwards. Nevertheless, it is evident that most students will not be able to make use of the project tablets prior to graduation, as the synchronizing software has not been released as of late 2016. Naturally, there are no studies reporting on the positive effects of tablets within the FP.

Moreover, the studies on the project revealed that in some districts, the students make a better use of the hardware and software (Bağcı, 2013; Günbayı and Yörük, 2015), while in other districts, students reported a negative attitude toward the project (Altın, 2014) due to some implementation problems. One problem, evidently, is that a great many students do not spend time on internet (28.6%). This finding is confirmed by the data from Turkish Statistical Institute about the percentage of internet connection at home, which is 23.7% (Turkish Statistical Institute, 2016). This problem can be attributed to the planning phase of the project, during which the local and district specific characteristics and needs were not investigated properly.

4.2 RQ2: English e-content of FATİH Project

The second research question focuses on the extent to which the English content of the FP utilized in and outside the classroom. The literature is scarce with regard to e-content of the FP from the perspective of students (Altın, 2014; Ateş, Çerçi, and Derman, 2015; Kaysı and Aydın, 2014). There is not an example of a scholarly study that focuses on EFL. The survey results indicated that the students somewhat agreed that they were aware of the e-content provided for English course. The findings revealed a high level of use of e-content both in and outside the classroom. The students were found to make use of e-content to do homework and to get prepared for the lessons. They viewed the e-content as supplementary to English course and that they could further their studies through e-content. The students viewed the audio-visual e-content appealing and working through the e-content advantageous. This study also found an average level of awareness on English e-content which is an important channel in technology adoption (Rogers, 2003). However, Altın (2014) found that the students perceived EIN platform as insufficient and hard to use. Altın (2014) suggested that the e-content should be given as much importance as hardware.

Similarly, the lack of educational software has been defined by many as a barrier in technology integration (Buabeng-Andoh, 2012; Ertmer, 2005; Goktas, Yildirim, and Yildirim, 2009). In addition, some materials are bulky in size and they require a great amount of time and Internet quota to download them. The books are about 100 MB on EIN and this is a problem for most of the users (Kaysı and Aydın, 2014). Such problems in e-content of the FP accommodate the barriers which jeopardize the successful implementation of the project. In other words, the threat for the project emerges from the project itself, which is again about the planning phase.

There are not many studies on the sufficiency of e-content of FATİH, but the available literature indicates that the e-content are not sufficient and compatible with effective language teaching principles (Ateş et al., 2015; Kaysı and

Aydın, 2014). Even though offering interactive and manageable online materials in technology integration is quite important (Chapelle, 2010; Murray and Barnes, 1998; Tomlinson, 2013), FATİH project has not offered any interactive applications that enable practices or performing communicative tasks for English courses.

Although technology is physically integrated in and outside the classroom as in Integrated CALL, e-content on EIN are pedagogically appropriate for Restricted CALL, because there are not interactive and/or communicative authentic materials on EIN. Ironically enough, traditional language drills and practices are uploaded as softcopies in various forms, such as books, handouts, and so forth. Contrary to the mobile tools distributed in the scope of the FP (tablets), which may promote language learning anytime-anywhere, e-content do not promote "interaction with other student", and "some interaction with computer through the lesson" (Bax, 2003, p. 21).

4.3 RQ3: Competencies of English Language Students

The third research question addresses the perceived competency levels of English language students about using technological tools specific to the FP. Competency which represents an amalgam of knowledge, attitudes, and skills implies the extent to which the language learners adopt/reject the technology (Rogers, 2003; Stoof et al., 2000). The findings revealed that language learners decided to adopt the FATİH project technology to a considerable extent. The participating students perceived themselves as competent in using ICT tools.

4.4 RQ4: The Relation between Demographic Information and the Factors

The fourth research question focuses on the relation between factors and demographic information (age, grade, and gender). It was found that the participants have a moderately positive perception on and attitude toward the FP. The new comers, 9th graders, have come into settled smart classrooms while the others, especially the 12th and 11th graders, have witnessed the process along their upper level secondary school education. The process and the challenges may lead to negative attitudes among them. They may be negatively affected by the settlement process because they waited for the permission to use the technological tools in the classroom. The bureaucratic process is run approximately in the same way for every school.

The findings revealed that the students perceive themselves as competent in using ICT tools peculiar to the FP. The data from the survey showed that region/city and gender variables did not yield significant differences with regard to students' self-report about their competence in ICT tools. The only significant differences between the students were in their age and grade variables. The perceived competence in ICT tools was observed to increase in younger ages (e.g., 13-15 age group, 9th graders). These findings are in line with the mainstream digital age conception related to technology adoption (Prensky, 2001). The data collected from both the city centers and towns enabled us to address various socio-economic strata. No matter where they are from, all of the students perceived themselves as technologically competent. However, a digital divide (Warschauer, 2004) was observed among the schools and the socio-economic stratum. The participating students' access and the acquaintance with the ICT tools differ depending on their economic status. The survey results indicated that the students who have computers at their houses are more competent in using ICT tools. The planning phase of the project should have calculated this variable to make the necessary modifications in the implementation process.

Conclusion

The present study sets out to investigate the perceptions and perceived competency levels of English language learners concerning the FATİH project, a nationwide technology integration movement to provide equal opportunities for the learners. The results of the survey indicated that students have a somewhat positive perception about the project, and they perceive themselves competent users of the ICT tools specific to the software and hardware of the project. Nevertheless, the present study revealed that the participating students had a contact with technology in different degrees. Although the familiarity of the students with technology is an opportunity for the educational system, there is indeed a long way to go in terms of full adoption of the ICT as a

means of learning and development in Turkey.

By referring to the data, the authors also offered a categorization of the preparations and studies carried out before and during the project as well as what should have been done to attain a success in a macro ICT project. This categorization may be useful not only to evaluate the success of the FP, but also to offer scholarly insights for the other projects for the wider academia. Table 8 depicts this categorization.

Before the actual implementation, it is evident that the planning of the project was not done effectively, which led to the major problem: A project aiming at providing equal opportunities was not able to achieve this; the materials of the project were not distributed fairly and in the planned time frames. During the project, schools were not provided with technical assistance and EIN did not offer effective the English language related e-content repository. Therefore, it was concluded that the initial phase of such nationwide projects requires a detailed planning, negotiation with shareholders such as teachers, academicians and even students. From this point of view, the pathway toward a full normalization (Bax, 2003) of ICT across Turkish educational system is impeded by those flaws in designing, planning, and implementation of the project.

Nevertheless, certain small steps can still be taken to better the infrastructure built in the state schools. The synchronization of the tablets with the smart boards will surely contribute to the active use of the tablets in English courses. In addition, a 2.5 billion-dollar project requires measurement, investigation, various analyses, and scholarly reporting of variables that relate to learners and learning, which remains as a weak point of the project. Finally, it is critically important to investigate the English e-content of the project in the light of the national English curriculum and syllabi to tailor the present e-content in line with national English programs. However, it should be borne in mind that the study is based merely on self-report data obtained from the students, which is related to the nature of the construct investigated. In addition, due to the practical constraints, this paper cannot provide teachers' perceptions to get a clearer insight into the impact of the FATİH project.

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	In Turkey	For the other Contexts
Before the Project	It was found that the new comers, 9th graders, have a more positive attitude toward the FP. Considering the bureaucratic procedures, the settlement process may lead to negative attitude in the higher graders.	The planning phase should be carried out meticulously in order to lead the inner sources of the students in a more positive way.
	A digital divide was observed among schools and the economic stratum. Access and familiarity with the ICT tools were shown to affect the competency of the students.	Socio-economically disadvantaged regions should be given priority in hardware installation and equipment supply to raise the students' competency in using ICT tools.
	Although the project initially aimed to provide equal opportunities to all students, the implementation process revealed that the socio-economic factors and learners' needs were not the primary concern of the initiation of the project at schools.	Contextual characteristics (learners' and teachers' characteristics and needs, socio-economic factors) should be taken into account in planning phase.
Before and during the Project	2.5 billion dollar was spent until the end of 2013.	Sustainable financing of procurement of ICT for students and teachers.
	Academia was not included in planning and implementations phases of the FP. They also were not asked for input in e-content development.	Academia should be included in the process as the shareholder that guides the process on how to pedagogically adapt and integrate technology into language teaching/learning.
	The study revealed that the students are moderately aware of the e-content of the FP and use it as supplementary materials. However, the analysis of the e-content displayed that the e-content on EIN are not interactive, flexible, and manageable to facilitate out-of-class use for language learning.	Online learning materials should be interactive and manageable to facilitate out-of-class use for language learning. EIN should provide online learning materials repository which is in line with the effective language teaching principles.

Table 8. Insights from the FATİH Project

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