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Predicting mathematics achievement: The role of perceived feedback, teacher support and self-beliefs

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ABSTRACT In this study, the mediating roles of perceived teacher support and students' mathematics self-beliefs on the feedback process were investigated in The Programme for International Student Assessment (PISA) context in Turkey. PISA 2012 mathematics scores and questionnaire responses of 4848 15-year-old students were analyzed. Results indicated that perceived feedback was positively related to math self-concept and negatively related to math anxiety. The investigated indirect effects were partly confirmed: perceived feedback was indirectly related to students' mathematics achievement via perceived teacher support and math self-efficacy. Also, perceived feedback showed an indirect effect on students' mathematics achievement via math anxiety. However, the influences of perceived teacher support on math self-concept and anxiety, and the mediating role of math self-concept were not supported. The results suggest the importance of investigation of mediated effects of teachers' support and students' self-beliefs between teachers' feedback and mathematics achievement. These relationships may help to understand how teacher's feedback influences mathematics achievement.

Keywords: *Perceived feedback, Perceived teacher support, Self-beliefs, PISA 2012 mathematics achievement*

Matematik başarısını yordama: Algılanan geri bildirim, öğretmen desteği ve öz-inançların rolü

ÖZ Bu çalışmada, algılanan öğretmen desteğinin ve öğrencilerin matematik ile ilgili öz-inançlarının geri bildirim sürecindeki aracı rolü Uluslararası Öğrenci Değerlendirme Programı (PISA) Türkiye verisi ile incelenmiştir. Türkiye' de 15 yaşındaki 4848 öğrencinin PISA 2012 matematik puanları ve anketlere verdikleri cevaplar analiz edilmiştir. Elde edilen sonuçlar, algılanan geri bildirimin matematik öz-benliğiyle pozitif, matematik kaygısıyla da negatif ilişkili olduğunu göstermiştir. Çalışmada incelenen dolaylı etkiler kısmen doğrulanmıştır: algılanan geri bildirim, algılanan öğretmen desteği ve matematik öz-yeterliği aracılığıyla dolaylı olarak matematik başarısıyla ilişkilidir. Ayrıca algılanan geri bildirimin, öğrencilerin matematik başarısıyla, matematik kaygısı aracılığıyla da dolaylı olarak ilişkili olabileceği görülmüştür. Bununla birlikte sonuçlar, algılanan öğretmen desteğinin öğrencilerin matematik öz-güveni ve kaygısı üzerindeki etkilerini ve matematik öz-güveninin öğretmen davranışları ve başarı arasındaki aracı rolünü desteklememiştir. Bulgular, öğretmen desteği ve öğrenci öz-inançlarının, öğretmenin geri bildirimi ile matematik başarısı arasındaki aracı rolünün incelenmesinin önemli olabileceğini işaret etmektedir. Bu ilişkiler öğretmen geri bildiriminin matematik başarısını nasıl etkileyebileceğini anlamaya yardımcı olabilir.

Anahtar Kelimeler: *Algılanan geri bildirim, Algılanan öğretmen desteği, Öz-inançlar, PISA 2012 matematik başarısı*

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INTRODUCTION

The teachers and the students are the two main actors in the educational stage. Naturally, the influence of these actors' behaviors on one another's endeavors has been an important topic in educational research. The association amongst teachers' feedback and students' motivational beliefs and achievement is one of these kinds of crucial research topics (Heritage, 2010).

Feedback is a critical component of formative assessment. It refers to all kinds of information provided by teachers to students regarding the aspects of their learning (Hattie & Timperley, 2007; Havnes, Smith, Dysthe, & Ludvigsen, 2012). The crucial potential of feedback is that it may contribute to reduce the gap between students' current and desired performances (Black & William, 1998; Black & William, 2009; Torrence & Pryor, 1998). There is a growing body of research emphasizing the positive role of teachers' feedback on students' performance in the teaching and learning process (Hattie, 2012).

However, it seems that due to the quite complex nature of relations among teachers' feedback and various student outcomes, there is a need for further research to better understand how feedback influences the outcome (Murtagh, 2014; Rakoczy et al., in press; Thurlings, Vermeulen, Bastiaens, & Stijnen, 2013). As Thurlings et al. (2013) indicate, it is not only the direct relations to investigate between the feedback and, say, students' mathematics achievement. It is also highly possible that there are some additional variables in the learning environment that may influence and mediate the feedback process. For example, it might be that teachers' feedback increases students' motivation and, hence, their achievement. In such a situation, regression models which account for the mediating roles of variables are required. Mediational models make it possible to see not only the direct relations, but also how teachers' feedback influences student outcomes indirectly via some other variables in the learning environment.

Besides, constructing a mediational model to test requires a convenient theoretical framework. The socio-cultural theory provides such a framework to hypothesize complex relationships among variables related to teachers' feedback and students' achievement (Li, 2016; Thurlings et al., 2013). According to the social cultural perspective, students learn through their social interactions with others (Vygotsky, 1978). Similarly, any feedback received by students may promote student-teacher interactions in the classroom (Skipper & Dougles, 2015). Feedback to students involves supportive teacher behavior (Torrence & Pryor, 1998). When teachers use feedback effectively to guide and modify students' learning, they engage more with students; when students receive feedback from their teachers about their learning, they are more likely to perceive their teacher as being more supportive. However, few studies have explored how teachers' feedback influences the students' perception of teacher-student relationships (e.g., Skipper & Dougles, 2015).

More specifically, research focused on mathematics learning indicates that teachers' feedback may provide opportunities for students to correct their mistakes in mathematics, and may positively affect students' motivational beliefs or achievement (e.g., Harks, Rakoczy, Hattie, Besser, & Klieme, 2014; James, Amos, & Adeniyi, 2013; Nunez-Pena, Bono, & Suares-Pellicioni, 2015; Ofem, Idika, & Ovat, 2017; Pinger, Rakoczy, Besser, & Klieme, 2018; Rakoczy, et al., in press). Similarly, research showed that teacher support also influences students' motivation and mathematics achievement (Ahmed, Minnaert, van der Werf, & Kuyper, 2010; Yıldırım, 2012). In a recent study, Özkal (2018) demonstrates that teachers' supportive behavior positively affects students' motivation to engage in mathematics. Thus, the findings of the literature suggest that perceived feedback and teacher support have the potential to affect the students' motivational beliefs, and their subsequent achievement in mathematics. In line with social cultural perspectives, it is expected that teachers' feedback might influence students' motivational beliefs and achievement indirectly via teacher support.

In this study, we focused on self-beliefs as components of motivational beliefs. A recent study reported that self-beliefs (such as mathematics self-efficacy, self-concept and anxiety) appear to be strong predictors of mathematics achievement (Stankov & Lee, 2017). Self-concept and self-efficacy are conceptually different structures about students' own ability (Bong & Clark, 1999; Bong & Skaalvik, 2003; Morony, Kleitman, Lee, & Stankov, 2013). Self-concept describes a student's conception or perception of their abilities and competencies (Schunk & Pajares, 2005), and is influenced by their experiences and interpretations about social comparisons (Bong & Skaalvik, 2003), such as students comparing themselves with their classmates. In contrast, self-efficacy refers to a student's cognitive judgment on how they could succeed in a given task (Bandura, 1997; Bong & Skaalvik, 2003; Pajares, 1996). Research findings suggest a positive relationship between self-efficacy and mathematics achievement (Peters, 2013; Zajacova, Lynch, & Espenshade, 2005), and self-concept and mathematics achievement (Obilor, 2011; Pipere & Mierina, 2017; Wang, Osterlind, & Bergin, 2012). On the other hand, anxiety refers to a student's negative emotional feeling and reaction about performing a task, and is related to the negative forms of self-efficacy and self-concept (Morony et al., 2013). Studies have also shown that anxiety is a negative significant predictor of mathematics achievement (e.g., Metallidou & Vlachou, 2007; Yıldırım, 2012). Studies have indicated that teacher feedback to students has an important influence on students' self-beliefs. Students perceiving feedback from their teachers are less likely to be anxious about their mathematics learning (Nunez-Pena et al., 2015; Ugodulunwa & Okolo, 2015). Similarly, Burnett (2003) indicates that teacher feedback predicts students' mathematics self-concept positively. Findings of a recent study by Rakoczy et al. (in press) also support the view that self-efficacy beliefs may have a potential to mediate the relationship between teacher's feedback and mathematics achievement. Similarly, previous research indicates that teacher support may be indirectly related to mathematics achievement via self-beliefs (e.g., Ahmed et al., 2010, Yıldırım, 2012). Therefore, it is expected that teacher's feedback and support might be both directly, and indirectly, related to mathematics achievement via self-beliefs.

The present study

Overall, the literature suggests a complex picture of effectiveness regarding the feedback mechanism in learning contexts. Some of the questionnaire items introduced in PISA 2012 are related to students' perceptions of teacher behaviors in the mathematics classroom, and to their mathematics self-beliefs. These items align well with the conceptual framework of this study. Drawing on this data, the purpose of this study is to investigate the relations among perceived feedback, perceived teacher support, self-beliefs and mathematics achievement. Our primary interest is the underlying mechanism of the feedback process. Therefore, in line with the theoretical and empirical foundations of the relations as explained above, we formulated the following research questions: 1) Is there an effect of perceived feedback on perceived teacher support?; 2) Are there any effects of perceived teacher behavior (feedback and support) on students' math self-beliefs (self-efficacy, self-concept, anxiety)?; 3) Are there any effects of perceived teacher behavior (feedback and support) and students' math self-beliefs (self-efficacy, self-concept, anxiety) on students' mathematics achievement?; 4) Is there an indirect effect of perceived feedback on math self-beliefs (self-efficacy, self-concept, anxiety) via perceived teacher support?; 5) Are there any indirect effects of perceived feedback on students' mathematics achievement via perceived teacher support and math self-beliefs (self-efficacy, self-concept, anxiety)?; 6) Is there an indirect effect of perceived teacher support on mathematics achievement via math self-beliefs (self-efficacy, self-concept, anxiety)? The conceptual model presented in Figure 1 summarizes these complex relationships.

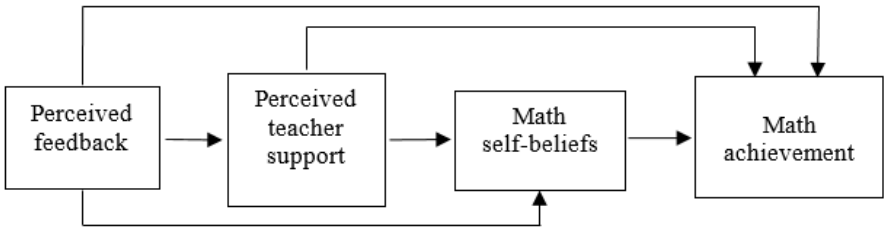

Figure 1. The conceptual model

Although similar relations have been studied in different learning domains, e.g. reading (Li, 2016), findings on secondary students' mathematics learning are not so abundant (Harks et al., 2014; Pinger et al., 2018). Moreover, these theoretical relations might be influenced by demands of different educational systems. As suggested by Caro, Lenkeit and Kyriakides (2014) some teaching behaviors do not work equally across different populations. Therefore, further research is required to closely examine the effects of teachers' teaching behaviors in different educational settings. We investigated these relations in the context of PISA 2012 mathematics domain in Turkey. Considering Turkey's low mathematics achievement in PISA, the current study may provide some insight into this poor performance. This research may lead to enhance the generalizability of the relations, and to the development of intervention programs related to teachers' feedback practices. Nevertheless, results of this study will not provide causal relationships due to cross-sectional design of PISA studies.

This study also takes into account the gender and SES differences as control variables. In the literature, there is evidence that students' gender may influence their perception of teacher feedback (Carvalho, Santos, Conboy, & Martins, 2014; Chen, Thompson, Kromrey, & Chang, 2011; Havnes et al., 2012) and teacher support (Gasser, Grütter, Buholzer, & Wettstein, 2018; Hajovsky, Mason, & McCune, 2017). Research also showed that boys report more positive self-beliefs than girls in mathematics (Kvedere, 2014). Similarly, there is also evidence that family-SES may be positively related to students' motivational beliefs (Koutsoulis & Campbell, 2001) and achievement (Çiftçi & Cin, 2017; Valero et al., 2015). In addition, Fan, Williams and Corkin (2011) demonstrate that SES related factors may also influence students' perceptions of school climate such as teacher-student relationships.

METHODOLOGY

Research Design

In this current study, researchers aim to understand the indirect causal relationship between perceived feedback and mathematics achievement via perceived teacher support and mathematics self-beliefs. Therefore, the research design for this study is correlational research which is analyzed through quantitative methods. This design enables researchers to investigate a theory based relationship between a set of variables (Fraenkel, Wallen, & Hyun, 2012).

PISA Design

The Programme for International Student Assessment (PISA) studies is an ongoing study to measure how well students at age 15 are prepared to meet demands of the knowledge society. To this purpose, PISA administers cognitive tests and context questionnaires on the domains of reading, mathematics, problem solving and science. The PISA 2012 study focused on mathematics as a major domain (OECD, 2013).

Participants

Data from PISA 2012 Turkish sample were used. Specifically, we used the responses of 4848 students from 170 schools. Sampling procedure of PISA studies is a two stage stratified design by which first schools are sampled with probabilities proportional to school sizes, and then students are sampled within the sampled schools with the equal probability cluster sampling (OECD, 2014). Girls comprised 51% of the sampled students. The grade levels of students varied from 7th to 12th (7th grade, .4%; 8th grade, 2%; 9th grade, 27.2%; 10th grade, 66%; 11th grade, 4%; 12th grade, .3%).

Variables

Details on the reliabilities and construct validation of PISA scales are reported in the PISA 2012 Technical Report (OECD, 2014). Constructs studied in this current research are limited by the student questionnaire items from the PISA 2012 study (OECD, 2013).

Mathematics Teacher Behaviors

Perceived feedback (TCHBEHFA): There are four items in the questionnaire that measure the perception of feedback, or what PISA labels as "formative assessment". Students reported how often (on a four degree Likert scale from" every lesson" to "never or hardly ever") the following four situations happened in their mathematics classes; "the teacher tells me about how well I am doing in my mathematics class", "the teacher gives me feedback on my strengths and weaknesses in mathematics", "the teacher tells us what is expected of us when we get a test, quiz or assignment", and "the teacher tells me what I need to do to become better in mathematics". These items align with the prior research on feedback scale development (e.g., Carvalho et al., 2015).

Perceived teacher support (MTSUP): Similarly, PISA 2012 assessed teacher support via students' responses on how often (on a four degree Likert scale from "every lesson" to "hardly ever") the following five situations happened in their mathematics lessons; "the teacher shows an interest in every students' learning", "the teacher gives extra help when students need it", "the teacher helps students with their learning", "the teacher continues teaching until the students understand", and "the teacher gives students an opportunity to express opinions".

Self-beliefs

Mathematics self-efficacy (MATHEFF): This scale was constructed using student responses of how confident they felt (on a four degree Likert scale from "very confident" to "not at all confident") about doing the following eight specific tasks; "using a train timetable to work out how long it would take to get from one place to another", "calculating how much cheaper a TV would be after a 30% discount", "calculating how many square meters of tiles you need to cover a floor", "understanding graphs presented in newspapers", "solving an equation like 3x+5=17", "the actual distance between two places on a map with a 1: 10.000 scale", and "solving an equation like 2.(x+3)=(x+3).(x-3)".

Mathematics self-concept (SCMAT): This scale was constructed via student responses to a four degree Likert scale from strongly agree to strongly disagree. The five statements about students' perceived competence were; "I am just not good at mathematics", "I get good grades in mathematics", "I learn mathematics quickly", "I have always believed that mathematics is one of my best subjects", and "In my mathematics class, I understand even the most difficult work".

Mathematics anxiety (ANXMAT): Similarly, this scale was constructed using student responses of how they agree (on a four degree Likert scale from "strongly agree" to "strongly disagree") with the five statements when dealing with mathematics; "I often worry that it will be difficult for me in mathematics classes", "I get very tense when I have to do mathematics homework", "I get very nervous doing mathematics problems", and "I feel helpless when doing a mathematics problem".

Controlling variables students' gender and socio-economic status (SES)

Considering students' gender and SES in the analyses provided an opportunity to determine the effects of these variables on teacher support, self- beliefs and achievement, and to estimate the relations among the variables controlling for gender and SES. SES (ESCS) as measured in PISA is an index variable constructed using students' parental occupational status and home possessions.

Student mathematics achievement

In PISA studies students answered different test booklets and their proficiency scores were obtained using the Rash modeling methodology. There were five proficiency scores (plausible values) in PISA 2012 mathematics data. In the present study, analyses were conducted for each plausible value, and then the statistics obtained from each of the analyses were aggregated to get the final estimates using HLM 6 (Raudenbush, Bryk, & Congdon, 2004).

Analyses

The variables we used had missing values (35% each, due to the rotated design) in PISA 2012 questionnaire data (OECD, 2014). Therefore, prior to conducting the regression analyses, we imputed missing in all variables of interest with the Predictive Mean Matching (PMM) method (Kaplan & Su, 2016; van Buuren & Groothuis-Oudshoorn, 2011) using the MICE (multiple imputation by chained equations) package in R (R Development Core Team, 2017). The IEA IDB analyzer (IEA, 2017) was used to estimate the descriptive statistics and the correlations between the variables.

Due to the hierarchical structure (students within schools) of the PISA data, we used the two-level multilevel model using HLM 6 (Raudenbush, Bryk, & Congdon, 2004). We performed sequential multilevel regression analyses using the centering within context with reintroduction of the subtracted means (group mean centering approach) (Zhang, Zyphur & Preacher, 2009). Researchers suggest that the group mean centering is appropriate when the primary interest is predictors at level 1 (in this study at student level) (Enders & Tofighi, 2007). At the student level, variables (perceived feedback, math teacher support, math self-efficacy, math self-concept and math anxiety) and control variables (gender and SES) were inserted into the models. In the analyses, total student weight and school weight were used. All variables were standardized prior to the HLM analyses. Intra-class correlation coefficients (ICC) were estimated using the results of random effect ANOVA (Raudenbush & Bryk, 2002). Also, the joint significance test was used to calculate the level of statistical significance of the indirect effects (Leth-Steensen & Gallitto, 2016; Taylor, Mackinnon, &Tein, 2008). We used the Zhao, Lynch and Chen (2010) classification to test the indirect relations investigated in the study.

FINDINGS

We first examined the association among the variables. Table 1 reports the zero-order correlations among the scales, means and standard deviations. Then we examined the intra-class correlations for the dependent variables. Results indicated that ICC was 6% for perceived math teacher support, 19% for math self-efficacy, 2% for math self-confidence, 2% for math anxiety, and 68% for PISA math achievement.

Table 1.
Descriptive statistics and correlations

	Variables	Mean	SD	1.	2.	3.	4.	5.	6.	7.
1.	Perceived feedback	.18	1.03							
2.	Perceived teacher support	.35	1.06	.48**						
3.	Math self-concept	-.05	.93	.18**	.08**					
4.	Math self-efficacy	-.08	.86	.10**	.11**	.27**				
5.	Math anxiety	.27	1.01	-.10**	-.02	-.43**	-.13**			
6.	Student SES	-1.46	1.10	.01	.00	.07	.21**	-.05		
7.	Gender	-	-	.05	-.07**	.04	.08**	.00	.00	
8.	PISA 2012 math achievement	447.98	91.07	-.01	.01	.17**	.44**	-.18**	.38**	.04

Note. Gender was coded 1=girl, 2=boy. $^{**}p < .01$; $^{*}p < .05$. SES= socio-economic status. All values on index variables have a mean of 0 and standard deviation of 1 across countries. Higher values show support for these constructs. Positive value indicates that when OECD country students are taken into account, students in Turkey on the investigated characteristics have more positive perceptions. For the negative value this is the other way around.

As shown in Table 2, perceived feedback had a positive effect on perceived teacher support. Gender and SES differences were not significantly related to the perceived teacher support. At the student level, 26% of variance in the perceived teacher support was explained by the perceived feedback. At the student level, 7%, 6%, and 5% of the variance between the students were explained for by math self-efficacy, math concept, and math anxiety respectively.

Table 2.
Results of HLM analyses

Predictors	Perceived teacher support		Math self-efficacy		Math self-concept		Math anxiety		PISA 2012 math achievement	
	β	SE	*β*	SE	*β*	SE	*β*	SE	*β*	SE
Gender	-.06*	.02	.10**	.02	.02	.03	.00	.03	.08**	.02
SES	-.02	.02	.12**	.02	.03	.02	.03	.02	.04**	.02
Perceived feedback	.50**	.02	.04	.02	.15**	.03	-.13**	.02	.00	.01
Perceived teacher support			.14**	.03	.03	.03	.03	.03	-.01	.01
Math anxiety									-.06**	.01
Math self-efficacy									.15**	.02
Math self-concept									.03	.01
R^2 student level		.26		.07		.06		.05		.15

Note. Gender was coded 1=girl, 2=boy. $^{**}p < .01$; $^{*}p < .05$. SES= socio-economic status.

As shown in Table 2, perceived teacher support and perceived feedback were significant positive predictors of math self-efficacy and math self-concept respectively; however, perceived feedback was a significant negative predictor of math anxiety. The results of the present study suggest that the perceived teacher support mediates the relationship between perceived feedback and math self-efficacy. The results did not support the indirect effect of perceived feedback on math self-concept and anxiety through perceived teacher support. Boys reported higher levels of math self-efficacy beliefs. Gender differences were not significantly related to math self-concept and anxiety. SES was a positive predictor of math self-efficacy. Math self-efficacy and math anxiety are significant predictors; perceived feedback, perceived teacher support, and math self-concept are non-significant predictors of PISA math achievement. At the student level, 15% of the variance explained for PISA math achievement in the presence of the gender and SES. The results related to indirect relations are demonstrated in Figure 2. In the joint significance test, there is a mediated effect if each of the paths in the mediation is statistically significant (Taylor et al., 2008). As shown in Figure 2, perceived feedback was a significant predictor of perceived teacher support, and perceived teacher support was a significant predictor of math self-efficacy; similarly, math self-efficacy was a significant predictor of PISA math achievement. Therefore, as shown in Figure 2, the results indicate the mediational role of perceived teacher support and math self-efficacy between the perceived feedback and PISA math achievement. Furthermore, the results of the present study suggest that there is only an indirect relationship between perceived teacher support and PISA math achievement through math self-efficacy. The results also suggest that perceived feedback is indirectly related to PISA math achievement through math self-efficacy and math anxiety. The results have not supported the indirect effect of perceived feedback on math achievement through math self-concept. Student level R^2 values and only significant paths ($^{**}p< .01$) are presented in Figure 2.

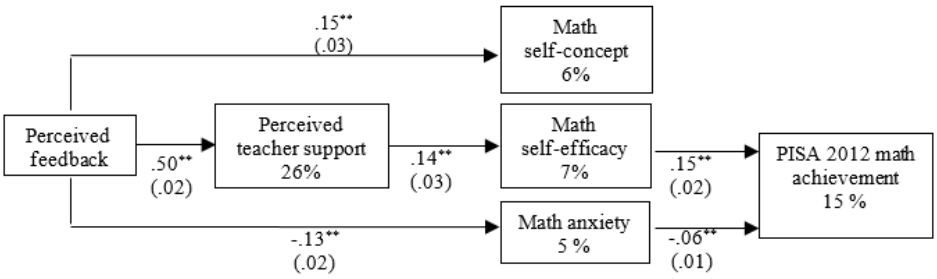

Figure 2. Regression coefficients and standard errors in conceptual model

DISCUSSION and CONCLUSION

In the present study, we examined the role of perceived feedback, teacher support and self-beliefs in predicting students' achievement in the domain of mathematics. The results revealed that students' perceived feedback influence their perception of teacher support and, thus, their math self-efficacy. The results also showed that perceived feedback has an indirect positive effect on mathematics achievement via math self-efficacy and anxiety. Contrary to our expectations, perceived feedback has neither been indirectly related to math self-concept and anxiety via perceived teacher support nor to mathematics achievement via math self-concept.

The finding on the positive relationship between perceived feedback and perceived teacher support is consistent with the social cognitive theory which supports the view that feedback has a potential role in increasing student-teacher relationships in the learning environment (e.g. Li, 2016; Skipper & Dougles, 2015; Torrence & Pryor, 1998). This finding shows the importance of examining how perceived feedback relates to perceived teacher support in understanding the feedback process.

Regarding the predictors of mathematics self-beliefs, we found that perceived feedback is directly related to math anxiety and math self-concept. Although the models predicting motivational beliefs in this study explain small amount of variance, the result is in line with studies which indicate that teachers' feedback influence students' motivational beliefs. For example, this finding supports Nunez-Pena et al. (2015) and Ugodulunwa and Okolo (2015) studies both of which indicate that teacher feedback may reduce anxiety in mathematics. Similarly, this finding parallels the work of Burnett (2003) whose research findings suggest a positive relationship between self-concept and teacher feedback. One of the considerable findings in this study is that feedback as perceived by students has a direct effect on students' math self-concept, while it is only indirectly related, via perceived teacher support to students' math self-efficacy. This finding may be explained by the nature of self-concept, which is mostly based on social comparisons (Bong & Skaalvik, 2003). To be more specific, we know that in a competitive learning environment, secondary schools' mathematics teachers are more likely to give feedback to their students by comparing their performance to the performance of other students than to a predefined content-related criterion (Harks et al., 2014). In Turkey, due to the national exams necessary to enter high schools and universities, the educational system is highly competitive. Thus, due to this structure, students may perceive their teachers' feedback on how well they are doing in their math class from a perspective of their relative position to their classmates. Consequently, this perception may show itself through a student's self-concept of how good they think they are at mathematics, thereby revealing a direct relationship between the perceived feedback and math self-concept.

In the same manner, when it comes to students' task-specific mathematics confidence (i.e. their self-efficacy), teachers' actual learning support as perceived by students (i.e. perceived teacher support) accounts for any possible direct relation between perceived feedback and math self-efficacy. In other words, perceived feedback may only be indirectly related to students' math self-efficacy in the extent to which it includes task specific statements. In view of that, giving well defined mathematics tasks may provide a better context to reveal the association among students' perceived feedback, teacher support, and their math self-efficacy. Therefore, in Turkey, the nature and quality of mathematics teachers' feedback, and its' effect on different types of self-beliefs needs to be detailed further.

The diversity among the nature of self-efficacy, self-concept and anxiety may also partly explain the mediating role of teacher support in the model of this study. As stated before, self-efficacy as measured in PISA is more related to cognitive judgments based on specific math tasks, whereas self-concept and anxiety are more connected to an affective evaluation of students themselves. Teacher support in this study only mediates feedback on self-efficacy. This means that when the students' perceived feedback is taken into account, mathematics teachers' supportive behaviors are hardly related to students' affective or emotional beliefs (i.e., self-concept and anxiety).

In regards to the role of perceived teacher support on anxiety, there are studies with which the result of the present study is in line. For example, Taylor and Fraser (2003) and Yıldırım (2012) indicate that perceived teacher support may not be effective in reducing high school students' mathematics anxiety. However, there are some contradictory results in the literature as well. For example, in a study in the Netherlands by Ahmed et al. (2010), findings suggest that teacher support decreases junior secondary school students' anxiety level, and increases their self-competence in the mathematics domain. Therefore, it is possible to claim that cultural differences among countries should also be taken into account in order to further detail the complex relationship among teachers' feedback and various types of student self-beliefs.

Concerning self-belief predictors of PISA 2012 mathematics achievement, students' math self-efficacy and anxiety in our study proved to be significant predictors of achievement. In line with previous research (Zajacova et al., 2005) the effect of anxiety on mathematics achievement was small in comparison to the effect of math self-efficacy. Additionally, self-concept did not predict the Turkish students' mathematics achievement. In other words, math self-concept did not mediate the feedback process on achievement. This finding, however, is contrary to findings by Tosto, Asbury, Mazzocco, Petrill and Kovas (2016), whose research suggests that in the United Kingdom, academic self-concept of pupils at age 16 was a mediating variable between perceptions of classroom environment and mathematics achievement. The present results demonstrate the complexity of the mediational role of teacher's behavior in classrooms and students' self-beliefs between perceived feedback and achievement.

Despite the fact that there are studies that indicate the direct influence of formative assessment (e.g., Li, 2006) and support (e.g., Ahmed et al., 2010) on achievement, in this present study, both perceived feedback and perceived teacher support were not directly related to mathematics achievement. However, findings regarding the mediating role of teacher support, math self-efficacy and anxiety supported previous work of Thurlings et al. (2013), which indicates the existence of variables that mediate the feedback process. The results of this study show that mathematics achievement is fostered by different indirect effects.

Prior research has demonstrated that the perception of teacher-student relationships has a mediating role between formative assessment and students' PISA reading achievement (Li, 2016). Similarly, it appears that mathematics is yet an additional subject in which an indirect effect of feedback on mathematics achievement via perception of teacher support exists. Results support the expectation that students receiving feedback from teacher about their mathematics learning are more likely to perceive their teacher as being supportive. This supportive relationship in the classroom influences the students' math self-efficacy and, hence, their mathematics learning.

Similarly, the finding regarding the mediating role of self-efficacy is in line with Rakoczy et al. (in press), whose research indicates that, in Germany, students' self-efficacy has the potential to mediate the relationship between formative assessment and mathematics achievement. In our study, extending the prior research, we found that anxiety might also be a mediating variable between perceived feedback and mathematics achievement. Therefore, integrating the mediational role of anxiety into models of feedback process would be an important issue to consider in future research.

Research has shown that the effects of teachers' classroom practices on learning outcomes can be lower in developing countries (Santibanez & Fagioli, 2016). Turkey has a low socio-economic index among the participating countries in PISA. It appears that Turkey is one of the developing countries in which teaching practices related to formative assessment may have had low impact on students' self-beliefs and PISA mathematics achievement. The effects of teacher behavior at school or class level may be more related to student outcomes (e.g., Mikk, Krips, Säälik, & Kalk, 2016). In future research, it would be worthwhile to examine the effects of teachers' feedback and support on student outcomes at class level using teacher responses.

This study has limitations that need to be addressed. Firstly, this research was cross-sectional therefore, we cannot indicate any causal effects. In future research, longitudinal studies may provide causal relations about the underlying mechanism of feedback process. Secondly, this study was restricted to the Turkish sample. Future research could also extend this work by examining different cultures. Finally, we acknowledge that teacher feedback is more complex than what was measured in PISA. In PISA 2012 teachers' feedback was measured via students' perceptions. Although previous research indicates that the students' reports are useful measures for teachers' teaching practices (Burnett, 2003; Li, 2016), actual teacher feedback may have different effects than perceived teacher feedback. Therefore, future studies should investigate teachers' feedback through classroom observations and students' perception of teacher feedback together.

In conclusion, we were able to show that perceived teacher feedback influences the perception of teacher support and, thus, students' self- beliefs and mathematics achievement, even though our results partly met our expectations. Due to the fact that students who received feedback from their teacher are more likely to perceive their teacher as being supportive, enhancing feedback practices would contribute to student learning. Teachers need to consider the importance of their feedback practices, and the mediating effects of their behaviors and students' self-beliefs on students' mathematics learning.

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TÜRKÇE GENİŞLETİLMİŞ ÖZET

Öğretmen davranışları ile öğrenme çıktıları arasındaki ilişkiler incelendiğinde, öğretmenlerin öğrencilere geri bildirim vermesinin öğrencilerin motivasyonel inançlarını ve başarılarını etkileyen önemli bir faktör olduğu görülmektedir. Geri bildirim öğrencilerin var olan bilgileri ve olması gereken bilgileri arasındaki farkı azaltmaya katkıda bulunmaktadır. Geri bildirim ile öğrenci başarısı arasındaki ilişkide etkili olabilecek başka değişkenler de olabilir ve bu değişkenlerin rolü sosyal kültürel teori çerçevesinde incelenebilir. Sosyal kültürel teoriye göre, öğrenciler başkalarıyla sosyal etkileşimleri aracılığıyla öğrenirler. Benzer şekilde, öğretmenler, öğrencilerin öğrenmelerini yönlendirmek ve değiştirmek için geri bildirimi etkin bir şekilde kullandıklarında, öğrencilerle olan etkileşimleri de artar. Bu etkileşim öğretmenlerin destekleyici davranışlarını da içerir. Geri bildirim alan öğrenciler, öğretmenlerinden daha fazla destek almış olurlar. Öğretmenin geri bildirimi ve desteği öğrenci motivasyonu veya başarı üzerinde etkili olabilir. Örneğin, öğretmenin geri bildirimi, öğretmen desteğini artırırken, motivasyon aracılığıyla da başarı üzerinde etkili olabilir. Özellikle ortaokul matematik başarısı ile ilgili olarak bu ilişkilerin araştırıldığı çalışma sayısı oldukça sınırlıdır. Bu nedenle bu çalışmada öğretmen desteği ile birlikte, öğrenci motivasyonunun geri bildirim ile matematik başarısı arasındaki aracı rolü PISA 2012 bağlamında incelenmiştir. Literatür öğrencilerin matematik öz-yeterliği, öz-benliği ve kaygısının matematik başarısı üzerinde etkili olabilecek en önemli öz-inançlar olduğunu gösterdiğinden bu çalışmada bu üç değişkenin aracı rolü incelenmiştir. Bu çalışmanın bulguları matematik öğrenme ortamlarındaki öğretmen davranışlarının etkilerinin anlaşılmasını sağlayabilir. Türkiye'nin PISA' daki düşük matematik başarısı göz önünde bulundurulduğunda, mevcut çalışma bu zayıf performansa farklı bir bakış açısı sağlayabilir.

Çalışmadaki değişkenler, PISA 2012 öğrenci anketlerinde yer alan maddelerle sınırlıdır. Bu değişkenlerden elde edilen verinin güvenirliği ve yapı geçerliği PISA 2012 teknik raporlarında detaylı bir şekilde yer almaktadır. PISA 2012 verisinin, önce okulların sonra okullardan öğrencilerin rastgele seçilerek elde edildiği, çok düzeyli bir örneklem yapısı vardır. Ayrıca, PISA sonuçları, Türkiye'de öğrencilerin matematik öz-yeterliği ve matematik başarıları arasındaki farklılığın okul düzeyindeki farklılıktan da kaynaklanabileceğini göstermiştir. Bu nedenle, bu çalışmada analizler okul düzeyi ve öğrenci düzeyi dikkate alınarak yapılmıştır. Ayrıca, öğrenci cinsiyeti ve sosyo-ekonomik statüsü de incelenen değişkenlerle ilişkili olabileceğinden kontrol değişkeni olarak analizlerde yer almıştır. Analizlerde, algılanan geri bildirim, algılanan öğretmen desteği, öz-yeterlik, öz-benlik, kaygı, cinsiyet ve sosyo-ekonomik statü değişkenleri ve matematik puanları kullanılmıştır.

Elde edilen sonuçlarda, sosyal kültürel teori ile uyumlu olarak algılanan geri bildirimin, algılanan öğretmen desteği üzerinde olumlu bir etkisinin olabileceği görülmektedir. Ancak, algılanan geri bildirim ve matematik başarısı arasındaki ilişkilerde algılanan öğretmen desteğinin ve öğrencilerin öz-inançlarının aracı rolü kısmen doğrulanmıştır. Algılanan geri bildirimin, öğrencilerin matematik öz-benliği ve matematik kaygıları üzerinde istatistiksel olarak anlamlı bir etkisinin olabileceği görülmüştür. Öz-benlik, öğrencilerin kendi matematik başarılarını sınıf arkadaşlarının başarılarıyla karşılaştırmalarından etkilenen bir inançtır. Türkiye'deki sınav sisteminden dolayı öğretmenlerin öğrencilere verdikleri geri bildirimler, öğrencilerin arkadaşlarının matematik performanslarıyla karşılaştırılmasını içerebilir. Bu nedenle, algılanan geri bildirim ile öz-benlik doğrudan ilişkili bulunmuş olabilir. Benzer şekilde kaygı da öz-benliğin olumsuz şekli olduğundan algılanan geri bildirim ile arasında negatif bir ilişki elde edilmiş olabilir. Bununla birlikte, algılanan geri bildirimin matematik öz-yeterliği üzerinde doğrudan bir etkisi görülmezken, algılanan öğretmen desteği aracılığıyla dolaylı bir etkisi vardır. Matematik öz-yeterliği ise öğrencilerin belirli matematik konularında kendilerini yeterli görüp görmedikleri ile ilgilidir. Bu nedenle, geri bildirimin, öz-yeterlik özerinde etkili olabilmesi için daha fazla öğretmen-öğrenci etkileşimi gerekiyor olabilir. Öğretmenin geri bildirimi her ne kadar öğretmenin öğrencilere olan desteğini artırsa da, sonuçlarda algılanan öğretmen desteğinin öz-benlik ve kaygı üzerinde etkisi olmamıştır. Öğretmen desteğinin öz-inançlar üzerindeki rolünün de farklı olabileceği görülmektedir. Matematik öğretmenlerinin desteği, öğrencilerin matematik konularındaki yeterliklerini bilişsel olarak değerlendirmeyi içeren öz-yeterlik inançları üzerinde etkili olurken, daha

duyuşsal yargıları içeren öz-benlik ve kaygı gibi öz-inançlar üzerinde etkili olmayabilir. Bu nedenle, geri bildirim ve öğretmen desteğinin farklı öz-inançlar üzerindeki etkilerinin yapılacak olan çalışmalarda araştırılması daha detaylı genellenebilir sonuçlar ortaya çıkarabilir. Matematik başarısının istatistiksel olarak anlamlı yordayıcıları ise matematik öz-yeterliği ve matematik kaygısı olmuştur. Elde edilen sonuçlar, algılanan geri bildirim ve matematik başarısı arasındaki ilişkide, algılanan öğretmen desteğinin, öz-yeterliğin ve kaygının aracı rolünün olabileceği varsayımını desteklemiştir. Özetle, sonuçlar, öğretmenin geri bildirimi sonucunda öğrencilerin öğretmenlerini daha destekleyici olarak algılayabileceklerini ve bunun sonucu olarak matematik öz-yeterliklerinin ve başarılarının artabileceğini göstermiştir. Benzer şekilde, her ne kadar kaygının başarı üzerindeki etkisi az bulunmuş olsa da, öğretmenlerin geri bildiriminin öğrencilerin matematik kaygısını azaltma, bunun sonucu olarak da matematik başarıları artırma gibi bir sonucu olabilir.

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A Content analysis of graduate theses concerning early childhood education in Turkey

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ABSTRACT This study aims to investigate the descriptive characteristics, research topics and methodological procedures of master's theses and doctoral dissertations regarding early childhood education in Turkey. Within the scope of the current study, 931 Master's theses and 171 doctoral dissertations were analyzed according to university, institute, department, publication year, academic title of the advisor, research topic, sample group, location in which the study took place, research setting of the study, type of research, instruments, statistical analysis, and sampling methods. The study covers theses published from 1986 to 2016, and a content analysis method was implemented for data analysis. As expected, the current study found that students were the most frequently used subject groups in both MS theses (37.39%) and PhD dissertations (53.39%). In the MS theses, researchers mostly preferred research topics regarding the education of young children (29.95%) whereas in PhD. dissertations, researchers mainly focused on developmental issues (32.78%). Nearly, all the graduate theses were conducted in city centers and central districts.

Keywords: *Early childhood education, Content analysis, Graduate education, Graduate theses, Theses examination*

Türkiye'deki erken çocukluk eğitimi üzerine yazılmış lisansüstü tezlerin bir içerik analizi

ÖZ Bu çalışma, Türkiye'deki erken çocukluk eğitimi üzerine yazılmış, yüksek lisans ve doktora tezlerinin betimsel özelliklerini, araştırma konularını ve metodolojik yöntemlerini incelemeyi amaçlamaktadır. Bu çalışma çerçevesinde, 931 yüksek lisans ve 171 doktora tezi, üniversite, enstitü, bölüm, yayınlanma tarihi, danışmanın akademik unvanı, araştırma konusu, örneklem grubu, araştırmanın gerçekleştirildiği mekân, çalışmanın araştırma düzeneği, araştırma türü, kullanılan araçlar, istatiksel analiz ve örnek alma yöntemi açısından analiz edilmiştir. Mevcut çalışma 1986-2016 yılları arasında yayınlanan lisansüstü tezleri kapsamaktadır. Çalışmada veri analizi yöntemi olarak içerik analizi uygulanmıştır. Güncel araştırmanın verileri göstermiştir ki, hem yüksek lisans (%37,39) hem de doktora tezlerinde (%53,39), öğrencilerin en sık kullanılan denek grubu olduğunu göstermiştir ki, bu beklenen bir bulgudur. Yüksek lisans tezlerinde, araştırmacılar çoğunlukla (%37,39) küçük yaştaki çocukların eğitimi üzerine araştırma konularını seçerken, doktora tezlerinde araştırmacılar, genellikle (%32,78) gelişimsel konulara odaklanmıştır. Neredeyse tüm lisansüstü tezler, şehir merkezlerinde veya merkezi ilçelerde gerçekleştirilmiştir.

Anahtar Kelimeler: *Erken çocukluk eğitimi, İçerik analizi, Lisansüstü eğitim, Lisansüstü tezler, Tez inceleme*

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INTRODUCTION

Although the definition of education has changed over the years, it basically refers to "*…the process of facilitating learning which has been an integral part of human societies since before we were even human*" (The Worldwatch Institute, 2017). Since ancient times, enabling people to reach their full potential has been one of the ongoing purposes of education. Moreover, providing intellectual development, meeting social needs, contributing to the economy, creating an effective workforce, providing job and career opportunities for students, and enhancing political and economic systems are the other widely accepted purposes of education. According to Foshay (1991), the broadest educational purpose statement covers all of these aspects and seeks to contribute to all domains of human experience (as cited in Brandt, 2000).

Graduate education constitutes the last stage of formal education and these programmes are managed by graduate schools offering master's and doctoral degree programmes which include both research and coursework. Graduate education differs from undergraduate education in terms of training and instruction. Undergraduate classes comprise larger groups, but graduate education appeals to smaller groups in which individual effort and self-directed learning are essential. Deeper training is provided in graduate education with increased specialization (Targonski, 2003). To this end, graduate education provides more specialized education in a particular field or a sub-field. Furthermore, a well-qualified graduate education programme improves participants' skills of problem solving, academic writing, oral presentation, and technology use (Ebel, n.d.).

Master of Arts or Doctor in Philosophy (in the field of education) degrees do not require one to be a teacher in most countries, but many inspiring teachers (enthusiastic) opt to pursue an advanced degree in a sub-specialty of education (Feiman-Nemser, 1989). Undertaking an advanced degree in early childhood education is a good way to enhance professional knowledge and career potential. Moreover, a graduate degree in early childhood education provides various opportunities for teachers to apply not only in the classroom environment but also outside the classroom. Having a graduate degree in early childhood education is an integral part of a career in academia and preparation for positions as an administrator or a lead teacher in early childhood education settings. Furthermore, these graduate programmes enable teachers to promote learning and development in young children from diverse cultural backgrounds and have different abilities in preschool settings (Guha, n.d.).

An advanced degree programme in early childhood education includes coursework and activities. Additionally, conducting original research in the form of a master's thesis and doctoral dissertation is a common requirement. The purpose of engaging in a graduate thesis is to equip students with specialized skills and advanced knowledge in early childhood pedagogy, technology, administration, community collaboration, and policy analysis [The National Institute for Early Education Research (NIEER), 2017].

Graduate studies also enhance the literature of the studied field. According to Jin (2004), graduate studies contain valuable knowledge, produced by scholars and experts in the field. Moreover, the studies assessed in the current work shed light on the amount of research that has been conducted to date and serve as a foundation for future graduate studies.

Since the 1970s, undergraduate early childhood education programmes have been available in Turkey. In the 2015-2016 academic year, there were 87 early childhood education undergraduate programmes (66 day-time and 21 evening education) within 66 universities in Turkey. Furthermore, graduate programmes have been offered in both Graduate Schools of Educational Sciences and Graduate Schools of Social Sciences since 1992. Although there is not adequate information concerning, the first early childhood education graduate study published in Turkey in the literature, Altun, Şendil and Şahin (2011) stated that the first early childhood education graduate programme was established in 1993. However,

an examination of the National Thesis Database of Turkey reveals graduate studies regarding early childhood education dating back to 1987 and a large number of theses were conducted in a variety of departments. Today, there are 24 graduate education programmes in early childhood education consisting of 19 M.S. and five Ph.D. programmes. In general, in the programmes, the medium of instruction is Turkish, but in Middle East Technical University (METU), instruction is offered in English (Ölçme Seçme ve Yerleştirme Merkezi, 2016). In the 2016 academic year, the total number of staff in early childhood education departments was 755 (70 professors, 64 associate professors, 339 assistant professors, and 282 research assistants) (Yükseköğretim Kurulu, 2017).

Considering the significance of graduate studies regarding early childhood education in Turkey, the current study aims to reveal the descriptive and contextual characteristics and methodological procedures of all online MS theses and PhD dissertations on early children education from 1989 to 2016 regardless of the department in which the study was conducted.

The examination of the international literature shows that studies investigating MS theses and doctoral dissertations reveal research trends dating back to the 1970s (Novak, 1975). The studies were conducted in different fields, such as education, health, and science (Al Kathiri, 2002; Dong, 1998; May & Holzemer, 1985; Rone, 1998) and various research methods were employed in these studies. Although the studies are prevalent in the education field (curriculum and instruction, blended learning, higher education), to our knowledge, the number of studies investigating early childhood education is limited (Hännikäinen, 2010; Rule, 2011).

In 2010, Hännikäinen examined eight doctoral dissertations published in the last 15 years from educational and other human science departments that described the policy and basic characteristics of early childhood education settings providing services to children aged one to three in Finland. The results of the study indicate that all the dissertations were conducted by female researchers, and the research topics of the dissertations covered specific content areas of early childhood education, such as play, music, and mathematics. In all the dissertations, qualitative and mixed method research designs were applied, and the observation technique was the most commonly used method of data collection. Rule (2011) investigated graduate research regarding both early childhood and basic adult and training in South Africa that was published from 1995 to 2004. According to results of the study, adult and early childhood educations were considered as insignificant fields. There was a lack of doctoral dissertations regarding early childhood education. Although the number of international studies on early childhood education graduate theses is limited, there are available studies in which journal articles regarding early childhood education were examined (Hanson, 1973; Lee, 2012; Zhang, 2015).

In the literature from Turkey, there are a number of journal articles that aimed to investigate graduate theses regarding early childhood education (e.g., Ahi & Kıldan, 2013; Altun et al., 2011; Bertan, Haznedaroğlu, Yurdakök, & Güçiz, 2009; Can Yaşar & Aral, 2011; Durukan, Atalay & Şen, 2015; Kaytez & Durualp, 2014; Taştepe, Öztürk Serter, Yurdakul, Taygur Altıntaş & Bütün Ayhan, 2016). Some of these studies discuss early childhood education in general with others focusing on specific aspects, such as drama, play, and inclusion. When the studies are examined, it is seen that all of the articles used document analysis as the data collection method and the data were obtained from the National Theses Database. The sampling methods of the studies varied according to the research questions, and both convenience and criterion-based sampling methods were used by the researchers. In terms of data analysis, descriptive statistics were chosen to present the results of the studies. These studies remain uninfluential because of their limited content and scope. Although the same database was used to obtain graduate theses and similar research methods were applied, the current study aims to conduct a deeper analysis with an inclusive perspective. In the data collection process, no time or department limitation was applied and early childhood education was only used as a keyword. The current study involves a comprehensive analysis with a large sample group and adopts an interdisciplinary understanding, thus, this research is significant in addressing the gap in the literature.

Significance of the Study

Universities have several social functions, including scientific research, producing and disseminating scientific information, and making new discoveries. Graduate studies in universities are one of the ways of producing and disseminating scientific information. According to Yıldız (2004), both qualitative and quantitative information regarding scientific studies conducted in a specific science area can provide information about the current situation of the field. Hart (1998) lists four reasons that emphasize the necessity of the compilation of scientific studies; (1) to discover which aspects of the field have been studied and which aspects and variable of the field have not yet been investigated, (2) to gain perspective regarding the field, (3) to have comprehensive knowledge about the content of the related field, and (4) to reveal the scientific methods and techniques which are used in the related studies.

The current study provides a comprehensive literature review built upon graduate studies produced by scholars in the field of early childhood education. The results will support the recognition of which subjects are well presented and which are undervalued in graduate studies on early childhood education. Moreover, the findings of this study provide information about current methodological and statistical trends. In addition, the results will provide an opportunity to observe the changes in research trends in early childhood education over the selected time period.

Aim of the Research

The current study aims to investigate descriptive and contextual characteristics of graduate studies regarding early childhood education to produce a full picture of the field in Turkey. In addition, the study examines the methodological procedures of the theses to reveal the preferred research trends based on the research methods and statistical techniques in these theses. The research questions of the study are;

1. What are the descriptive characteristics (university, institute, department, publication year, language of thesis, and the academic title of the advisor) of MS theses and doctoral dissertations regarding early childhood education in Turkey?

2. What are the contextual characteristics (research topic) of MS theses and doctoral dissertations regarding early childhood education in Turkey?

3. What are the methodological procedures (the sample group, the location where the study took place, research setting of the study, type of research, instruments, statistical analysis, and sampling methods) of the MS theses and doctoral dissertations regarding early childhood education in Turkey?

METHODOLOGY

Design of the Study

Qualitative research design was employed to respond to the research questions of the current study. According to Denzin, Norman and Lincon (2000), the qualitative research design is an approach to the world bearing naturalistic and interpretive characteristics. In qualitative studies, researchers attempt to define or interpret the subject with regard to the meanings that people attach to them. In other words, qualitative study is a process which questions and interprets problems regarding community and human problems with specific methods to make interpretations (Creswell, 1998). Moreover, in qualitative studies, researchers attempt to define or interpret the subject with regard to the meanings that people

attach to them. Yıldırım and Şimşek (2011) define qualitative design as an approach in which observation, interview and document analysis are used as data collection methods. Beliefs and events are revealed in their natural setting in a realistic and holistic way in qualitative studies. In the current qualitative study, document analysis was used as the data collection method. Document analysis is a process in which all written evidence related with the target phenomena analyzed to obtain data. According to Yıldırım and Şimşek (2011), document analysis can be used as a solitary data collection method as well as in combination with other methods. In the current study, M.S theses and PhD dissertations approved by graduate schools were used as sources of information in the document analysis process. For the data analysis process, the content analysis method was used in the analysis process of MS theses and PhD dissertations. According to Weber (1990), content analysis is a data analysis method in which data is summarized, classified and interpreted. As the current study aims to examine descriptive characteristics and methodological settings of the graduate theses, the content analysis method was found to be an appropriate method to use for data analysis.

Population and Sampling

In this study, the population includes all graduate dissertations and theses (collectively referred to as 'theses' in this paper) written on the subject of early childhood education in Turkey. For this reason, working with the whole population of the study is impractical because of time and budget limitations. Hence, the convenience sampling method was applied. Convenience sampling is one of the purposive sampling methods mostly used in qualitative studies (Devers & Frankel, 2000) and includes individuals who are conveniently accessible for the researcher to use in their studies (Fraenkel, Wallen & Hyun, 2012). Theses written in both Turkish and English languages were included in the sample. On completion of the data collection process, 1,494 graduate theses were examined, and 1,102 open access theses regarding early childhood education between 1986-2016 were identified as the sample of the study.

Data Collection

The data collection process of the current study began on 1 September 2016 and was completed on 20 May 2017. The investigation of the theses was conducted by the first author of the article. First, the researcher downloaded the theses having full access permission. Then, the cover pages and the abstracts of the theses were examined. Afterwards, the researcher continued the examination by investigating the summary, introduction, method and the findings sections of the theses to answer the research questions of the study. The total number of theses written on the subject of early childhood education is not known as there are numerous theses written on the subject from a large variety of different departments. Thus, the researcher acquired the theses from two online sources. Firstly, the National Theses Center (CoHE) was searched using the keywords in Turkish "okulöncesi eğitim" (preschool education), "anasınıfı" (nursery class), "erken çocukluk eğitimi" (early childhood education), and "aile katılımı" (parent involvement), and the theses which allowed full text access were identified and downloaded. Secondly, the online databases of 109 state and 76 private university libraries in Turkey were scanned online by the researcher using the same keywords as in the COHE search.

Coding and Categorization

Fraenkel et al. (2012) defined two different methods of creating categories in content analysis: first is category creation that is conducted prior to the analysis procedure. The researcher creates categories on the basis of the related literature, similar studies, and previous knowledge, theory and experiences. The second method is implemented during the analysis process; thus, the researcher gains more information about the content of the communication and proceeds with the creation of categories. Prasad (2008) stated that content categories are highly related to the literature and the research question; that is, categorization should respond to the query of the research question. For the current study, the researchers devised a categorization based on the related literature and similar MS theses and PhD dissertations. The categories and subcategories of the theses examination processes are presented in Table 1.

Table 1.
Thesis Examination Categories

Categories	Sub-Categories
Descriptive characteristics	CoHE Thesis Number
	Thesis Type
	Year of Publication
	Name of the University
	Name of the Institute
	Department
	Academic Degree of the Advisor
	Language of the Thesis
Content Knowledge	The Sample Group
	Content of the Thesis
	City/Region of Application
	School Setting
	School Status
Methodological Knowledge	Research Type
	Research Design
	Scale Type
	Data Analysis Technique
	Sampling Method
	Sample Size

Instrumentation

After defining the categories of content analysis, the unit of analysis was determined by the researchers. In this study, each thesis is defined as the unit of analysis. Subsequently, based on these categories and the unit of analysis, a tentative codebook was prepared by the first author to be used as a coding instrument. This codebook included the descriptive characteristics, the methodological settings, and the publication information of the theses. Then, the codebook and the detailed explanation of the categorization process report were sent to an assistant professor in the early childhood education department to receive the opinion of an expert. After the feedback from the expert, the codebook was reconfigured. The expert's recommendations were mostly related to the vocabulary of the category titles and terminology. Some of the codes were redesigned by searching the related literature. Finally, the thesis examination form was created. Afterwards, a pilot study of the thesis examination form was designed in the light of the expert opinion. The form took its final version at the end of the pilot study.

Validity and Reliability

Both the validity and reliability of the study was assessed. The validity issue was considered in terms of face validity, external validity and content validity. First, the face validity issue was handled. In the current study, the instrument was developed by the researcher, and the related literature and similar studies were considered during the construction of the instrument. The researcher also received expert opinion from an assistant professor in early childhood education department after preparing the first draft. Based on the expert opinion, the instrument was revised, and the last version of the instrument was constructed via a pilot study. At the end of the pilot study, the instrument was appraised as being valid, having the quality of being able to make the intended measurement. Secondly, the external validity of the instrument was checked. The population of this study includes all graduate theses written on the subject of early childhood education in Turkey. For this reason, it is almost impossible to obtain all the theses; therefore, theses having online full-text access were included in the study. Thirdly, content validity was ensured; two different research assistants who had conducted content analysis studies reviewed the thesis examination form. Lastly, the reliability of the study was ensured. In the current study, both the inter-coder reliability and the test-retest techniques were applied to provide reliable results. The inter-coder reliability was measured using Cohen's Kappa. The Kappa value for the current study was calculated to be .86, which was a sufficient degree of agreement between the coders. For the test-retest reliability, eight weeks after the first coding was completed, another coder applied the coding procedure once more.

Data Analysis Procedure

Descriptive statistics and frequencies were employed for the analysis of the data, and the Statistical Package for Social Science (SPSS 22.0) was used for the data analysis. The findings of the study, the descriptive and methodological characteristics of the graduate theses, are presented in frequency tables and figures.

FINDINGS

Results Regarding the Descriptive Characteristics

First, 931 MS theses regarding early childhood education found in the CoHE database were examined according to publication years as shown in Figure 1. The first available MS thesis regarding early childhood education in Turkey was published in 1989, and the highest number of MS theses were published in 2016 (n=100).

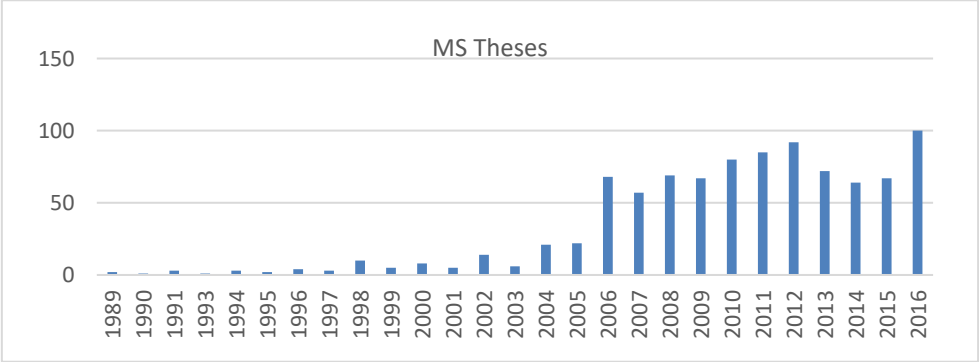

Figure 1. Publication years of MS theses

In addition, 171 PhD dissertations regarding early childhood education were included according to descriptive characteristics. The results related to the publication years of these theses are given in Figure 2.

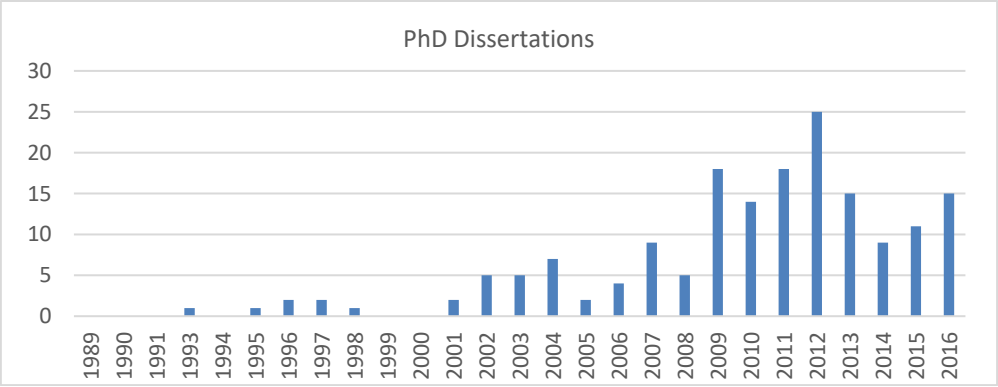

Figure 2. Publication years of PhD dissertations

Figure 2 shows that the first available PhD dissertation regarding early childhood education in Turkey was published in 1993. The results also show that the highest number of PhD dissertations were published in 2012 (n=25).

Secondly, the names of the universities from which the graduate theses were published were examined by the researcher. The results revealed that of the 78 universities that published M.S thesis, the highest number of MS theses were published by Marmara University (n=128; 13.75%), followed by Gazi University (9.45%), Selçuk University (9.13%), Middle East Technical University (METU) (4.62%), and Hacettepe University (4.30%) This distribution of PhD dissertations across universities show that most of these dissertations (n=41) were published by Gazi University (23.98%), and Marmara (21.05%), Ankara (14.62%), Middle East Technical University (METU) (9.94%), and Selçuk (8.19%) universities were the other most productive universities to publish PhD dissertations. The total number of universities that published the investigated Ph.D dissertations was 20.

Thirdly, the distribution of graduate schools regarding both MS theses and PhD dissertations was investigated by the researcher. The distribution of graduate schools of graduate theses indicated that 455 MS theses were hosted by the Graduate School of Social Sciences which comprised 48.87% of the investigated dissertations. This was followed by the Graduate School of Educational Sciences (43.61%), Graduate School of Natural and Applied Sciences (3.54%), and Graduate School of Medical Sciences (3.44%). Unexpectedly, there were also MS theses regarding early childhood education published by the Graduate School of Informatics (0.21%), Institute of Security Sciences (0.11%), Graduate School of Fine Arts (0.11%), and Institute of Atatürk's Principles and Reforms (0.11%). In terms of the PhD dissertations 90 were hosted by the Graduate School of Educational Sciences (52.36%), followed by the thesis published by the Graduate Schools of Social Sciences (32.16%), Applied and Natural Sciences (6.43%) and Informatics.

Furthermore, the results of the analysis concerning the academic title of the advisors for the MS theses and PhD dissertations showed that 484 MS theses were supervised by assistant professors (51.99%) and 115 of the PhD dissertations were supervised by professors (67.3%). As part of this study, the distribution of graduate theses across different departments showed that 383 MS theses regarding early childhood education were hosted by early childhood education departments (41.14%). Similarly, most of the PhD dissertations(n=47) were hosted by early childhood education departments (27.49%). Finally, the language of the graduate theses was analyzed. According to the data, most of the graduate theses were written in Turkish (82.05% of MS theses and 89.47% of PhD dissertations) with English being the second most preferred language in both MS theses (17.95%) and PhD dissertations (10.53%). The graduate theses written in English were published by both public (Boğaziçi University and METU) and private universities (Bilkent, Yeditepe, Koç and Bahçeşehir universities). These theses were also published from a variety of departments, such as early childhood education, psychology, and business administration.

Results Regarding the Contextual Characteristics

The research topics of the MS theses and PhD dissertations were investigated, and the results are given in Table 2.

Table 2.
Research Topics

MS Theses Research Topic	f	%	PhD Dissertations Research Topic	f	%
Education	431	29.95	Development	98	32.78
Development	399	27.73	Education	92	30.77
Teacher/ Administration	161	11.19	Teaching Methods	35	11.71
Family issues	123	8.55	Scale dev./adopt.	24	8.03
Teaching Methods	121	8.41	Family	21	7.02
Health	56	3.89	Teacher/Administrator	9	3.01
School	48	3.34	Health	7	2.34
Child Literature	38	2.64	School	6	2.01
Scale dev./Adopt.	35	2.43	Media	5	1.67
Media	23	1.60	Children's Literature	1	0.33
Children's Rights	4	0.28	Children's Rights	1	0.33
Total	1439	100	Total	299	100

The data presented in Table 2 shows that education-related issues (29.95%) were the most frequent research topics that emerged among the analyzed MS theses. In contrast, development-related issues (n=98; 32.78%) were the most common research topic in the PhD dissertations, followed by educational issues (30.77%). A detailed list of the sub-dimensions in graduate theses regarding educational issues is presented in Table 3.

Table 3.
Sub-dimensions studied in graduate theses regarding educational issues

MS Theses Research Topic	f	%	PhD Dissertations Research Topic	f	%
Special Education	41	9.51	Special Education	12	13.04
School Readiness	38	8.82	Literacy Skills	10	10.87
Curriculum	36	8.35	Curriculum	8	8.70
Science Education	29	6.73	Music Education	7	7.61
Music Education	28	6.50	School Readiness	6	6.52
Literacy Skills	26	6.03	Teacher Education	6	6.52
Concept Education	19	4.41	Education Policies	4	4.35
Art Education	19	4.41	Science Education	4	4.35
Teacher Education	18	4.18	Value Education	3	3.26
Language Education	17	3.94	Environmental Education	3	3.26
Environmental Education	16	3.71	Concept Education	3	3.26
Educational Technology	16	3.71	Montessori Approach	3	3.26
V Education	14	3.25	Vygotsky	3	3.26
Educational Materials	13	3.02	Mathematic Education	3	3.26
Montessori Approach	11	2.55	Movement Education	3	3.26
Education Policies	10	2.32	Education in EU	2	2.17
Mathematic Education	9	2.09	Turkish Education	2	2.17
Assessment And Evaluation	9	2.09	Educational Environment	2	2.17
Movement Education	9	2.09	Constructivism	1	1.09
Turkish Education	8	1.86	Effects of ECE on school success	1	1.09
Multicultural Education	7	1.62	Language Education	1	1.09
Constructivism	6	1.39	Art Education	1	1.09
Effects of ECE on School Success	6	1.39	Assessment And Evaluation	1	1.09
Other	26	6.03	Free Time Activities	1	1.09
			Gender Education	1	1.09
			Educational Technology	1	1.09
Total	431	100	Total	92	100

Table 3 shows that special education (9.51%), school readiness (8.82%), and curriculum (8.35%) are the main sub-topics commonly studied under the title of education among MS Theses. Special education (13.04%) and curriculum (8.70%) were also popular educational research topics in PhD dissertations. In addition to these sub-dimensions, literacy skills (10.84%) was among the top-three research topics selected by the PhD authors. The graduate theses also revealed a focus on developmental issues which are listed according to the sub-dimensions in Table 4.

Table 4.
Sub-dimensions studied in graduate theses regarding developmental issues

MS Theses Research Topic	f	%	PhD Dissertations Research Topic	f	%
Social-Emotional Dev.	227	56.89	Social-Emotional Dev.	45	45.92
Cognitive Development	102	25.56	Cognitive Development	35	35.71
Language Development	42	10.53	Language Development	8	8.16
Physical Development	22	5.51	Physical Development	8	8.16
Moral Development	6	1.50			
Total	399	100	Total	98	100

Table 4 shows that social-emotional development (45.92%) and cognitive development (35.71%) were the most common developmental areas selected for the PhD dissertations. This topic was also investigated in MS theses on early childhood education, almost equal to educational issues, with social emotional development (56.89%) being the most preferred research topic in these studies.

Results of Regarding the Methodological Procedures

This section gives detailed information about the sample groups, cities in which the studies were conducted, school settings, types of research, research design, instruments, statistical analysis, and sampling methods of both MS theses and PhD dissertations. First, the subject groups of both MS theses and PhD dissertations were examined to reveal the methodological procedures and the results are presented in Table 5.

Table 5.
Subject Groups

MS Theses Subject group	f	%	PhD Dissertations Subject group	f	%
Children	462	37.38	Children	126	53.39
Teacher (in-service- preservice)	425	34.39	Teachers (in-service- preservice)	54	22.88
Parent (father- mother)	216	17.48	Parent (father- mother)	41	17.37
School Management	56	4.53	School Management	8	3.39
Children's Books	29	2.35	Children's Books	1	0.42
Curricula	21	1.70	Curricula	4	1.69
School	16	1.29	School	0	0
Other	11	0.89	Other	2	0.85
Total	1236	100	Total	236	100

As indicated in Table 5, children (37.38%) were the most frequently used sample group in MS theses with a total of 462 theses using students as the subjects. Further analysis showed that three- to six-year-old children (86.36%) was the age group mostly preferred by the researchers (n=399). Teachers (34.39%) composed the second most frequently preferred sample group in MS theses, followed by parents (17.48%). According to the data presented in Table 5, similar to the MS theses, children (53.39%) were the mostly frequently used subject group in PhD dissertations. In 110 PhD theses, groups comprised of three- to six-year-old children were used as the sample group (87.30%). As in the MS theses, teachers (22.88%) and parents (17.37%) were the second and third most sample groups preferred by PhD authors, respectively.

The research areas in which the studies were conducted were analyzed. According to the findings, most MS theses were conducted in the city center and central districts (n=845; 90.76%). The results showed that only 0.64% theses were conducted in rural areas (n=6) with very few of the studies covering both rural and central districts (1.72%). Furthermore, there were cross-cultural studies among the analyzed MS theses (2.15%) which revealed that Germany was the most frequently studied country in these theses (14.71%).

Most of the PhD dissertations were also conducted in the city center and central districts (89.47%) together with cross-cultural studies (4.09%) and studies covering both rural and central districts (1.17%) with no PhD dissertations being conducted in rural areas. Germany (17.39%) and the United States of America (17.39%) were the most frequently studied countries in PhD dissertations.

In addition to the research area of the study, the Turkish cities in which the studies were conducted were determined revealing that most of the MS theses were conducted in Istanbul (23.31%), followed by Ankara (15.15%) and other cities (n<10) (11.71%). The results also indicate that some of the MS theses covered multiple cities (6.12%). Of the PhD dissertations, 57 were conducted in Ankara (33.33%). Lastly, the countries investigated in cross-cultural MS theses and PhD dissertations were Germany (14.71%), the United States of America (11.76%), and European Union countries (11.76%). The number of PhD dissertations conducted in the United States of America (n=4) and Germany (n=4) was equal. These two countries (17.39%) were the most frequently studied countries in these PhD dissertations. The settings of the graduate studies were also analyzed and are shown in Table 6.

Table 6.
Research Setting

MS Theses Research Setting	f	%	PhD Dissertations Research Setting	f	%
Preschool	633	48.62	Preschool	99	50.51
Preschool Class	322	24.73	Preschool Class	43	21.94
Crèshes/ Nursery School	83	6.37	Crèshes/ Nursery School	9	4.59
Primary School	75	5.76	Primary School	9	4.59
High School	27	2.07	High School		
College	42	3.23	College	6	3.06
Counselling Research/Rehabilitation Center	18	1.38	Counselling Research/Rehabilitation Center	7	3.57
Other	20	1.54	Other	7	3.57
Not Applicable	49	3.76	Not Applicable	9	4.59
Not Specified	33	2.53	Not Specified	7	3.57
Total	1302	100	Total	196	100

Table 6 indicates that preschools catering for three- to six-year-old children (48.62%) were the most frequently used research setting in MS theses. Preschool classes functioning independently or within a primary school (24.73%) were the second most frequently used research setting in MS theses. Thirdly, crèches and nursery schools (6.37%) were also used as research settings. As indicated in Table 6, preschools (50.51%) were the most frequently used research settings in PhD dissertations, followed by preschool classes (21.94%), primary schools (4.59%), and crèches (4.59%).

Next, the statuses of the research setting in graduate theses were investigated and the findings revealed that both MS (53.9 %) and PhD. (61.4%) authors mostly preferred public research settings. Private/foundation settings were the second choice in both MS theses (11.1%) and PhD dissertations (5.3%). The research methods of the examined graduate theses findings are presented in Table 7.

Table 7.
Research Type

MS Theses Research Type	f	%	PhD Dissertations Research Type	f	%
Quantitative	638	68.53	Quantitative	102	59.65
Qualitative	166	17.83	Qualitative	29	16.29
Mixed Method	127	13.64	Mixed Method	40	23.39
Total	931	100	Total	171	100

As can be seen in Table 7, in most of the MS theses (68.53%), a quantitative research method was employed, followed by qualitative research methods (17.83%). Mixed method (13.64%) studies were found to be the least preferred type of approach. In most of the PhD dissertations, the researchers employed quantitative (59.65%) research methods and in contrast to the MS theses for PhD researchers, the mixed method (23.39%) was the second popular research type wit qualitative research being the least preferred method of research. In addition to the type of research, research designs of the graduate studies were analyzed by the researchers and the results are provided in Table 8.

Table 8.
Research Design

MS Theses Research Design	f	%	PhD Dissertations Research Design	f	%
Survey	551	56.45	Experimental	86	43.65
Experimental	189	19.36	Survey	52	26.40
*Interview	43	4.41	Case study	12	6.09
Case study	36	3.69	Phenomenological	7	3.55
Descriptive	33	3.38	*Interview	5	2.54
Not specified	29	2.97	Single subject	5	2.54
Content Analysis	15	1.54	Literature Review	4	2.03
Phenomenological	13	1.33	Descriptive	4	2.03
Correlational	10	1.02	Other	22	11.17
Literature Review	6	0.61			
Action research	5	0.51			
Field Research	5	0.51			
Document Analysis	6	0.61			
Causal Comparative	4	0.41			
Other	31	3.18			
Total	976	100	Total	197	100

*Researchers define their research design as interview.

It is apparent from Table 8 that the survey (56.45%) was the most preferred research design MS theses. The second favorite research design was experimental and third was interviews. Research designs found less than four times in the dissertations are indicated as 'other' in the table.

The distribution of the preference for research designs in PhD dissertations are shown in Table 8 with the most favored being experimental design (43.65%). In contrast to the MS theses, survey design (26.40%) was the second preferred design and case study (6.09%) was in third place in the PhD dissertations.

In addition to research design, the data collection tools used in graduate studies were analyzed, and the results are given in Table 9.

Table 9.
Data Collection Tools

MS Theses Data collection tool	f	%	PhD Dissertations Data collection tool	f	%
Questionnaire	531	37.00	Questionnaire	78	24.84
Achievement/Apt. Test	17	15.12	Ach./Aptitude Test	68	21.66
Interview	187	13.03	Interview	43	13.69
Document Analysis	106	7.39	Performance Dev./Test	34	10.83
Performance/Dev. Test	103	7.18	Observation	33	10.51
Attitude Scale	85	5.92	Document Analysis	18	5.73
Observation Form	73	5.09	Rating Scale	17	5.41
Rating Scale	64	4.46	Attitude Scale	11	3.50
Checklist	30	2.09	Checklist	10	3.18
Personality Test	21	1.46	Socio-Metric Devices	2	0.64
Audio-Visual Materials	12	0.84			
Socio-Metric Devices	4	0.28			
Other	2	0.14			
Total	1435	100	Total	314	100

Table 9 shows that questionnaires (37.00%) were preferred mostly by the researchers as the data collection tool in MS theses, followed by achievement/aptitude tests (15.12 %) and interviews (13.03%). As can also be observed in Table 9, as in the MS theses questionnaires (24.84%) were the most frequently preferred data collection method in PhD dissertations, followed by achievement/aptitude tests (21.66%), and interviews (13.69%).

The statistical tests used in the graduate theses were also identified and the distribution of the statistical tests are presented as nonparametric, univariate, multivariate and bivariate tests in Table 10.

Table 10.
Statistical Tests

MS Theses Statistical test	f	%	PhD Dissertations Statistical test	f	%
Non-Parametric	461	23.77	Non-Parametric	116	29.86
Bivariate	161	8.30	Bivariate	28	7.19
Univariate	891	45.95	Univariate	156	40.10
Multivariate	426	21.97	Multivariate	89	22.87
Total	1939	100	Total	389	100

As indicated in Table 10, univariate tests (45.95%) were the most preferred statistical test in MS theses. with nonparametric tests (23.27%) being second and multivariate tests (21.97%) being third. In the findings regarding the distribution of data analysis methods employed in PhD dissertations are similar to those reported for the MS theses (Table 10). Univariate (40.10%) was the most frequently used test in PhD dissertations. followed by nonparametric tests (29.86%); however, the third favorite statistical test was multivariate (22.87). Another variable that was examined was the sampling method used in the graduate theses, and the results were presented in Table 11.

Table 11.
Sampling Methods

MS Theses Sampling Method	f	%	PhD Dissertations Sampling Method	f	%
Purposive	223	24	Purposive	65	38.0
Simple Random	285	30.6	Simple Random	49	28.7
Convenience	220	23.6	Convenience	32	18.7
Cluster Random	50	5.4	Cluster Random	8	4.7
Stratified Random	30	3.2	Stratified Random	6	3.5
Population	36	3.6	Population	3	1.8
Not Specified	59	6.3	Not Specified	4	2.3
Not Applicable	26	2.8	Not Applicable	4	2.3
Total	931	100	Total	171	100

From the data in Table 11, it is apparent that in most of the MS theses, the simple random sampling method (30.6%) was used to define the sample of the studies followed by purposive (24.00%) and convenience (23.6%) sampling methods. As indicated in Table 11, contrary to MS theses, purposive sampling (38.00%) was revealed to be the most preferred sampling method among the PhD dissertations, while simple random sampling (28.7%) was the second most preferred method of sampling.

Lastly, the sample sizes of the graduate theses were investigated. The findings showed that in most of the MS theses, the sample groups included more than 200 subjects (35.3%). However, in 25.6% of the MS theses, the sample groups had less than 50 subjects. In PhD dissertations, most of the studies had sample groups smaller than 50 subjects (32.7%). Secondly, PhD researchers had smaller groups – who preferred 50 – 100 subjects. Further analysis revealed that the average sample size was 192.08 for the MS theses and 184.58 for the PhD dissertations.

DISCUSSION and CONCLUSION

Descriptive Characteristics of the Graduate Theses

As can be seen from the findings of the current study, graduate studies regarding early childhood education were not only published in early childhood education departments. In Turkey, MS theses regarding early childhood education began to be published in 1989 in child health and education departments. The first PhD dissertation in this area was published in 1993 in the architecture department. The first graduate early childhood education programme was opened in 1993, with the first MS thesis produced from that education department being published in 1996. Then, the first PhD dissertation was published in 2001 by a student from the same department.

In 2016, 1,102 early childhood education graduate these were published, of which 931 (84.37%) were MS theses and 171 (15.52%) were PhD dissertations. Previous studies conducted by McLean Davies, Anderson, Deans, Dinham, Griffin, Kameniar, Page, Reid, Rickards, Taylor, and Tyler (2012) and Göktaş, Hasançebi, Varışoğlu, Akçay, Bayrak, Baran, & Sözbilir (2012) suggested that master programmes were more common and available for graduate students in comparison with doctoral programmes. These programmes also have higher student numbers and simpler requirements than the doctoral programmes. Therefore, it is an expected result that there are more MS theses on early childhood education than PhD dissertations.

When the fluctuation in the number of graduate theses was examined, there were short-term increases in the number of MS theses produced from 1998 to 2002. A further increase in the number of MS theses was determined between 2004 and 2012. In 2013, the number of available MS decreased but in 2016, it reached its highest level (n=100). Similarly, PhD dissertations gradually increased until 2012; however, since then, there has been a decrease in the number of available PhD dissertations. These findings agree

with the study of Ahi and Kıldan (2013), which showed that the number of theses steadily increased from 1998 to 2006 but with an irregular distribution. A possible reason for this result may be due to a researcher wanting to restrict the availability of their thesis until they publish the findings of their study. In another study, Altun et al. (2011) stated that this decrease might have been caused by a delay in the registration process and the uploading of new theses to the online database.

The examination of the universities that produced the graduate theses showed that some led the field, with Marmara and Gazi being the most productive universities, followed by Ankara University, METU and SelçukUniversity. Although most of the graduate theses were written by students attending these particular universities, the result of the analysis showed that 128 universities had published MS theses, and 41 universities had published PhD dissertations, regarding early childhood education under various departments. It is possible to make this interpratetion because although the number of early childhood education graduate programmes is limited, the importance of early childhood education is appreciated by other departments and is mentioned in the graduate theses written in these departments. Another possible explanation for this result is that Gazi University and Marmara University have more MS and PhD programmes than other universities and these programmes were opened earlier than in other universities (Gazi University Graduate School of Education Science, 2016).

Moreover, it has become clear that graduate theses regarding early childhood education emanated from several graduate schools. While the majority of the investigated MS theses were published in the Graduate School of Social Sciences, a considerable number of PhD dissertations were published in the Graduate School of Educational Sciences. These findings further support those determined by Durukan et al. (2015). There are several possible explanations for this result. First, until recently, early childhood education graduate programmes have offered within the purview of the Graduate School of Social Sciences, and furthermore Graduate Schools of Educational Sciences have only recently become prevalent. Another explanation for this result may be a rise in the popularity of interdisciplinary studies. The interests of different departments, which offer the opportunity to study education within different graduate schools, resulted in graduate studies regarding early childhood education being published under various graduate schools. In addition, one unexpected finding suggests that MS theses regarding early childhood education were also published in the Graduate School of Security Science and Graduate School of Ataturk's Principles and Reforms.

The results of the current study indicated that early childhood education, and child development and education departments were the most productive in terms of graduate theses regarding early childhood education. However, the majority of the graduate theses were produced within departments of early childhood education. In contrast, the findings of previous studies also showed that the number of theses concerning child development and education was higher than early childhood education graduate theses. One of the possible explanations for this result is that child development and education departments have been providing undergraduate, MS and PhD programmes since the 1970s, while the establishment of early childhood education programmes only began in 1998 (Haktanır, Dağlıoğlu, & Güler, 2010). Nevertheless, this may explain why today, early childhood education departments are the main sources of early childhood education-related graduate theses.

In contrast, in the study by Altun et al. (2011), early childhood education was also mentioned in a variety of departments. One surprising finding of the current study was that sample studies were found that were related with early childhood education, which were published under a variety of departments, including manufacturing and marketing, occupational health and safety, veterinary medicine, and finance and business administration. Based on these findings, it can be determined that early childhood education is an interdisciplinary area that draws interest from different departments. Moreover, these studies may offer the opportunity to consider studies concerning early childhood education from different perspectives.

Comparing the academic titles of the advisors of MS theses and PhD dissertations regarding early childhood education, different results were obtained. While more than half of the MS theses were

supervised by assistant professors, the majority of PhD dissertations were supervised by professors. According to Yavuz (2016), this is an expected result since there are more MS students than PhD students, and there are a greater number of academic staff holding the position of assistant professor. Conversely, Polat (2013) suggested that PhD students prefer to be supervised by professors. Another reasonable explanation for this finding might be that supervising a PhD dissertation may require more academic skills and experience. Moreover, according to the current Graduate Education Regulations in Turkey, an assistant professor should first supervise an MS thesis before supervising a student writing a PhD dissertation (The Higher Education Law, 1981).

Contextual Knowledge of Graduate Theses

The findings regarding topics in graduate theses showed that those related to education development and teacher/administrator were the most common research topics in MS theses, on early childhood education. As Ahi and Kıldan's (2013) study stated, education was the most frequent research topic in early childhood education graduate theses. Special education (9.51%), school readiness (8.82%), and curriculum (8.35%) were the subjects mostly focused upon among education-related research topics. The MS theses regarding developmental issues mostly focused on social-emotional (56.89%), cognitive (25.56%) and language (10.53%) development. Social skills, including adaptation, self-confidence, self-regulation, and self-efficacy (29.96%) were the most frequently studied research issues among social-emotional development topics.

In PhD dissertations, researchers mostly concentrated on development (32.78%), education (30.77%) and teaching methods (11.71%) issues. As in MS theses, social-emotional development, especially social skills, were the most studied areas in PhD dissertations, regarding early childhood education. This finding is in agreement with those of Taştepe et al. (2016), which showed that graduate theses frequently focused on social development. On the other hand, special education (13.04%) and literacy skills (10.87%) were the most frequently studied fields among educational research topics in PhD dissertations. Moreover, Altun and Sarı (2018) found that the number of studies which focused on literacy skills, such as the letter-sound relation, phonological awareness and spelling was increasing each year. This result may be due to the outcome of recent research which claims the critical importance of the early years in language development (Campbell et. al. 2002).

Methodological Procedures of Graduate Theses

The third research question of the current study consists of the methodological procedures (i.e. the study group, the location in which the study took place, the school hosting the study, the type of research, the instruments used, the statistical and sampling methods, etc.) of the graduate theses regarding early childhood education in Turkey. The results of the current study indicate that children/students are the most frequently studied subject group for both MS theses and PhD dissertations, which was not an unexpected finding. However, when the age groups of the samples were examined, they showed that almost all graduate theses focused on three- to six-year-old children (86.36 % of MS theses, 87.30% PhD dissertations). Zero to three-year-old children were the most under-studied age group in the graduate theses (0.87% of MS theses and 0.79 of PhD dissertations). This finding corroborates the research of Ahi and Kıldan (2013), who suggested that most of studies and theses covering early childhood education focused on children between the ages of three and six. This may be explained by the fact that contrary to international agreements, and, according to the Turkish Ministry of National Education, early childhood education covers the education of children in this age group which constitutes the highest population in a pre-school setting. For this reason, researchers tend to include three- to six-year-old children in their studies.

The second most frequently used sample group in graduate studies is that of teachers, including in-service, preservice and field teachers. Although elementary school teachers were included in sample groups of MS theses (6.59%), no PhD dissertations were found to have focused on elementary school teachers. In-service teachers were the most frequent sample group among the graduate theses that

focused on teachers (82.12% of MS theses, 88.89% of PhD dissertation). There are several possible explanations for this result. Firstly, in Turkey, most graduate students are employed as research assistants or teachers. Therefore teachers and students are the most convenient research group for these studies. Secondly, as most of the graduate theses were published in early childhood education departments, researchers were mostly interested in teachers and students as they are the principle actors in early childhood education.

In most of the graduate studies that focused on parents, only mothers or both parents were the target groups. The studies which focused only on fathers (n=7 for MS these, n=1 for PhD dissertations) were significantly lower than those covering only the mothers and/or both parents. This finding is also in accordance with earlier studies (Altun et al., 2011). However, studies also included grandparents, academicians, inspectors, visual materials, and adjunct staff as sample groups in graduate theses.

Further analysis showed that teacher and student sample groups were preferred mostly by early childhood education researchers. In other respects, parents and children sample groups were mostly chosen as the focus by child development researchers.

What is surprising is that although family-related research topics had been studied more frequently in early years, this focus lost its significance in later years. In 2016, language development was the most popular research topic among published graduate theses. A possible explanation for this may be the results of current scientific research on language development which suggests that successful early language development is a vital part of later achievements.

The current study also revealed the characteristics of research settings in which these studies were conducted indicating that nearly all graduate theses were conducted in the city center or central districts (90.76% of MS theses and 89.47% of PhD dissertations). While 22 of the MS theses (2.38%) included research settings in rural districts or rural and central districts, only two PhD dissertations (1.17%) were undertaken in rural districts. It seems possible that this result is due to the low schooling rate in rural areas. Graduate studies conducted in cities were mostly found to have been in located in metropolitan conurbations, such as Ankara, İstanbul, Konya, Eskişehir, and İzmir. There are several reasons to explain this finding. First, the universities in which most of these studies were conducted also located in these cities. Second, the density of the population in these cities provided easily available sample groups. Another important finding was that there were cross-cultural studies in both MS theses and PhD dissertations. Germany was the most frequently studied country in both M.S theses (14.71%) and PhD dissertations (17.39%). Another regularly studied country in graduate theses was the United States of America (11.76% of MS theses and 17.39% of PhD dissertations). European Union countries were also investigated in graduate theses. A possible explanation for these findings might be that international relations regarding graduate studies allow for easier access to data and analysis. The labor migration from Turkey to Germany and Turkey's ongoing application for membership of the European Union could have had an effect on the choice of countries studied in the graduate theses.

In contrast to the findings of previous studies, not surprisingly, pre-school education is again the most preferred level investigated in graduate theses. Also, since kindergartens cater to three- to six-year-old children in Turkey, they are the most frequent research setting in both MS theses and PhD dissertations and provide easy opportunities for data collection. The study also found that in both MS and PhD dissertations, researchers mostly preferred public-school settings. This result agrees with the findings of other studies, which reported that most research focused on public schools (Dungan & Pryzwansky, 1988). According to Al Kathiri (2002), private education institutions did not allow graduate students to conduct studies in their schools, as some parents would not approve of the study. Therefore, business concerns might be a possible reason for this finding.

As indicated in the current study, most of the graduate theses employed quantitative research methods. In the MS theses, qualitative studies were less frequent than quantitative, while mixed method studies were the least frequent. Moreover, mixed method studies were the second most frequent studies among

PhD dissertations. The number of qualitative studies was higher in PhD dissertations because they require more in-depth research. Contrary to this finding, according to Hännikäinen (2010), almost all PhD dissertations regarding early childhood education in Finland used qualitative methods or at least combined both qualitative and quantitative methods to collect data. Also, in his study, Rule (2011) found that most of the early childhood education graduate theses were qualitative in style. On the other hand, the conclusions from the work of Ahi and Kıldan (2013) and Durukan et al. (2015) suggest that in early childhood education theses, quantitative research methods are more frequently used than other methods. It is difficult to explain this result, but it might be related to the cultural differences of the researchers.

According to the findings of the current study, although the most frequent research design varied according to the type of theses, survey and experimental designs were the most popular research settings used in both MS theses and doctoral dissertations. In the former group, survey was dominant research design, followed by experimental design. According to Erdoğmuş (2009), in survey studies, researchers obtained the opinions and attitudes of learners, teachers, parents and administrators in regard to computer use in education and different variables. In accordance with this idea, it might be possible that the researchers of early childhood education graduate theses, who provided the surveys, intended to study and analyze the opinions, beliefs and attitudes of sample groups. On the other hand, in PhD dissertations, researchers generally employed an experimental research design. This result may be explained by the fact that in PhD dissertations, researchers aimed to reveal the effects of different variables on child development. For this reason, experimental designs, which provided the ability to check cause and relationships among variables (Frankel & Wallen, 1993), were preferred by the researchers.

Another important finding of the study is that questionnaires, achievement/aptitude tests and interviews were the most common data collection methods used in the graduate theses. Also, the study found that most of the time, researchers combined more than one data collection method. This result may be explained by survey research design, in which researchers use questionnaires to collect data. As Fowler stated in 2002, administering questionnaires is one of the most common data collection methods used in survey design studies. Another explanation for this finding can be that the results of the questionnaires are easily analyzed by the researchers. Aptitude and achievement tests were used to measure the sample group's intelligence and skills or to test knowledge of an individual in a particular area (Frankel & Wallen, 1993). Researchers, especially in experimental design studies, may have used this data collection method to measure the effect of treatment on the intended variable.

The third most common data collection method in graduate theses utilized interview protocols, which aim to reveal what was on the subject's mind, what the subject thought or how the subject felt about a particular issue (Frankel & Wallen, 1993). Considering the purpose of the interview method, it may be claimed that researchers preferred this data collection method in order to discover the thoughts and feelings of the subjects. Also, as the most common sample group in the graduate theses was three- to six-year-old children, questionnaires are sometimes unable to ascertain the ideas of young children due to their possible, limited understanding of the questions.

In contrast to the findings of the current study, Rule (2011) found that observation, rather than interviewing, was the most common method in the studies conducted in day care centers in Finland. Both participant and non-participant observation procedures were used as data collection methods. However, researchers combined observation methods with other data collection approaches; thus, this finding confirms the association between graduate theses conducted in Turkey and Finland. A possible explanation for the underuse of observation techniques in Turkey might be time limitations. As the observation method is a time-consuming technique, researchers use more practicable techniques like questionnaires. Also, in Turkey, it is very difficult to receive permission from the school administration to be able to observe sample subjects.

When the statistical test used in the data analysis process of MS theses was analyzed, it was found that researchers mostly used univariate statistical tests, especially the t-test and ANOVA, which are generally

used for comparing group means. Multivariate statistical tests which are used to investigate the degree of relations among variables were the third most employed method among the MS theses. According to these results, researchers should increase the variety of statistical tests used in their studies to develop clearer interpretations among variables.

In addition, SPSS, which allows easy application of the t-test and ANOVA analyses, was the most common package used in graduate theses. A possible explanation for the researchers using this programme is that it is easy to use and free of charge.

Moreover, the study revealed that sampling methods used in the graduate theses vary in accordance with the research designs. Simple random sampling was the most common method used in MS theses. Al Kathiri (2002) found that using a population was the most common sampling method in curriculum and instruction MS theses. It is difficult to explain this result but perhaps due to their findings, which mostly used survey studies, researchers engaged in MS studies preferred to apply a simple random method to define sample groups. Also, as most common sample groups were children, teachers and parents in MS theses, simple random sampling can be considered as the appropriate method to define a sample group in such large populations. Not surprisingly, the sample group of the MS theses was generally larger than 200 members, which indicates that the generalizability of the results was higher.

In most of the PhD dissertations, the researcher used purposive sampling, which is the most common sampling method implemented in experimental research studies. Erdoğmuş (2009) also defended this finding in her study by suggesting that purposive sampling was one of the most common sampling methods used in instruction technology PhD dissertations. There are several explanations for this result. Firstly, researchers do not consider the representativeness of the sample group in purposive sampling. Secondly, experimental design research was the most common research design in PhD dissertations; therefore, the result might be related with the research designs. Also, purposive sampling may have reduced time and financial expenditure. It seems that researchers preferred purposive sampling, in particular when faced with a limited time to complete their studies. In accordance with sampling method, the sample groups of PhD dissertations consisted of less than 50 members.

Suggestions

The main finding of the current study is that early childhood education has been the topic of graduate theses since 1989 prepared by students in several departments. Some specific universities, located in metropolitan areas, having qualified and experienced academic staff, led the field by producing the majority of graduate theses; thus, there was an uneven distribution of graduate theses across the universities in Turkey. To prevent this inequality, the quality and quantity of academic staff in other universities should be improved.

The sample groups that were selected in both MS theses and PhD dissertations had similar characteristics. Children were at the heart of the early childhood education field, and they were the most popular subject to be observed in graduate theses. However, some age groups, including zero- to three-year-old children and six+ ages were undervalued in graduate studies. To increase the studies to cover zero- to eight-year old children, both MS and PhD students should be encouraged to expand their sample pools. On the other hand, teachers were the second most popular group in graduate theses, but most focused on in-service teachers. The training of pre-service teachers has as much value as in-service training and the number of studies regarding prospective teachers should be increased. Also, fathers, academicians, ancillary professionals, and educational materials should be considered as sample groups in graduate theses.

In Turkey, the government aims to increase the attendance rate within preschool level education across the country. However, the results showed that apart from Istanbul, there is a big gap in the preschool enrolment rates in the western and eastern parts of the country (Ministry of National Education, 2014). According to Ağırdağ, Yazıcı and Sierens (2015), one promising strategy to improve schooling rates at

preschool level is to increase quality of preschool education in less developed provinces and improve the accessibility of preschool education for children from low socio-economic status families. Therefore, to increase the quality and accessibility of preschool education, less developed provinces should be considered. In the examination of the research settings of the graduate theses, most of the studies were conducted in city centers; thus, rural areas and less developed provinces were ignored within graduate studies. Increasing the number of graduate studies conducted in rural districts would offer opportunities to cultivate the quality of and access to early childhood education in these areas.

While educational and developmental issues have been frequently studied in graduate theses, some educational and developmental topics are mostly overlooked; for example, peace education, democracy education and gender education. On the other hand, physical development and moral development are understudied topics among developmental studies. Furthermore, some topics regarding interdisciplinary studies, such as children's rights, child abuse and media should also be considered in graduate theses.

According to the findings, the number of quantitative studies was significantly higher than qualitative studies. Research employing qualitative research methods can provide in-depth information about the nature of the studied materials. For this reason, the number of qualitative studies should be increased in order to attain more in-depth information. Furthermore, using different types of research designs and data collection methods can promote the development different perspectives in regard to the field.

This study examined graduate studies regarding early childhood education in Turkey and all online, open access graduate theses written up to 2017 were included in the study. In later studies, journal articles regarding early childhood education in Turkey can be identified according to descriptive characteristics, contextual knowledge, and methodological procedures.

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TÜRKÇE GENİŞLETİLMİŞ ÖZET

Mevcut çalışma, erken çocukluk eğitimi alanında çalışan bilim insanlarının oluşturduğu lisansüstü çalışmaların kapsamlı bir alan yazın taramasını içerir. Sonuçlar, erken çocukluk eğitiminde yapılmış lisansüstü çalışmalarda hangi konuların iyi sunulduğunu, hangilerinin ise hak ettiği kadar çalışılmadığını ortaya koyacaktır. Ayrıca, bu çalışmanın bulguları mevcut metodolojik ve istatistiksel eğilimlerle ilgili bilgi sağlayacaktır. Sonuçlar seçili zaman aralığındaki erken çocukluk eğitimi üzerine yapılan çalışmalardaki eğilim değişimini gözlemleme şansı sunacaktır.

Çalışmada, erken çocukluk eğitimi üzerine yazılmış lisansüstü çalışmaların betimleyici ve içerik özelliklerinin, Türkiye'de alanın durumuna ilişkin kapsamlı bir resim çizebilmek adına incelenmesi amaçlanmaktadır. Ayrıca, bu çalışma tezlerin metodolojilerini de, kullanılan araştırma yöntemleri ve istatistiksel tekniklere bağlı olarak tercih edilen araştırma eğilimlerini ortaya koymak amacıyla incelemektedir. Çalışmanın araştırma soruları şu şekildedir;

1. Türkiye'de erken çocukluk eğitimi üzerine yazılmış yüksek lisans ve doktora tezlerinin betimleyici özellikleri (üniversite, enstitü, bölüm, yayımlanma tarihi, tezin dili ve danışmanın akademik unvanı) nelerdir?

2. Türkiye'de erken çocukluk eğitimi üzerine yazılmış yüksek lisans ve doktora tezlerinin içerik özellikleri (araştırma konusu) nelerdir?

3. Türkiye'de erken çocukluk eğitimi üzerine yazılmış yüksek lisans ve doktora tezlerinin metodolojik özellikleri (çalışma grubu, çalışmanın gerçekleştirildiği alan, araştırma yöntemi, araştırma deseni, veri toplama araçları, istatistiksel analiz ve örneklem yöntemleri) nelerdir?

Çalışmada nitel araştırma desenlerinden içerik analizi kullanılmıştır. Doküman analizinin veri toplama yöntemi olarak kullanıldığı çalışmada, yüksek lisans ve doktora tezleri, doküman analizi sürecinde bilgi kaynağı olarak kullanılmıştır. Veri analizi süreci için, içerik analizi metodu tercih edilmiştir. Veri toplama sürecinde toplam 1494 lisansüstü tez incelenmiş ve erişime açık 1986-2016 yılları arasında erken çocukluk eğitimi üzerine yazılmış 1102 tez, çalışmanın örneklemi olarak belirlenmiştir. Araştırmacılar, ilgili alan yazın ve benzer lisansüstü tezlere dayalı olarak oluşturulmuş bir sınıflandırma geliştirmiştir. Çalışmanın geçerliği; görünüş geçerlik, dış geçerlik ve kapsam geçerliği açısından incelenmiştir. İlk olarak, görünüş geçerliği ele alınmıştır. Mevcut çalışmada; araç, araştırmacılar tarafından geliştirilmiştir ve ilgili alan yazın ile benzer çalışmalar bu aracın inşa sürecinde değerlendirilmiştir. Araştırmacılar, ayrıca ilk taslaktan sonra erken çocukluk eğitimi alanında çalışan bir öğretim üyesinden uzman tavsiyesi almıştır. Uzman görüşü üzerinden, araç revize edilmiş, aracın son hali bir pilot çalışma ile oluşturulmuştur. Pilot çalışmanın sonunda, araç amaçlanan ölçümü yapabilmesi nedeniyle geçerli kabul edilmiştir. Ardından, aracın dış geçerliği kontrol edilmiştir. Bu çalışmanın popülasyonu Türkiye'de erken çocukluk eğitimi üzerine yazılmış tüm lisansüstü tezleri içermektedir ve haliyle tüm tezlere erişmek neredeyse imkânsızdır. Bu nedenle, yalnızca çevrimiçi tam erişime açık olan tezler çalışmaya dâhil edilmiştir. Sonrasında, içerik geçerliğinden emin olmak adına içerik analizi çalışmaları yürüten iki farklı araştırma görevlisi Tez İnceleme Formunu gözden geçirmiştir. Son olarak, çalışmanın güvenirliğinden de emin olunmuştur. Mevcut çalışmada, güvenilir sonuçlar elde edebilmek için hem kodlayıcılar arası tutarlılık hem de test-yeniden test teknikleri uygulanmıştır. Kodlayıcılar arası tutarlılık Cohen's Kappa yöntemi ile ölçülmüştür. Mevcut çalışmanın Kappa değeri 0,86 olarak hesaplanmıştır ki, bu kodlayıcılar arasında yeterli bir tutarlılık oranına işaret eder. Test-yeniden test güvenirliği için, birinci kodlamayı takip eden sekizinci haftada, başka bir kodlayıcı kodlama sürecini yeniden uygulamıştır.

Elde edilen bulgulara göre, erken çocukluk eğitimine ilişkin lisansüstü çalışmalar yalnızca erken çocukluk eğitimi bölümlerinde yayınlanmamıştır. Türkiye'de erken çocukluk eğitimine ilişkin yüksek lisans tezleri, çocuk sağlığı ve eğitimi bölümlerinde 1989 yılında yayımlanmaya başlamıştır. Bu alandaki ilk doktora tezi ise 1993 yılında mimarlık bölümünde yazılmıştır. İlk erken çocukluk eğitimi lisansüstü programmeı 1993 yılında açılmış, erken çocukluk eğitimi bölümünün ilk tezi ise 1996 yılında yayımlanmıştır. Lisansüstü tez üreten üniversiteler incelendiğinde bazı üniversitelerin başı çektiği görülecektir. Marmara ve Gazi Üniversiteleri en üretken üniversiteler olup, ardından Ankara Üniversitesi, Orta Doğu Teknik Üniversitesi ve Selçuk Üniversitesi gelmektedir. Mevcut çalışmanın sonuçları; erken çocukluk eğitimi, çocuk gelişimi ve eğitimi bölümlerinin erken çocukluk eğitimi üzerine lisansüstü tez üretmek konusunda en üretken bölümler olduğunu göstermiştir. Ancak, lisansüstü tezlerin çoğunluğu erken çocukluk eğitimi programmelarında yazılmıştır. Oysa ki, geçmiş çalışmaların bulguları, çocuk gelişimi ve eğitimine ilişkin tezlerin sayısının erken çocukluk eğitimi üzerine yazılmış lisansüstü tezlerden daha fazla olduğunu göstermiştir.

Lisansüstü tezlerin konularına ilişkin bulgular göstermiştir ki; eğitim, gelişme ve öğretmen/yönetici konularını işleyen tezler, erken çocukluk eğitimi yüksek lisans seviyesinde en yaygın araştırma konuları olmuştur. Doktora tezlerinde ise araştırmacılar çoğunlukla gelişim (%32,78), eğitim (%30,77) ve öğretim yöntemleri (%11,71) üzerine çalışmıştır. Yüksek lisans tezlerinde olduğu gibi, sosyal-duygusal gelişim, özellikle sosyal beceriler, erken çocukluk eğitimi alanında en çok çalışılan konular olmuştur.

Mevcut çalışmanın sonuçları, çocukların/öğrencilerin hem yüksek lisans hem de doktora tezlerinde en sık çalışılan örneklem grubu olduğunu göstermiştir ki bu beklenen bir bulgudur. Ancak, örneklemlerin yaş grupları incelendiğinde neredeyse tüm lisansüstü tezlerin üç-altı yaş arasındaki çocuklara odaklandığı görülmüştür. Sıfır-üç yaş arasındaki çocuklar ise lisansüstü tezlerde en az çalışılan yaş grubu olmuştur.

Bu çalışmada, Türkiye'de erken çocukluk eğitimi üzerine yazılmış, çevrimiçi ve erişime açık tüm lisansüstü tezleri incelemiştir. İleriki çalışmalarda, Türkiye'de erken çocukluk eğitimi üzerine yazılmış dergi makaleleri, betimsel özellikleri, kavramsal bilgileri ve metodolojik özellikleri açısından incelenebilir.

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Exploring major roadblocks on inclusive education of Syrian refugees in school settings

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ABSTRACT There have been thousands of Syrian kids studying at Turkish public schools since the beginning of Syrian migration. This study aims to reveal the social and cultural motivations causing the barriers in front of inclusive education of Syrian refugees within school environments. This qualitative research was designed as a case study. Accordingly, the study group of the research is composed of 12 teachers and 5 administrators from five schools having Syrian refugee students and 10 parents consisting of both Syrian and Turkish kids. The data was gathered through semi-structured interviews. At the end of the data analysis, four main themes were found as: "Language Diversity", "Reflections of Major Social Problems in Schools", "The Dilemmas Based upon Integration Policies" and "Mutual Roots as an Inclusion Area". Results of this study show that a collective and holistic approach is necessary to overcome the barriers in front of inclusive education of Syrian refugees.

Keywords: *Inclusive education, Syrian refugees, Migration, Education*

Okul ortamlarında Suriyeli mültecilerin kapsayıcı eğitimleri önündeki başlıca engellerin araştırılması

ÖZ Suriye'de başlayan iç savaş boyunca birçok Suriye vatandaşı başka ülkelere göç etmek zorunda kalmıştır. Bu ülkelerin başında, Suriye'nin en uzun sınıra sahip komşusu Türkiye gelmektedir. Suriye'den Türkiye'ye göç başladığından bu yana, Türkiye'deki devlet okullarında binlerce Suriyeli çocuk öğrenim görmektedir. Bu araştırma okul ve okul çevresinde Suriyeli mültecilerin kapsayıcı eğitimlerinin önündeki engellere kaynaklık eden motivasyonları ortaya çıkarmayı amaçlamaktadır. Bu nitel araştırma bir durum çalışması olarak desenlenmiştir. Bu doğrultuda, Suriyeli mülteci öğrencilerin öğrenim gördüğü okullarda görev yapan 12 öğretmen ve 5 okul yöneticisi ile, Suriyeli ve Türk öğrencilerin velilerinden meydana gelen 10 öğrenci velisi araştırmanın çalışma grubunu oluşturmaktadır. Araştırmanın verileri, araştırma kapsamında uygulanan yarı yapılandırılmış görüşmeler ve sahada edinilen gözlemlerden yoluyla elde edilmiştir. Verilerin analizi sonucunda dört ana temaya ulaşılmıştır: "Dil Farklılığı", "Temel Sosyal Problemlerin Okuldaki Yansımaları", "Entegrasyon Politikaları Temelli İkilemler" ve "Bir Dahil Olma Alanı Olarak Ortak Kökler". Araştırma sonuçları, Suriyeli mültecilere kapsayıcı eğitimlerin önündeki engelleri kaldırmada kolektif ve bütüncül bir yaklaşımın gerekli olduğunu ortaya koymaktadır.

Anahtar Kelimeler: *Kapsayıcı eğitim, Suriyeli mülteciler, Göç, Eğitim*

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INTRODUCTION

Migration, in the widest sense, is a social and cultural relocation movement that people act individually or in mass because of political, geographic, economic or familial reasons, and that can transform not only the migrating people but also the societies these people are included (Kaysılı, 2014). Besides, migration can be defined more specifically in the context of its causes and the voluntariness of migrating people. Thus, there can be seen five broad classes of migration, designated as primitive, forced, impelled, free and mass (Petersen, 1958). Among these, forced migration has become prominent in recent years with its increasing importance in social, cultural and political debates. According to Hazan (2012; cited in Akşit, Bozok, & Bozok, 2015), the forced migration means that people have to leave their homes and go to safer areas for many reasons such as natural or man-made disasters and wars. Forced migration, in fact, has increased considerably in volume and political significance since the end of the Cold War (Castles, 2003) and with the rising proxy wars related to identity conflicts and ethnic problems of state formations, especially in the Middle East, wars have become the dominant factor of forced migration. The activating agent in forced migration is the state or some functionally equivalent social institution and people do not have the power to decide whether or not to leave (Petersen, 1958). Obligation, instead of willingness, is the keyword in forced migration.

Syria, as a country facing many dimensions of civil war, is the latest field that forced migration movements can be seen. The Syrian conflict and war have contributed such a large refugee crisis in recent history that millions of people have been trying to get protection and safe places (Drolet, Enns, Kreitzer, Shankar, & McLaughlin, 2018). Turkey, as a neighbor country of Syria, couldn't be unconcerned with this situation and took over the responsibility by implementing an 'open gate policy'. So, Turkey became the country receiving the most intensive migration with this policy after the civil war in Syria (Bakbak, 2018). Within open gate policy, Syrian refugees were given temporary protection status and it was set out in an unpublished Ministry of the Interior circular issued in March 2012 (Amnesty International, 2014). The regulation provides a legal status giving some social rights such as identity cards and social support (Saleh, Aydın, & Koçak, 2018). As of March 2019, 3,651,635 Syrian refugees have been living in Turkey and only 140.704 of them are living in temporary accommodation centers (Directorate General of Migration Management, 2019). It means that 3,5 million Syrian refugees, approximately, are living in various cities of Turkey. According to the statistical data of UNICEF (2018), 1,6 million of Syrian refugees living in Turkey are children; and more than 430.000 of them are out of school, while 565,907 Syrian children are enrolled in formal education. It is obvious that such a huge number of refugees may have some effects on the social life of the receiving country. So, education, as one of the most important social institutions of society, gets its share from these effects.

Without mechanisms in place to ensure that newcomers are adequately integrated into their newly adopted society, these people can face the risk of being far from social life or opportunities (Caidi & Allard, 2005). Therefore, joining of millions of refugees into a society makes it unavoidable for a country to think about the integration processes of these people. Integration includes financial, cultural and educational aspects. Turkey, at this point, maintained the same hospitable attitude in the educational field and put an inclusive education model into practice for Syrian refugee kids in schools. Inclusion is considered as a form of integration in which individuals express an interest in maintaining strong connections both with their ethnic group and host culture (Berry, 2006; cited in Passiatore et al., 2017). Inclusive education is a term that was essentially used in integration ways of disabled students within school environments. But it has recently had a larger usage along with increasing cultural diversity debates in the educational field (Taylor & Sidhu, 2012). According to this model, both Turkish and Syrian kids study in the same classes and instruction is conducted within the Turkish language. But the demands of Syrian kids are fulfilled as well. The aim here is to minimize the discrimination (Özcan, 2018). Because, according to inclusive education, all students in schools, regardless of their differences, are part of the school community and can feel that they belong (Taylor & Sidhu, 2012). So, schools can

discharge neutralizing the differences having potential to cause conflicts between Turkish and Syrian kids, and between the society and the refugees accordingly, through an inclusive school culture of warmth and welcome. But there are some sociocultural roadblocks for schools to carry out such an inclusive school culture.

Migration, for a refugee, means facing different social and cultural patterns and experiencing the challenges of being a stranger in a new society. Language is an important cultural component and it becomes a crucial cultural capital for refugees in order to survive in this new society. Because language is the basic means for people, especially in a new society, to express themselves and to interact with others (Biçer, 2017), it inevitably becomes the dominant difficulty that the refugees face in the destination country. The challenges based on language diversity can be seen not only in social life but also in educational processes. Being unfamiliar with the native language of the host country can pose an obstacle in the instructional processes of the refugee kids having education in Turkish public schools. Correspondingly, this can be another barrier in the social inclusion of the refugees; because education is also responsible for contributing the social inclusion efforts in school settings.

Poverty is the other important source of roadblocks for social inclusion in educational processes. Most of the Syrian refugees arrived in Turkey with almost no financially valuable things or money with them, no means to meet their basic needs (Amnesty International, 2014) and they were entirely dependent on government aids. Due to their high conditions of poverty, settlement types of the refugees are formed correspondingly. It means that Syrian refugees settled the suburbs of cities where many social, economic, and political problems are already major social facts. Besides, the regions where Syrians settled are the places where many Turkish unemployed people were living as well. So, when the Syrian refugees tried to find jobs, it became the first clash between local people and Syrian refugees. Because Syrian refugees could work for very low costs, the employer began to prefer hiring them instead of local people. So, local people faced with losing their current jobs. When Syrian kids were sent to schools, they were together with the kids whose parents are already in aggressive competition to get a job. Soon after, Turkish families did not want Syrian kids to attend the same school with their kids, and what is worse, some school administrators and some teachers have similar negative attitudes towards Syrian kids in school settings. This study tries to answer how sociocultural clashes between Turkish kids and Syrians interrupt inclusive education of Syrian refugees. Within this context, schools were considered as the fields for social conflicts, while trying to comprehend how these conflicts were moved into the school.

METHODOLOGY

Research Design

This study is a qualitative research and designed as a case study research. The case study is conducted in order to develop a holistic and in-depth understanding of the certain phenomenon and where the boundaries of the case and the context cannot be easily distinguished (Creswell, 2015; Yin, 2009). According to Patton (2014), the cases to be investigated can be individuals, groups, programs, institutions, cultures, regions or nation-states. The case discussed within this study is the roadblocks for the social inclusion of Syrian students within the school settings.

Sampling and Research Group

In this study, a convenient sampling strategy (Frankel & Wallen, 2006) was adopted. Therefore, this research has been conducted in schools where Syrian refugees attend at higher rates. Five middle schools located in Ankara were determined to conduct the study. In order to be able to present a profound

conception of the target case, data source triangulation was employed and volunteer teachers, school administrators, and parents were included in the study. A total of 12 teachers, five school administrators, and 10 parents participated in the study. Pseudonyms were used instead of the real names of participants and we stated if anyone is a teacher as *(t)*, a refugee parent as *(rp)*, a native parent as *(np)* and a school administrator as *(a)*. The data about the participants are given in Table 1, 2, and 3.

Table 1
Teacher Participants

	Name	Field of Study	Gender	Seniority
1	İlayda	English Language Teacher	Female	11 years
2	Mina	Social Studies Teacher	Female	16 years
3	Nihal	Primary School Teacher	Female	23 years
4	Ela	Primary School Teacher	Female	30 years
5	Asya	Primary School Teacher	Female	18 years
6	Liya	Primary School Teacher	Female	28 years
7	Pelin	Primary School Teacher	Female	11 years
8	Sinem	Primary School Teacher	Female	15 years
9	Kübra	Primary School Teacher	Female	11 years
10	Ali	Primary School Teacher	Male	24 years
11	Arda	Primary School Teacher	Male	23 years
12	Ece	Primary School Teacher	Female	24 years

Table 2
School Administrator Participants

	Name	School	Gender	Field of Study	Seniority
1	Yusuf	School A	Male	Primary School Teacher	16 years
2	Murat	School A	Male	Primary School Teacher	27 years
3	Mehmet	School B	Male	Primary School Teacher	32 years
4	Kerem	School C	Male	Primary School Teacher	18 years
5	Erdem	School D	Male	Primary School Teacher	21 years

Table 3
Parent Participants

	Name	Age	Children	Education	Status
1	Rana	32	4	Primary School	Syrian Refugee
2	Vale	31	3	Primary School	Syrian Refugee
3	Raja	29	4	Primary School	Syrian Refugee
4	Lil	35	5	Primary School	Syrian Refugee
5	Wehibe	33	6	Primary School	Syrian Refugee
6	Jasmin	35	4	Undergraduate	Syrian Refugee
7	Nez	37	2	Undergraduate	Syrian Refugee
8	Rabia	35	3	Undergraduate	Syrian Refugee
9	Fatma	-	3	Secondary School	Native
10	Zeynep	30	3	Secondary School	Native

Procedures

The most common and most useful interview technique used in qualitative research is semi-structured interviews (Packer, 2011). Pilot interviews were done with teachers, administrators, and parents, and later on, semi structured interviews were conducted with each group. For the interviews, interview forms have been prepared for each group, separately. The interview form for teachers composed of 13

questions and focused on the clashes emerge in the classroom and in school and the approaches of the teachers to the presence of refugee students and their educational attainment. And the form for school administrators composed of 8 questions and focused on the students and family profiles of schools, educational attainment of refugee students and the problems about the education of refugees. We have focused through the interviews with refugee problems on the problems that they experienced in social life and in the schooling practices of their children and this form for refugee parents composed of 23 questions fewer than seven themes. The form for native parents composed of 7 questions and focused on the problems what they or their children experienced with refugee students or about the presence of refugees. All the forms have been reviewed by three field experts and edited through their views before the pilot interviews. And researches reviewed the questions after the pilot interviews. When the participant did not know to speak in Turkish, interviews were done with the help of a translator. Each of the interviews with school administrators and teachers lasted for 30-40 minutes. On the other hand, the interviews with refugee parents lasted for 15-20 minutes. The interviews were recorded by a tape recorder and the necessary permissions were taken from the participants for that. After all the interviews finished, the records were transcribed verbatim. Though observations were carried out within an unstructured way, there were some descriptive themes with the researchers before going to the research site.

Data Analysis

Data gathered was analyzed through two coding cycles with an inductive way of coding. In the first cycle; a thematic coding strategy was conducted in the first cycle. In the second cycle, Pattern coding was used in the second cycle so as to create themes for the research report. The codes thought to be related to each other were gathered under categories. Then, the themes under which categories were subsumed were reached. Details of Themes have been tabled in Figure 1. Four main themes were formed which are "Language Diversity", "Reflections of Major Social Problems in Schools", "The Dilemmas Based upon Integration Policies" and "Mutual Roots as an Inclusion Area". The categories collected under the themes were interpreted and supported with direct quotations.

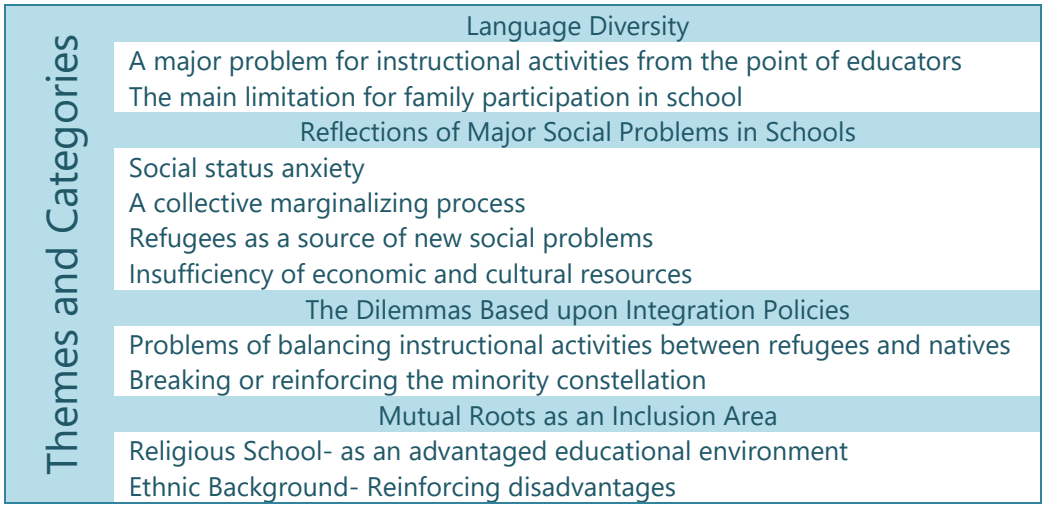

Figure 1. Themes and Categories

Validity and Reliability

The basic strategy for validity and reliability employed in this study is consistency. For consistency related to the question "whether the proposed results can be obtained from the data at hand" (Akar, 2016), the collected data was analyzed and then they were descriptively presented and enhanced with direct quotations. Direct quotations formed the basis for the researcher's comments and explanations on the subject. Interpretations of the research findings were supported by discussions from the literature and both internal comment and external comment criteria were met.

The Role of the Researcher

Since the qualifications and standpoint of a researcher are important elements of a qualitative study, the experiences and approaches of the researcher may cause presuppositions about the research. However, a researcher should be aware of his/her approaches and thoughts and should suppress them (Creswell, 2005). For suppression, theoretical base about the study field gains importance. This research has been conducted by an associate professor and two research assistants studying on the sociology of education. In addition, cultural studies are among their research interests and one of the researchers studies on migration and education, also. During the field study, as researchers we based on the theoretical knowledge and self-awareness have been regarded. However, we have come up with some problems especially during the interviews with the refugee parents apart from language diversity. They were all women and because of the cultural assumptions, it was a hard job to persuade them for an interview. The female researcher has visited them at their house or the associations that they attended and interviewed with the women accepted to interview.

FINDINGS

Language Diversity: The Common Problem

Because of the migrations from other countries, problems based on multilingualism and multiculturalism have emerged in Turkey. Accordingly, these problems reflect to school settings in various ways. Schools, especially in disadvantaged regions, faced with problems about the education of refugees. Namely, new problems related with social and cultural conflicts have been added. The results of diversity arose in educational fields, especially as language problems. Language is the main tool for communication and it is a fact that adaptation to a new social order is possible with familiarizing and interacting with the society. Since interaction is possible with communication, using the same language becomes more important within a social structure. Thus language diversity is seen as a roadblock on the inclusion of refugees. When the social components of the school (students, teachers, parents, and school administrators) cannot communicate with each other effectively, inclusion is blocked. Language diversity is a common problem for all subjects within the problematic of refugee education. In terms of this study, the views of both teachers and school administrators and refugee parents have shown that language diversity is the initial step that should be negotiated.

A major problem for instructional activities from the point of educators

Language diversity becomes a problem for instructional activities in terms of two implications. The former one is that since students do not use the target language, they cannot lead in the classroom process and the later one is that teachers cannot arrange his/her instructional activities for the interest of refugee students. Language is a tool for communication and can function as the information source about the newly arrived students. Being unfamiliar with Turkish also prohibits refugee students from communicating with their teachers and peers and thus they cannot become socialized and can be excluded. Thus it seems compulsory to design policies in order to close the gaps. Knowing about students' educational backgrounds gains importance here for teachers in terms of arranging classroom activities and they can only do that through a suitable communication. Educators regard language diversity as an integration problem, and instructional problem accordingly, and the unknowing language of refugees is regarded as a roadblock. Language diversity is a problem for teachers in terms of instructional activities since they could not teach to children with whom they do not use the same language. Educators declared that the reason for being unsuccessful of refugee students is that they cannot speak in Turkish and if the language problem is overcome, the instruction and inclusion problems can be solved.

Mina (t): They don't understand the lessons because they don't know Turkish adequately and so they cannot succeed in lessons. The definitely need to learn Turkish. If not, I think, these kids are going to schools in vain.

Kerem (a): Our biggest problem is language. They cannot communicate without knowing language. When we solve this problem, the other problems are already solved as such.

Erdem (a): The only problem is language. When it is solved they seethe with our kids. If Syrian students are in minority in the school, they learn language easier and they socialize earlier.

The main limitations for family participation in school

The family patterns of refugee students can be defined with deficiency. Most of the refugees live in poverty and generally are lack of cultural sources. Families of refugee students studying at Turkish schools have low literacy levels and educational attainments. So, when the problem of language diversity emerges, it can be said that the disadvantaged position is doubled. This is because parents who do not know Turkish cannot communicate with the new society and cannot attend school effectively. Refugee parents stated that language diversity is an important problem for them and their children. Language diversity is a main problem also for families because they witnessed the roadblocks arising from language diversity that their children experienced. The parents reported that their children face problems because Turkish is not their first language and their children are not efficient in Turkish. Being not efficient in Turkish is a problem for refugee children because they could not attend to school effectively and early enough, and it is a problem for parents that they could not monitor their pupils' educational processes and could not support their school lives in terms of academic achievement. For refugees, language diversity can cause withdrawing from communicating with natives and sometimes from schooling as well.

Vale (rp): Due to the language problem my daughter is not at a grade level, which should really be. Because of the age gap, her communication with her classmates is broken.

Wehibe (rp): My children are not at their required grades. They lost one year due to the language problem.

Reflections of Major Social Problems in Schools

Schools are small samples of the society. Every school has social dynamics as the bigger society has, and accordingly, schools reflect similar problems as the bigger society has. So, it is necessary to look at the dynamics rooted in outside the schools to understand the clashes or conflicts within schools' social settings. Namely, in order to understand the conflicts between Syrian and native students, the environmental patterns of the school should be regarded. In this regard, the relations between the refugees and the natives gain importance. However, findings refer to conflicts between natives and refugees through social life.

The reflections of major social problems in school settings can be observed in two forms: social status anxiety and blaming the other one. Social status anxiety emerges from the social and economic problems of both Turkish and Syrian parents, and both sides blame the other one. The Syrians stated that they are excluded from the social structure mercilessly, and Turkish parents and educators stated that Syrians disturb the social order.

Social status anxiety

The social status anxiety emerges especially among Turkish parents and it reflects to school. The main reason for this anxiety is economic problems. People living in disadvantaged regions have already

economic problems, and when the population increases by the migration of Syrian refugees, the chance of getting a job decreases for natives. Since Syrians settled down these regions, they might become a threat for natives in terms of losing their jobs.

Kübra (t): The parents living in this area collected signatures against Syrian refugees; they don't accept them. They are so reactive about this situation because most of the parents living in this area lost their jobs. They were working as furniture workers. But the bosses began to employ 5 Syrian refugees instead of 1 Turkish worker. Syrian refugees work for one-fifth of a Turkish worker. So, most of the Turkish parents became unemployed.

Zeynep (np): Nobody can tell me that the Syrians are in such a difficult situation. They get a lot of help from the government. Our children don't get any help as the Syrians take. The best teachers are given to them. Then they beat our kids at school!

The refugees cause a social status anxiety among natives in terms of social relations. Teachers reported that Syrian students use irritating expressions about native students and they should have learned to speak in this way from their families.

Ela (t): A Syrian kid entered the director's room and said 'the Turks are beating me'. Their families are talking like this at home. If not, how could those kids know or learn this jargon?

Kübra (t): Turkish parents claim that Syrian kids beat their children and say bad words to them. They say, for example, 'filthy Turks!' to their children. I think the conflicts between children result from conflicts between parents. A kid cannot say 'filthy Turks'. He doesn't know such a style of speaking. It is apparent that these words are spoken by their families at their homes.

A collective marginalizing process: Blaming the other one

Every one of the social components of school (students, teachers, parents, and school administrators) has important roles in inclusive school culture. So it can be implicated that social inclusion is possible with the integration of both sides. However, during our research, we have come up with resistance among the components of integration. We stated this marginalizing process is collective since exclusion and inclusion is a two-sided phenomenon and all sides blame the other. So, it means resistance. All groups participated in the research stated their reasonable ground for exclusion. Refugee parents defined their positions through discriminations and marginalization within the society that they witnessed and the blaming and exclusion that their children were exposed to. Native parents stated that refugee students are threatening and dangerous for their children. School directors claimed that the refugees do not care about their children and education. Thus, it can be said that the exclusion process is maintained collaboratively.

Refugee parents declared that they are marginalized by natives both in schools and outside of school, excluded from the society in various ways and regarded as a threat.

Wehibe (rp): I learned marginalization after coming to Turkey. When I go to the hospital, people say 'If you are Syrian, get the hell out! You're a charge on us!'. I face the same behavior with my neighbors. My kids are marginalized at school as well.

Rabia (rp): I went to the school in our district to register my children for school. The director said, 'Enough is enough! I don't want any Syrian in my school, go away!'.

Raja (rp): When my children tell me that they are marginalized, or mocked by their friends, I feel deep despair. Imputation of being a terrorist or a bomber is too heavy for Syrian people. Even in a little theft case at school, the first group to be accused is Syrian kids.

Nez (rp): I know that my child would not be exposed to this treatment if he is not a Syrian. When a Turkish kid does the same juvenility he doesn't get such reactions. But our kids are instantly marginalized.

Most of the school administrators criticize the refugee parents that they do not care their children anyway and schools function as a caregiver for their children. Most of the educators have problems in accessing the families of refugee students and cannot reach anyone to communicate. The school administrators also stated that these parents regard the education of their children as an economic source. These views about the educational attainment patterns of refugee families can be seen as a roadblock on the sustainability of refugees' education.

Murat (a): Children are valueless for Syrians. They see the school and the teachers as childminders. The school starting age is 6. But, when their children are just 4 or 5 years old, they register them for school. The children cry at the first class, but their mothers leave them without a backward glance. They care nothing about their children, I mean.

Mehmet (a): These families see education only as financial aid. They are very indifferent. Their children don't attend school regularly.

Yusuf (a): After they register their children for school, they never come to school again. Because they only need an official school registration certificate to get financial aid from the government.

Kerem (a): For Syrian families, the educational processes of their children are not important. They come to school to take the documents necessary for getting social and financial aids. After that, we cannot follow them. Nobody knows where they go.

The native parents react to the coeducation of their children with Syrians in an exaggerated way. The view of native parents that refugee students have behavioral problems and they are not clean and healthy enough directs them to object to coeducation of their children with refugees. The native parent's participants asserted that their children be exposed to violence because of refugee students. Cultural patterns and systematic problems about the education of refugee students, here, are regarded as a roadblock.

Fatma (np): They are (Syrians) a very immoral nation. Their children know no limit. I don't want my child to have education with them.

Zeynep (np): They are older and overgrown children in classes at school. For example, my child is 8 years old, but there 10 or 11 years old children in his class. Consequently, our children are oppressed at school by these older Syrian children. There are even Syrian children who pulled a knife on our children while they are going to school.

Refugees as a source of new social problems

Since the social structure is not ready for a migration wave, new social problems arising from the migration of huge numbers of people is inevitable. Unfortunately, in Turkey, such a complicated process as the Syrian migration phenomenon is managed through daily policies organized without caution and unsystematic. And these policies are not long-lived and effective. Policies for refugees and their adaptation processes are also not well planned, and in the long run, this manner contains serious problems. Especially teachers regard social problems in terms of criminal matters.

Nihal (t): I wonder what will happen to these children ten years later. I mean, what will happen when they meet our children? For example, the children who sell paper tissues at traffic lights… How

will we able to share the same environment with these children ten years later? If we couldn't include them in educational and employment processes, it will be a great problem for us, I think.

Ela (t): These Syrian kids will be trouble for our country. Already there are lots of children that we cannot teach reading and writing in our country. Such that many of them are lost in nightlives or in drug business. With these Syrians, we take much more problematic children than we already have. What will happen to these children in the streets? Let me say; they cause trouble to us!

Insufficiency of economic and cultural resources: Priority of surviving

Forced migration means a challenging process. In a new country, refugees who have already lost all that they have should initially survive their lives. The lack of economic sources leads them to poverty and priorities in their lives are determined by their conditions. Unfortunately, education comes second after the basic surviving needs. Thus they could not support their children's educational process even if they want to do it. Unfamiliarity with the new social order and the new culture can be regarded as a roadblock for inclusion. Being survive is their priority and the most significant one is the economic conditions. Educators regard economic problems as an important roadblock for inclusion. Priority of surviving leads both parents and students left behind of education. The educators declared that if there are no financial problems, they could attend school actively and be included well.

Mehmet (a): As their economic levels rise, the adjustment problem of these children decreases. On the contrary, as the economic level decreases, the adjustment problem rises.

Ela (t): Their only aim is to survive, not to have education. If their children don't have education, it doesn't matter for their families. They don't care about their children, and so the children don't care about their own lives as well. Accordingly, they cannot learn reading and writing in a normal period. I think, there is no possibility for these children to have an academic career in our country. Only one or two percent can finish high school degree.

Liya (t): We try to include them in all our school activities. But, because they are very poor and they don't care about their children, they say that their children won't participate in the activities. For example, they don't participate in the reading festival or they don't give money for the service car that we use in museum tour. So, what can I do here? Should I separate them from their friends?

Syrian refugee students cannot attend school regularly. In some cases refugee families want their children to work and students do not want to go to school since they have a long break for education. Anyone can witness the child laboring.

Ilayda (t): We can see Syrian kids selling paper tissues in streets or collecting garbage behind the supermarkets.

Some parents also regard their economic status insufficient in order to support their children educational processes. Since they have lost what they had, they cannot achieve financial sources necessary for education.

Rana (rp): We had our own house and my husband was an electrician and he had his own workplace in Syria. The future of my children was guaranteed. But here...

Vale (rp): In Syria, when my child needed support about his lessons, I took private lessons. But we don't have any opportunities for that here.

The Dilemmas Based upon Integration Policies

There is a complicated dilemma for the inclusion of refugee students. The notion of "dilemma" has been used in order to describe this contradiction because both ways for the education of refugees have advantages and disadvantages. Though designing separate groups for refugees seems like an effective way in prevention the conflicts and withdrawing of refugees, it may reinforce the diversity. On the other hand, when refugee students are included in native students' classes, the problems of balancing the instructional activities between two groups of students arise because of the differences in readiness level especially in terms of language problems and discontinue of education. So, the problems about the integration policies emerge in terms of balancing the instructional activities and breaking the minority constellation.

Problems of balancing instructional activities between refugees and natives

Teachers alleged that they have serious problems in balancing the instructional activities for children with different educational and language backgrounds. Accordingly, coeducation is regarded as harmful for both natives and refugees. It is harmful to natives because the learning process and the nature of their educational patterns are interrupted and slowed down. It is also harmful to refugees since they are not at the same ability level with native students because of language diversity and different educational backgrounds, the gap between native increases.

Pelin (t): It would be better if there were classes composed of only Syrian kids. Otherwise, the teachers are divided into two. She/he has to prepare two separate activities for both groups. Teachers ask questions after activities and there are explanations about the activity in the book. But Syrian kids cannot understand the explanations and so they cannot answer the questions. Because, even though she/he learns reading, he cannot understand what she/he reads. That was the most challenging part of this problem for teachers.

Yusuf (a): They know neither reading nor writing. Teachers spare thirty minutes of 40 minutes lesson for these Syrian children. So, the Turkish parents justifiably complain about this; they think that Turkish children are wronged in lessons.

Breaking or reinforcing the minority constellation

Educating refugees apart from native students seems like a solution. Hardly, this time the problem of rigid distinctions can emerge. However, for the social life living in a separated world is not possible for refugees, inclusion seems necessary. The quotations from teachers indicate that separate education is not an effective solution and for inclusive education, an effective planning should be conducted and some precautions should be taken.

Ali (t): If a separate academic group was created for Syrian kids it would be better I think. But, this time, it would be bad in the sense of including them in society. I don't know how we can balance both sides.

Mina (t): Syrian refugees have minority psychology. They are completely in contact with each other. They talk to each other. They cannot contact us. In fact, it seems like they don't want any contact.

Mutual Roots as an Inclusion Area

During our research, we have also come up with the conditions under which social inclusion emerges. There are some mutual areas that refugees can be included in without facing barriers. Herewith, historical, cultural and ethnic roots come to the forefront. Religion is an important factor for inclusion of refugees. Especially in social life, refugees can interact with natives within the religion circle.

However, for some cases, mutual religion is not for inclusion or being accepted in the new society. Other refugee groups such as Iraqi Turkmens can reinforce the exclusion of Syrians in terms of ethnic matters.

Religious school as an advantaged educational environment

Religion, as an important component of culture, may have a crucial contribution to immigrants' inclusion in the new society. Thus immigrant religion can be regarded as important for cultural integration and sometimes it can be problematic. However, since Syrians have the same religion with most of the Turkish, cultural conflicts in terms of religion are expected to emerge at the minimum level. In Turkey, during recent years, there is a growing number of religious schools. These schools have become advantaged environments for refugees. Both language (Arabic) and believing in the same religion can be regarded as the reason for attending these schools. The parents of refugee children reported that they prefer to send their children to religious schools. They stated that when they attend religious schools, they are included in the educational process, effectively and their educational attainment increases.

Rana (rp): I wanted him to be successful at Arabic lessons, so I registered him for Imam Hatip (Religious) high school.

Lil (rp): My children learned Turkish, they can speak fluently. They have no problem at school. Because I sent them to Imam Hatip (Religious) high school. They are very successful in Arabic lessons. They are the best students of their teachers. Sometimes their teachers ask them about Arabic when they cannot explain the lesson. My older son received a certificate of achievement.

Wehibe (rp): My other son, for example, nobody wants to play with him because he is a Syrian. But if they are at Imam Hatip (Religious) high school, their lives are getting better.

Ethnic background - reinforcing disadvantages

Ethnic backgrounds of the refugees can be a source of both inclusion and exclusion in the new society. There is a mutual root in the context of ethnicity reinforcing the disadvantaged positions of Syrian refugees. Homogeneity of both sides in ethnicity may possibly not pose a problem in inclusion; but, when mutual roots gain importance, ethnic discrimination can emerge and cause conflicts. This discrimination leads to distinctions among refugees as well. Thus, it can be concluded that Turkmen Refugees came from Iraq contributed to Syrian exclusion.

Sinem (t): Iraqi Turkmen kids and Syrian kids are different from each other. There was a rotted culture in Iraq. I mean, we have many more similarities with Iraqi Turkmen people in the sense of language and religion. Begin with, we speak the same language. We unavoidably feel an instant connection with Iraqi kids, thanks to this similar culture. But the behaviors and cultural backgrounds of Syrian refugees are so different.

Mina (t): Iraqi kids, of course, resemble us culturally. Once for all, they are Turkmen. I mean, Iraqi kids are not like Syrian kids.

Zeynep (np): After I saw the Syrian refugees, I understood better why the prophet Muhammad came for these Arabic people.

DISCUSSION and CONCLUSION

Social inclusion is a hard job both for refugees and natives because it requires active participation in all dimensions of life in the new country (Omidvar & Richmond, 2003). It is known that in order to achieve an effective participation, the social order should be ready for refugees and for the problems and conflicts that multiculturalism can cause. Belonging, acceptance, and recognition are the elements of social inclusion (Omidvar & Richmond, 2003) and refugees' position within the society should be regarded through these notions. Since its function within the social order, education has a crucial importance for the inclusion of refugees in society. Taylor and Sidhu (2012) also stated that schools have a crucial role in settling, developing the belonging sense and adaptation process and schools developing good practices in refugee education promotes positive images and discourses of refugees. However, there are some roadblocks for inclusion and this study aimed to explore the barriers for inclusive education and the clashes between the Turkish and Syrian students.

Man (2015) argued that the migration waves produce problems in family life, living conditions, poverty, employment problems and lack of education. Accordingly, it has caused problems for all areas of social life and education, as an important institution of the society, couldn't stay out of the effects emerging from migration. So, the education of Syrian refugees has become a new and controversial problem for Turkey. Turkey was caught unprepared for this migration wave because the refugees arrived in the country as uncontrolled huge numbers in a very short time. At the beginning of the process, there were no determined policies for social inclusion and for family participation in school settings; and so, a systematic adaptation and inclusion of Syrian refugees in educational processes was interrupted. The role and individual approach of teachers becomes crucial here because it seems necessary to find a balance for supporting refugee students without marginalizing them (Taylor & Sidhu, 2012). In other words, they are landed with the responsibility of social inclusion of refugee students in schools. But, as Zufiaurre (2006) argued, teachers do not consider the special treatment that immigrant students need and show little concern for the macro-social events.

Sunata and Bircan (2015) reported that Turkey is not efficient in the education of refugees in terms of both accessibility and quality and since the lack of economic source, developing effective educational planning becomes difficult. There is no establishment to organize and follow the educational processes of refugees or to support and lead them professionally. These refugees are supported only by the people including teachers, directors, and parents they encounter in their social environments. But this support generally varies by the thoughts of these people on refugees, and sometimes we even see challenges instead of support. In other words, the problem of education of Syrian refugees is a multi-variable process and it has been becoming much more complicated day by day. Accordingly, sustainability is regarded as another problem area. Çopur and Demirel (2017) asked that since the refugee students could not attend to school as soon as they migrated, and because of the systematic problems, providing sustainable education for refugee students does not seem possible, and this results in other problem areas.

Language diversity is one of the main problems in the sense of the education of refugee students (Apak, 2014; Bircan & Sunata, 2015; Dryden-Peterson, 2016; Sinan & Gültekin, 2018; Taskin & Erdemli, 2018). Watkins, Razee, & Richters (2012) defined the language problem of refugee students as the 'number one' problem. According to the study of Demir and Aliyev (2019), refugees have many difficulties in many occasions where language should be used such as in hospitals, on the busses, in official documents, and even when shopping. Language diversity, in a similar way, poses such a big problem in our study that all types of participants see it as an important challenge for qualitative education. Because the roadblocks emerging from language diversity can make the refugee students disadvantaged academically and socially (Pugh, Every, & Hattam, 2012). When students are included in classes where the language proficiency are not suitable for them, they face various difficulties and it takes longer to overcome language barriers and widens the gap between them and their peers (Aydın &

Kaya, 2017) and while they are struggling to overcome the language barriers, they spend the time for learning language and fall behind in age-appropriate academic content (Dryden-Peterson, 2016). Moreover, naming students with limited literacy skills as 'special needs' groups and placing them at a disadvantaged position and marginalizing them should be avoided (Sidhu & Taylor, 2007). Accordingly, during the transition to the school process, cultural and linguistic adaptation is required (Pugh, Every, & Hattam, 2012).

However, language diversity is just the tip of the iceberg. In fact, there are much deeper social and cultural roots of these clashes, and language diversity can become also a source of other problems. Namely, in the new country, learning the new language is a prerequisite for economic, political, social and cultural integration (Hou & Beiser, 2006). But, it can be said that these problems cannot be overcome even the language adaptation was achieved successfully because the difference in school performance emerges from the difference in social class and educational patterns in refugees' hometown (Modood, 2007; cited in Fangen, 2010). Besides, the problem volume of language diversity varies according to different educational practices: While it doesn't have a meaning in temporary education centers, it is a common problem for all subjects in native schools. So, knowing the educational backgrounds of refugee students becomes important for the teachers. Ager and Strang (2008) asked that a lack of linguistic and cultural competences function as barriers for social connection within and between groups in the community. These barriers can be seen in school settings and especially in instructional practices. In the direct proportion to the researches in the field, teachers working in the schools with Syrian refugee students can feel inadequate when they cannot communicate with Syrian students (Konan, Bozanoğlu & Çetin, 2017).

One of the most important problems related to Syrian refugee students is poverty, and acculturation problem originating from poverty itself (Konan, Çavuşoğlu & Oğuz, 2017). Poverty and social isolation are the effects of war experiences (Miller & Rasmussen, 2010; cited in Watkins, Razee, & Richters, 2012) of Syrian refugees fleeing from the civil war in their country and this reflects to schooling in a negative way (Pugh, Every, & Hattam, 2012). In that vein, we found that refugee parents' educational attainment is quite low because of the economic and cultural deficits. The family-school relationship is very little or there is no communication between school and family (Taskin & Erdemli, 2018). On the other hand, researches in the field show that teaching refugee students separately causes more isolation and can disturb the cohesion within the social structure since they continued their old habits (Başbay & Bektaş, 2009; Taskin & Erdemli, 2018). But our findings reveal that coeducation policies for refugees in native schools cannot be a sole remedy for social isolation and exclusion. While refugees describe their adaptation processes to the new society based on poverty and language diversity, for natives and educators, the reasons for refugees' exclusion are that they become a threat for social order and some negative situations emerging by their existence. Refugees are regarded as a threat for social order and the precautions of families and even teachers reflect to school and lead to a clash between refugees and natives emerges. Sakız (2016) found that school administrators had negative attitudes about the coeducation of refugees and natives. It can be said that behaving the refugee students like an alien contributes to the marginalizing of these students. However, when the refugee students interact with the native ones, their presence will be approved (Bolloten & Spafford, 1998; cited in Hope, 2008).

In such unclear educational processes of Syrian refugees, educational outcomes are to be doubtful as well. Because of these deficits like language skills and family support and lack of cultural capital, academic failure is an expected result of the schooling patterns of refugee students. Financial problems are another barrier to educational attainment. Mercan and Bütün (2016) found that refugee students whose basic needs are not supplied have more problems within classroom settings and excluded more (cited in; Kağnıcı, 2017). Child laboring prevents refugee children from schooling (Harunoğulları, 2016). So, the educators experiencing problems with the education of refugees think that it's a high probability that Syrian refugees won't be able to graduate from schools as qualified individuals. On the other hand, the students studying at schools are prospective citizens of society. In other words, we actually shape the future of our societies by training these children at schools. So, the children of both sides, who have been feeling these conflicts deeply, may bring them into the future. If this unclear

educational process goes like this, a few years later, Turkey may probably face much bigger social and political problems based on Syrian refugees.

There is a growing body of literature about the advantages of inclusive education and its implications for successful cultural integration policies. One of the main requirements of inclusive education is understanding the dynamics of the newly arrived culture and this seems important for social integration. However, when we have focused on the two-sided characteristic of inclusion, understanding the cultural patterns of refugees is not enough alone. Tüzün (2017) suggested that a holistic approach is necessary for the adaptation process. During our research, we have observed that there is resistance for the inclusion of refugees both from refugees and natives. Refugees resist this process because they do not have the necessary means for including the new social order such as language, cultural capital, educational background, and economic sources. Natives resist because they regard the refugees as a social threat and anxiety emerges especially among the natives. Refugees, who have been seen as cheap labor force in the countries where they settle, have to work at very low wages as it is in Turkey (Demir & Aliyev, 2019), and accordingly native people working minimum wages have been on the edge of losing their jobs. Struggling for limited economic sources is the basis of attitudes to refugees and othering them (Clark, 2008; cited in Sönmez & Adıgüzel, 2017). Thus it is necessary to think about the competition to emerge in the labor market before discussing on the social integration (Özpınar, Çilingir & Düşündere, 2016). Through this research, it has been concluded that the labor market is the main reason for this resistance. Tumen (2016) indicated that native workers lost their employment after the refugees came in the labor market. The presence of immigrant worker has also caused a decline in the prices at the informal labor market (Balkan & Tumen, 2016). Koca (2016) identified this problem as public security and regarded this as a securitization problem.

In terms of belonging and acceptance, since the two-sided characteristic of the inclusion process, in order to conduct social inclusion, natives should accept refugees and the new social order. Deniz and Etlan (2009) claimed that the approaches of natives are quite important for surviving refugees without any problems where they live. The mutual roots are regarded as important here. Especially religion plays a role in providing social cohesion. Lazarev and Sharma (2017) found that the level of aid increases according to the religion of refugees. If they are Muslims, they can receive more economic support. Doğanay and Keneş (2016) stated that these problems emerging in social life are the reason for a discriminative approach to refugees. Accordingly, in the point of blaming the other one, analyzing the reasons why they do not accept, indicating the points that they perform resistance within a deep understanding has a crucial importance. Regarding the inclusive education is a one-sided process and land with natives means disregarding the roots of roadblocks in front of inclusive education arising from immigrants. In conclusion, we have focused on the crucial importance of education for inclusion and the roadblocks on inclusive education in school settings. However, there are wider social roots of these roadblocks. We concluded that the problem of refugees' education is not merely derived from school settings or pedagogical processes. Thus, a holistic approach addressing the education of Syrian refugees not only as an educational or instructional problem but also as a reflection of major social problems is needed in order to solve this problem.

To sum up, the roadblocks we investigated emerge from language diversity, economic problems, and social and cultural premises and biases. These roadblocks can be clustered under instructional and sociocultural dimensions. There are cyclical relations between these dimensions, and the themes and categories of our findings intersect with both dimensions. First of all, language diversity is regarded as one of the major problems for the inclusive education and it is related to both instructional and sociocultural dimensions. It is an instructional problem because interacting in an effective way with a student or speaking another language is a quite desirable quality for a teacher in inclusive education. It becomes a sociocultural problem when individuals cannot recognize each other without any communication. Economic problems are also related to these two dimensions we identified. For the instructional dimension, survival instinct or priority of surviving restrains families and even the children from educational attainment. It is also a social problem that Syrians become a threat for natives in terms of getting a job or losing their income. Though the clashes resulting from social conflicts are out of

school, in-school processes are indispensably affected by these problems. Another intersection point of these two dimensions emerges in mutual roots. We suggested that religious schools are advantaged educational environments for refugees. These students can interact easily with other components of the school setting where their cultural codes (such as language) are approved. And finally, though teachers are regarded as instructional subjects, sometimes they can play roles in the sociocultural dimension. In other words, with their practices or approaches, teachers can cause the reproduction of socially disadvantaged position of refugee students on the basis of ethnic discrimination, while the teachers having cultural awareness can be inspirational role models for inclusive education.

In consideration of the findings of this study, it can be said that both the natives in social life and the teachers in school settings are landed with some responsibilities for inclusion in migration processes. They are wanted to have welcome and tolerant attitudes towards the refugees in both fields. So, first of all, their resistance points have to be analyzed and understood in order to conduct a successful inclusion process, and policies developed for refugees should include dimensions for Turkish citizens as well. The problems related to migration seen in school settings, as aforesaid, are actually rooted in wider social dimensions as language diversity, economic problems or interruptions in the adaptation of refugees arising from prejudice. In order to minimize these problems, some revenue generating projects, which can create social interaction fields for natives and refugees, can be developed by Directorate General of Migration Management, municipalities or nongovernmental organizations. Besides, some researches can be done to analyze how religious schools function as advantageous fields for refugees and why the refugees adapt more easily to these schools. The results of these researches can be an inspiration to the prospective studies focusing on creating instructional models for Syrian refugees living in Turkey.

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TÜRKÇE GENİŞLETİLMİŞ ÖZET

2011 yılında Suriye'de iç savaşın başlamasından itibaren, savaştan kaçarak ülkesini terk eden milyonlarca Suriyeli göçmen, bu ülkenin en uzun sınıra sahip komşusu olarak Türkiye'ye yönelmiş ve bu durum Türkiye'nin sosyolojik yapısını etkileyecek bir boyuta ulaşmıştır. Araştırmanın raporlandığı Aralık 2018 itibariyle Suriye'den Türkiye'ye göç eden insan sayısı 3,5 milyonu aşmıştır (Göç İdaresi Genel Müdürlüğü, 2018) ve bunun 1,6 milyonu çocuklardan oluşmaktadır (UNICEF, 2018). Kısa bir sürede bu yoğunlukta bir göç dalgasının yaşanması ve göçmenlerin yarıya yakınının çocuklardan oluşması, Suriyeli mülteciler konusunu Türk toplumunda kritik bir gündem maddesi haline getirmekte ve bu konunun başta eğitim olmak üzere toplumsal yapıyı oluşturan kurumları etkilemesini kaçınılmaz kılmaktadır. Türkiye başlangıçta bu duruma hazırlıksız yakalanmış olsa da, uyguladığı açık kapı politikasıyla komşu ülke vatandaşlarına kucak açmış ve iyi niyetli tutumunu eğitim alanında onlara yönelik yürüttüğü kapsayıcı eğitim politikasıyla sürdürmüştür.

Engelli bireylerin okula entegrasyonu bağlamında kullanılmaya başlanan kapsayıcı eğitim kavramı, son yıllarda okullardaki dil ve kültür farklılıklarına yönelik tartışmalar için de kullanılır hale gelmiştir. Bu bağlamda kapsayıcı eğitimin gündeminde, farklılıkları dikkate alınmadan tüm öğrencileri kendilerini ait hissettikleri okulun bir parçası haline getirme ideali yer alır (Taylor & Sidhu, 2012). Bu kapsamda Suriyeli mülteci çocuklar Türkiye'deki devlet okullarında Türk çocuklarıyla birlikte aynı sınıflarda Türkçe eğitim görmektedirler. Burada amaçlanan, ayrımcılığın en aza indirilmesi olmuştur (Özcan, 2018). Okullar bu görevi, sahip olduğu insan unsurunun kapsayıcılık kavramı ekseninde bir okul yaşamı üretmeye tam katılımları ile yerine getirebilirler (Mille, Ziaian & Esterman, 2018). Dolayısıyla okulların söz konusu ideali gerçekleştirme potansiyelleri, kapsayıcı bir okul kültürüne sahip olmaları ile doğru orantılıdır. Böylesi bir sürecin yürütülmesi, okullarda gerek göç süreçlerinden gerekse de dışsal nedenlerden kaynaklanan bir dizi engel ile karşılaşabilmektedir. Araştırma, sözü edilen kapsayıcı eğitimin uygulama alanı olan okullarda ne tür engellerle karşılaştığını ve bu engellerin ark planında yer alan sosyal ve kültürel motivasyonları ortaya çıkarmayı amaçlamaktadır.

Suriye'den Türkiye'ye gerçekleşen zorunlu göç gibi, sosyal yapıyı kapsamlı biçimde etkileyen olaylar, araştırmacıların durumu yerinde görmelerini ve insanlarla derinlemesine görüşme yapmalarını gerektirmektedir. Nitel bir durum çalışması olarak desenlenen bu araştırmada, okul ortamlarında Suriyeli mülteci öğrencilerin kapsayıcı eğitimlerinin önündeki engeller durumu oluşturmaktadır. Araştırmanın çalışma grubu belirlenirken uygun örneklem belirleme stratejisi uygulanmıştır (Frankel & Wallen, 2012). Bu doğrultuda araştırmanın çalışma grubunu, Ankara'da Suriyeli mülteci çocukların öğrenim gördüğü 5 ortaokulda görev yapan 12 öğretmen ve 5 okul yöneticisi ile 10 öğrenci velisi oluşturmaktadır. Veri toplama süreci, nitel araştırmalarda en yaygın ve kullanışlı bir teknik olan yarı yapılandırılmış görüşmeler yoluyla gerçekleştirilmiştir. Araştırmaya dahil olan her bir grup için ayrı ayrı olmak üzere toplam dört farklı türde görüşme formu hazırlanmıştır. Görüşme formları hazırlandıktan sonra alan uzmanlarının görüşüne sunulmuş, alan uzmanlarından gelen dönütler doğrultusunda düzenlenerek pilot görüşmeler gerçekleştirilmiştir. Pilot görüşmelerden elde edilen deneyim ve görüşler doğrultusunda son hali verilen görüşme formları üzerinden görüşmeler gerçekleştirilmiştir. Elde edilen veriler iki döngü kodlama biçiminde tümevarımsal bir yaklaşımla kodlanarak analiz edilmiştir. Bu kodlar ilişkili kategoriler altında toplanmış ve bu kategoriler temaları oluşturmuştur. Geçerlik ve güvenirlik bağlamında, elde edilen bulgular yorumlanırken aynı anda sunulan doğrudan alıntılar araştırmanın tutarlılığına temel teşkil etmektedir. Verilerin analizi sonucunda dört ana temaya ulaşılmıştır: "Dil Farklılığı", "Temel Sosyal Problemlerin Okuldaki Yansımaları", "Entegrasyon Politikaları Temelli İkilemler" ve "Bir İçerme Alanı Olarak Ortak Kökler". Dil farklılığının göçmenlerin eğitimi bağlamında yer alan bütün özneler için ortak bir problem alanı olmasının tartışıldığı bu temada, göçmen öğrencilerin Türkçeyi etkin biçimde konuşamamalarından kaynaklanan sosyal ve eğitsel sorunların üzerinde durulmuştur. Göçmenlerin varlığının toplumsal yapı içinde neden olduğu sorunların okul içi süreçlere yansımalarının ele alındığı ikinci temada temel argüman okulun toplumun maketi

olduğudur. Okullar, içinde bulundukları toplumun sosyoekonomik ve sosyokültürel arka planları dikkate alınmadan doğru biçimde analiz edilemezler. Diğer bir deyişle okul, toplumsal yapının izdüşümüdür. Suriyeli mültecilerin varlığının, yoğun olarak yaşadıkları bölgelerde sosyal ve kültürel çatışmalara neden olabildikleri temel bulgusu üzerinden bu çatışmaların kapsayıcı eğitim önünde önemli bir engel teşkil ettiği tespit edilmiştir. Aynı zamanda yoksulluk ve kültürel yeterliliklerdeki eksikliklerin de toplumsal bütünleşmeyi engellediği bu temada ele alınan temel konulardan biridir. Sistematik ve politik problemler mültecilerin eğitiminin çelişkili yapısının temel kaynağıdır. Bu öğrencilerin eğitimiyle ilgili ikilemlerin ele alındığı bu temada mülteci öğrencilerin yerli öğrencilerle birlikte mi yoksa ayrı olarak mı eğitilmeleri gerektiği konusundaki yaklaşımlar ele alınmıştır. Etnik ve kültürel ortaklıkların ve farklılıkların mültecilerin toplum içerisinde kaynaşmasındaki rolüne odaklanan son temada ise dini içerikli okulların dil ve kültürel ortaklıkların sağladığı avantajlar açısında Suriyeliler için önemli bir kanal olduğu ancak etnik kökenler gündeme geldiğinde dezavantajlı duruma düşebildikleri konuları üzerinde durulmuştur.

Araştırma sonuçları, dil problemlerinin etkin bir eğitim-öğretim süreci önünde büyük bir engel olduğunu, okul dışı sosyal çevrede yaşanan ve çoğu zaman ekonomik koşullardan kaynaklı olan sosyal çatışmaların okul içi ilişkilere yansıdığını, mültecilerin eğitimi konusunun göz ardı edilemeyecek çeşitli boyutlardan oluştuğunu ve bu durumun yaşanan sorunları pekiştirdiğini ve kültürel bazı kanalların mülteciler açısından çıkış noktası olarak görüldüğünü ortaya koymuştur. Bu çalışmanın ortaya koyduğu en tartışmalı sonuçlardan biri mültecilerin sosyal yaşama dahil edilmesi ya da dışlanmalarının tek taraflı bir süreç olarak ele alınamayacağıdır. Suriyeli mültecilere kapsayıcı eğitimlerin önündeki engelleri kaldırmada kolektif ve bütüncül bir yaklaşımın gerekli olduğunu ortaya koymaktadır.

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Reconsidering the motivation of learners in educational computer game contexts

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ABSTRACT The purpose of this study was to identify motivational elements of an online multi-player educational computer game that uses a 3D multi-user environment to immerse children ages 9-12 in educational tasks. The methodological approach design ethnography, a process that involves using ethnographic methods when the researchers are both observers and designers of the context being studied, was employed for researching this game. Interviews were completed with twenty participants playing the educational game and prolonged observations were conducted where participants played the game in a natural setting. The constant comparison method of grounded theory was used for analyzing interview and observation records. The qualitative methods used in this study allowed for additional insights into previous research on motivation. In addition to the 5 constructs identified in previous motivation research on videogames (challenge, curiosity, control, fantasy, and choice), 10 additional motivational elements to play the game emerged from an analysis of interviews with and observations of the 20 children participating in this study. These were identity presentation, social relations, playing, learning, achievement, rewards, immersive context, uniqueness, creativity, and context of support.

Keywords: *Computer games, Video games, Motivation, Learning, Education*

Eğitsel bilgisayar oyunu bağlamlarında öğrencilerin motivasyonu hususunun yeniden incelenmesi

ÖZ Bu çalışmanın amacı, 9-12 yaş arasındaki çocukları eğitsel görevlere yönlendirmek için üç boyutlu çok kullanıcılı bir ortam kullanan çevrimiçi çok oyunculu eğitsel bir bilgisayar oyununun motivasyonel öğelerini tespit etmektir. Araştırmacıların üzerinde çalışılan bağlamın hem gözlemcisi hem de tasarımcısı olduğu ve etnografik yöntemlerin kullanılmasını içeren bir süreç olan tasarım etnoğrafyası bu oyunu araştırmak için yöntemsel bir yaklaşım olarak kullanılmıştır. Eğitsel oyunu oynayan yirmi katılımcıyla görüşme yapılmış ve katılımcıların oyunu oynadıkları doğal bir ortamda uzun süreli gözlemler yapılmıştır. Görüşme ve gözlem kayıtlarını çözümlemek için temellendirilmiş kuramın sürekli karşılaştırma yöntemi kullanılmıştır. Bu çalışmada kullanılan nitel yöntemler, motivasyonla ilgili önceki araştırmalara ek görüşler sağlamıştır. Video oyunları konusundaki önceki motivasyon araştırmalarında belirlenen 5 yapıya (uğraşı, merak, kontrol, fantezi ve tercih) ek olarak 10 motivasyon öğesi, oyunu deneyimleyen 20 çocukla yapılan görüşmeler ve gözlemlerin çözümlemesinden ortaya çıkmıştır. Bunlar kimlik sunumu, sosyal ilişkiler, oynama, öğrenme, başarı, ödüller, çevreleyen bağlam, benzersizlik, yaratıcılık ve bağlam'dır.

Anahtar Kelimeler: *Bilgisayar oyunları, Video oyunları, Motivasyon, Öğrenme, Eğitim*

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INTRODUCTION

Even the most elegantly designed educational software will fail if the learners are not motivated to learn. For this reason, designers of any educational software must work to establish a context that learners will find motivating. Motivation is related to learning because learning is an active process that requires conscious and deliberate effort (Bruner, 1960; Wlodkowski, 1986). Learners are simply unlikely to learn if they are not motivated to apply the necessary effort. In recent years, there have been extensive efforts towards building learning environments that provide motivational elements. In particular, some educators are examining the potential of computers and are using principles underlying the design of video games to establish rich learning contexts (Barab, Thomas, Dodge, Carteaux, & Tuzun, 2005; Malone, 1980; Malone & Lepper, 1987).

Prensky (2002, p. 6) argues that people play games because they think "the process of game playing is engaging." He explains why some games may prove more motivating than other educational contexts. The purpose of the designers of computer games is to keep the players engaged. They need their players to come back to the game, and players' doing so is a measure of designers' success. However, many view the purpose of education in general as not being to engage learners but to support the learning of specific content. To motivate players, designers of games use gameplay, which are all the activities and strategies employed in the game to sustain the engagement and motivation of its players. Understanding the strategies or elements of gameplay used by designers can provide rich insights for instructional designers who attempt to develop instructional contexts that support content understanding in engaging ways.

The work in this study builds upon research and a conceptual framework largely provided by Malone and Lepper's (1987) work (Tzeng, 2001). They developed a taxonomy of intrinsic motivation for learning based on four factors motivating the learner: challenge, curiosity, control, and fantasy. In addition to research conducted by Malone and Lepper, other researchers have studied the elements that make educational computer games motivating. For example, Cordova and Lepper (1996) examined the effects of contextualization, personalization, and choice in the learning process. Results indicated that for each of the three treatment strategies learners showed higher levels of intrinsic motivation. As a result, they were more deeply involved with the activities and learned more in a fixed period of time. They also showed higher perceived competence than learners in the control group. The learners using personalized version of the games, based on their backgrounds and interests, displayed higher gains in motivation, involvement and learning than the learners using non-personalized version of the games. Similarly, learners who were offered a choice showed greater increases in learning and motivation.

The studies that Malone and Lepper (1987) based their conclusions on utilized computer games that were developed in the 1980s. When compared to their more recent counterparts (Gee, 2003), these games had low audio and video fidelity, had relatively few multimedia elements, and generally did not include the utilization of cooperation. For example, the Darts game, one of the games used in the Malone and Lepper studies, utilized a screen in text mode that lacked color. In addition, as pointed out by Chen, Shen, Ou, and Liu (1998), Malone and Lepper (1987) studied computer games when most of these games were designed for single-user play and therefore lacked a multi-user component. For this reason, most of the factors they considered included individualistic factors.

Much of the research in motivation and educational computer games has had methodological shortcomings. The first important problem in this regard is researcher-determined variables. Chen et al. (1998) criticized Malone and Lepper's (1987) taxonomy for their lack of multi-user elements and offered the preset motivational factors of competition, collaboration, and recognition. The second important problem with these studies is that of data collection methodology. These studies employed survey methodology and the results came from questionnaires administered only once. The sustainability and

persistence of human motivation cannot be explained with data collected in a single session. As Bandura (1986) points out, motivation for activities should be measured at different points in time so as to decrease the risk of misinterpreting short-term changes in motivation. The third important problem is the significance of novelty effect in these studies that offered computer games to learners and then measured learners' motivation immediately after these games were played. For this reason, the validity of the findings related to the factors that explain the motivation of users playing these games becomes questionable, especially from the perspectives of sustainability and persistence. As Garris, Ahlers, and Driskell (2002) indicated, initiating player engagement and sustaining it over time are different phenomena, and little is known about the latter. Additionally, after evaluating sixty years of research on motivation in education, Weiner (1990) concluded that restricting motivation studies of learning just on the part of the individual was a narrow focus. He highlighted "considering frameworks larger than the self" (p. 621) and put emphasis on thinking about further motivational constructs, "such as belongingness" (p. 621). He also added that there could be "many uncharted areas to incorporate" (p. 622) into motivational theories.

The purpose of this study was to identify the motivational elements of an educational multi-player online role-playing computer game while addressing the aforementioned methodological shortcomings. The methodological efforts were guided by the following research question: "What are the motivational elements of Quest Atlantis (QA), whether intrinsic or extrinsic, in terms of student-defined motivation?" Motivation is a hypothetical construct (Good & Brophy, 1997; Martin & Briggs, 1986) and its definition varies. For the purpose of this study, motivation is defined as individuals' showing their willingness to initiate and sustain participation in QA activities. Examples of QA activities are completing Quests (engaging curricular tasks), participating in synchronous and asynchronous discussions, joining guilds, building virtual structures, and signing up for QA jobs.

Quest Atlantis

Quest Atlantis is an educational computer game that immerses children ages 9-12 in a 3D, multi-user virtual environment for completing educational activities (see Figure 1). The purpose of the game is to save the mythical world of Atlantis from an impending disaster (Barab, Thomas, Dodge, Carteaux, & Tuzun, 2005). According to the back story of the game, as Questers (learners playing QA) complete educational activities called "Quests," they help save Atlantis from this disaster. Leveraging strategies from online role-playing games, QA combines strategies used in the commercial gaming environment with lessons from educational research on learning and motivation. It allows users to travel to virtual places to perform Quests, talk with other users and mentors, and build virtual personae. Quests are engaging curricular tasks designed to be entertaining yet educational.

Figure 1. Screenshot of the virtual environment, showing the virtual environment on the left and the personal homepage of the player on the right.

Quest Atlantis lies at the intersection of education, entertainment, and QA social commitments. However, instead of conceptualizing QA as computer software or a computer "game," it may be better described as a virtual environment designed to support an online community as well as multiple face-to-face communities. The Quest Atlantis storyline, its virtual worlds, and policies make up the Quest Atlantis meta-game in which there are numerous nested activities with an overlapping umbrella structure that gives the other activities structure. The Quest Atlantis meta-game contains the following key components: 1) a mythological legend that provides a back story for Quest Atlantis activities, 2) a number of 3D worlds and villages through which Questers, mentors, and the Quest Atlantis council members can interact with each other, 3) a Personal Digital Assistant (PDA) for each Quester, serving as a portfolio of their learning and participation, 4) an advancement system centered on pedagogically valid activities that encourage academic learning, entertainment, and social commitments, and 5) an extrinsic reward structure. Quest Atlantis has been implemented in different contexts, including schools as part of the curriculum through QA unit plans, and after-school programs as a volunteer activity (i.e., Boys and Girls Clubs of America).

The Quest Atlantis educational game provides a very different context from those games Malone (1980) and Malone and Lepper (1987) studied, and is quite different from games that were popular in the 1980s and 90s. QA attaches itself to the genre of computer games known as Massively Multi-Player Online Role-Playing Games (MMORPGs) in the commercial gaming sector. These games allow thousands of simultaneous users to synchronously collaborate on accomplishing particular game challenges. Most often, these games consist of a virtual world that players inhabit through the use of an avatar that can move around the space and perform actions. The avatar serves as sort of an alter ego or alternative identity whose actions are controlled by the player. Frequently, avatars have a certain look that is created by the player, and becomes a means of communicating one's game identity to others in the virtual space. As one can imagine, MMORPGs are very social places with members being able to form social groups, with some allegiances totaling over 200 members (Gee, 2003). This social element of MMORPGs as well as their users' ability to grow and project themselves through avatars serve as important motivators which were not readily available when Malone, Lepper, and colleagues did their initial motivation studies on gameplay.

As a multi-user virtual environment, QA has a three-dimensional environment that includes worlds and villages through which students navigate. At the time this study was conducted, there were 11 worlds each of which had a theme (e.g., Unity World, Culture World, and Ecology World). Each world had 3 villages addressing different aspects of the world's theme. It does this through the 20-25 Quests encountered in the village. A Quest lives inside of a village, and is an exercise or activity that Questers complete either in the virtual space or in the real world that allows them to investigate their world based on the village in which they are questing. Each Quest is connected to local academic standards and to underlying social commitments (e.g., environmental awareness, social responsibility, compassionate wisdom). Completing Quests requires that children participate in real-world, socially and academically meaningful activities, such as building personal scrapbooks, researching other cultures, conducting environmental studies, interviewing community members, calculating frequency distributions, and developing action plans.

Another important element of QA is the pro-social agenda that motivates participation. While QA does have a transgressive narrative in that the kids on Earth are trying to help the Council rebel against the corrupt leaders of Atlantis, they are doing so by adopting and advancing pro-social commitments focused on engaging what are typically adult-sanctioned behaviors. In this way, adults and society more generally acknowledge the child's behavior in QA as a valuable way to spend time. Additionally, and on a related note, QA has numerous opportunities to meaningfully participate in the QA community, such as signing up for jobs including link checker and greeter, or one can rent land and help to create and build the virtual environment itself.

METHODOLOGY

This study can be characterized in multiple ways. It can be characterized as an example of ethnographic research since its purpose was to describe a culture-sharing group (Fetterman, 1998). Considerable amount of time was spent among the people at the selected research site (as documented in Barab, Thomas, Dodge, Newell, & Squire, 2004; Barab et al., 2005). The study included common elements of ethnographic studies such as field work, participant observation, and interviews. This study can also be characterized as naturalistic (Lincoln & Guba, 1985) because the data collection took place in a natural setting. Also, variables were not manipulated to confirm or disconfirm any a priori hypotheses.

Being the designers of this educational game complicates the authors' roles as researchers in this study in addition to those challenges traditionally associated with ethnography or naturalistic research (Clifford & Marcus, 1986; Fielding & Fielding, 1986; Silverman, 1993) because the researchers were more than participant observers. The philosophy of the QA implementation calls for collaboratively developing a vision for each of the implementation sites while this vision is researched at the same time it is created. Barab et al. (2004, p. 254) refer to this process as "design ethnography," referring to "an ethnographic process involving participatory design work with the agenda of transforming the local context while at the same time producing a design that can be used in multiple contexts." The goal of design ethnography can be described as changing or empowering the culture under study. During the process, individuals and local contexts transact in a manner that *co-evolves* the interlocutors. Design ethnography requires three ongoing focal points, which are trust, intervention, and sustainability. The evolution of QA took place during a 2-year ethnographic study, spanning the focal points of trust and intervention. This study took place during a timeframe in which the dominant focal point was the sustainability of the designed intervention.

Context of the Study

A purposeful sampling was conducted for the selection of the context. The following was the major criterion for identifying the context: Quest Atlantis centers that were enrolled in the QA program for at least six months and that would allow for ongoing information monitoring of behavior and frequent formal and informal interviews. This sampling criterion was used because a center was sought that went beyond the early adoption level (Rogers, 1995). In this way, any novelty effect was eliminated (Clark, 1983). In media studies, a novelty effect is an uncontrolled effect and tends to disappear over time (Krendl & Broihier, 1991). As a result, this study took place in an after-school program located in a Midwestern town. The QA design and development team had been collaborating with this after-school program for over two years and the team had a fairly strong relationship with the program, making this a convenient sample location at which to carry out this research. Further, the fact that it was an after-school context made it an interesting context for examining motivation in that learners were not compelled by teachers or traditional school structures and strictures to participate.

The after-school program was a member of the national Boys and Girls Clubs of America. There were 645 members between the ages of six and eighteen, of which 64% were boys and 36% were girls. Participation in the after-school program was voluntary and about 70 to 100 children participated on any given day. The club areas included the gym, game room, canteen area, teen room, library, art room, and computer lab. There were three full-time staff members for the general management including an executive director, a unit director, and a program director. Additionally, about fifty part-time staff members supervised children in all areas of the club. Children were transported from their schools to the club between 3pm and 4pm in a typical day. Once they were inside, it was up to them what to do during the rest of the day. They normally chose one of the routine activities in the areas mentioned. Children were picked up by their parents usually between 5pm and 6pm. The closing time was 8pm.

The computer lab included 14 computers with broadband Internet connection, a file server, a flatbed scanner, and a laser printer. There were five part-time staff members to watch the lab. They worked on different days, and usually one to three staff members were present. The staff member with the most experience functioned as the lab manager and took care of the tasks such as setting weekly lab schedules, maintaining computers, and enforcing lab rules. The available software included the Windows operating system, the Microsoft Office Suite, Encarta Encyclopedia, various graphics software, Mavis Beacon Teaches Typing, Word Munchers Deluxe, Microsoft Magic School Bus educational software series, Reader Rabbit's Math, Amazon Trail, Civilizations, SimCity 2000, SimCity 3000, and Quest Atlantis. Use of these software and lab activities were scheduled weekly by the lab manager and advertised in the entrance to the lab.

Participants

The QA target audience is between the ages of 9 and 12. There were 346 members (54%) within this range at the club, among which 133 members voluntarily signed up for QA. The interview participants were chosen conveniently from this group meeting the following criteria: (a) QA players, who had played the game on at least five different occasions; and (b) QA players, who had spent at least three hours within the game. With these criteria it was attempted that the Questers had accumulated the prerequisite skills necessary to play the game at a basic level. Based on these criteria, the first author was able to interview 20 children in the one-month timeframe anticipated for this task. Three of the interviewees also played QA at their schools. Children in the interview group attended the club 3.7 days a week on average (SD=1.6). As is typical of this Midwestern community, most interviewees were Caucasian Americans and just one of the children was African-American. Five of the children were female and fifteen were male. Typical of the low socio-economic status of children at this after-school context, fifteen of the children were from homes eligible for free or reduced lunch. These children used computers and the Internet for 3.5 years on average (SD=1.5). They used computers mainly for word processing, presentation, the Internet, and for games. Each one used the Internet at least once a week, while half of them indicated using it every day. In terms of games, half of them had a game console at home, three quarters mentioned games as a category of software they used on computers and half of them indicated playing games on the Internet.

Data Collection

Primarily ethnographic methods were used including interviews, observations in the different areas of the club with an emphasis on the computer lab, and document analysis. Semi-structured interviews were the primary method of data collection used in this study. As Fetterman (1998, p. 33) stated, "the ethnographer should ask the right questions" to provide validity for a research study. To ask the right questions, he suggested going into the field and finding out what people do in their daily lives. Aligned with this suggestion, two years of visits to the collection site preceded forming the questions asked during the interviews (see Appendix 1).

A total of twenty formal interviews lasting 15-45 minutes were completed over a thirty-six-day period. Transcription of the interviews resulted in 161 single-spaced pages of data. Observations were conducted primarily when members were interacting with QA in the computer lab. The first author typically spent five hours a day, Monday through Friday, from 3pm to 8pm, in the computer lab for two months. Observation notes were entered into an online database and resulted in 76 single-spaced pages of data. The document analysis involved examining data from the QA servers, including all electronic data related to Questers' participation within the game.

Data Analysis Procedures

The constant comparison method of grounded theory was used for data analysis. Grounded theory is "… a general methodology of analysis linked with data collection that uses a systematically applied set of methods to generate an inductive theory about a substantive area" (Glaser, 1992, p. 16). In the

constant comparison method, a method recommended for generating grounded theory, the researchers ask the following question while they continually code, compare, analyze, and write memos about the data while analyzing them: "What category or property of a category does this incident indicate?" (Glaser, 1992, p. 19). The categories inductively emerge out of the data rather than being decided prior to the data analysis (Patton, 1987). Possible data sources might include interviews, field observation records, documents, and video tapes (Strauss & Corbin, 1994). Strauss and Corbin (1998) described three stages to analyze the data: (a) open coding, (b) axial coding, and (c) selective coding. The constant-comparison method was employed with the interview and observation records through these three stages. Since Weiner (1990) pointed out the "many uncharted areas to incorporate" into motivational theories, it was perceived that an inductive approach to data analysis was a suitable tool for illuminating these "uncharted areas." Aligned with this idea and consistent with the original work by Glaser and Strauss (1967), researchers resisted forcing their preconceptions on to the data as much as possible, and let the categories emerge from the data. For this reason, it can be said that the use of grounded theory and the constant comparative method in this study is closer to that of Glaser's (1978, 1992) in philosophy.

Open coding

The first five interview documents were open coded by the three authors, while the remaining fifteen interview documents were coded by the first and third authors. The same two authors coded one of the observation records. All of the remaining observation documents were coded by the first author. During the open coding, an answer to a question was coded as a whole paragraph. The researchers negotiated the codes until they arrived at 100% agreement. This process of open coding was independent of the research question. The open coding of the observation documents was conducted in a similar way and at the paragraph level. After the open coding of the interview documents, there were 202 codes. Open coding of the observation records added 32 new codes. A total of 234 codes were obtained.

Axial coding

In this stage categories were systematically developed. Open coding and axial coding were not sequential and researchers moved back and forth between the two stages, which occurred as part of the ongoing data collection process. The first and third authors preliminarily organized 234 codes in 16 categories. Further, these categories were collapsed then again under 5 of these original categories so as to create more parsimony and offer more usefulness to the codes: The "different from others" category included identity, social, building, and edutainment. The design category included homepage, 3D, and QA extras. The motivation category included store items and control. The implementation category included Boys and Girls Club context and people. The feelings category stood alone.

Selective coding

The three researchers then got together to discuss these categories and the codes within them. Since the open coding and the collapsing of categories were accomplished independent of the research question, these 16 categories and the larger 5 categories characterized the data well in general but did not characterize it well with respect to the research question; what were the motivational elements? For that reason, the researchers re-debated the codes and the categories in light of the data by using their own characterizations of motivation based on salient themes and the research question and by re-visiting the literature on motivation. This re-debate was a dialectic intersection of the categories grounded in the data, authors' intuitive responses to the research question, and existing theories of motivation.

After the re-debate, a number of changes were made. Nine of the categories were kept but renamed: building as creativity, social as social relations, identity as identity presentation, store items as rewards, motivation as achievement, 3D as immersive context, Boys and Girls Club context as context of support, different from others as uniqueness, and control as control and ownership. Six categories were dropped and they were collapsed under other categories: QA extras, people, homepage, design, implementation,

and feelings. The remaining edutainment category was huge in size and therefore was split into playing and learning categories. Two new categories emerged that were previously nested under one of the 16 categories: curiosity and fantasy. In the end, thirteen categories were obtained all of which related to and were placed under the research question. These categories were: identity presentation, social relations, playing, learning, achievement, rewards, immersive context, fantasy, uniqueness, creativity, curiosity, control and ownership, and context of support.

In the findings section, these categories are presented in a way that has both experience-local meaning and at the same time is intended to have experience-distant significance (Geertz, 1973) to others analyzing motivation in different contexts and conditions. This occurs through ensuring that local interpretations are informed by and respond to previous research and theory, with presentations of the findings being contextualized in terms of the broader literature. Whereas there were over 1600 coded chunks of data within the 161 single-spaced pages of interview data, journal limitations have made it impractical to meaningfully immerse the reader into the local stories. Therefore, at least one chunk of raw data related to a category has been shared while spending much of the discussion of each of the 13 categories in terms of its meaning more generally.

Trustworthiness

Lincoln and Guba (1985) recommended using the word "trustworthiness" to refer to the notion of verification in qualitative studies. They defined trustworthiness as persuading the audience of a research study that the findings of the study are meaningful in terms of the empirical data. Triangulation has been a common method to provide trustworthiness in qualitative research (Bogdan & Biklen, 1998; Patton, 1980). Denzin (1970) originally advocated the use of multiple methods and multiple sources of data to provide triangulation, while later suggesting using multiple researchers and multiple theories to improve triangulation (Denzin, 1978; Merriam, 1998). The first three approaches of triangulation were followed to increase the trustworthiness of this study. Multiple methods of data collection were used: Semi-structured interviews, observations, and document analysis. Multiple sources of data were used: children using QA, personal observations, and QA participation information in QA electronic databases and logs. Finally, the three researchers participated in the constant comparative analysis of data.

FINDINGS

One indicator of motivation was the extent to which the 20 interviewees participated in QA activities. During the 14 months of use these Questers collectively logged on 1,594 times to the game (M=80, SD=66), spent 583 hours within the game (M=29, SD=34), and worked on 125 Quests (M=6.3, SD=5.6), 88 of which were accepted by Quest response reviewers (M=4.4, SD=4.3). Going through the constant comparison analysis of interview and observation data, thirteen motivational elements of QA were identified: (a) Identity presentation, (b) social relations, (c) playing, (d) learning, (e) achievement, (f) rewards, (g) immersive context, (h) fantasy, (i) uniqueness, (j) creativity, (k) curiosity, (l) control and ownership, and (m) context of support. A discussion of these categories and the data illuminating the discussion are presented below. An advance organizer for them appears in Table 1.

Table 1.
Thirteen Categories and Sub-Categories as Motivational Elements

Category	Sub-category	Number of instances in interviews	Number of times coded in interviews and observations	
1. Identity Presentation	Avatars	12	22	83
	Usernames	5	10	
	Homepages	18	51	
2. Social Relations	Interaction with others	19	166	260
	Sharing	10	40	
	Competition	2	3	
	Showing off	14	28	
	Groups	10	13	
	Privacy	2	5	
	Security	4	5	
3. Playing	Multimedia	4	5	147
	Points	19	138	
	Pushball	3	4	
4. Learning	Unique learning	3	4	288
	Meaningful learning	10	17	
	Active learning	20	231	
	Feedback	13	23	
	Multimedia	4	5	
	Attitudes	5	8	
5. Achievement	Challenge	4	9	36
	Recognition	18	27	
6. Rewards	Awards	6	9	269
	Points	20	185	
	Trading cards	4	7	
	Open market	19	68	
7. Immersive Context	Support structures	5	6	170
	3D	20	164	
8. Fantasy	QA myth	6	19	31
	Council members	7	12	
9. Uniqueness	Unique opportunity	9	19	133
	Different from others	9	16	
	QA vs. others	18	98	
10. Creativity	Building	19	129	129
11. Curiosity	End of the game	2	3	28
	Quest status	2	5	
	Secret places	8	20	
12. Control and Ownership	Control	14	38	52
	Jobs	8	14	
13. Context of Support	School vs. club differences	3	9	14
	Username	2	2	
	Trading post items	3	3	

Identity Presentation

Overall, there were 83 coded chunks related to this category. Within QA, what gave identity meaning were avatars, usernames, and homepages. The existence of the individual in the game starts with an avatar:

Researcher: Why do you get excited [in QA]?
Anthony: … Because you get to, like, transform into a ball or, James (one of the avatars) or any person you want …

For most starters of the game, changing and trying different avatars was the first practice they engaged in. After a while, they settled on a specific avatar. Learners primarily chose an avatar in alignment with their genders, consistent with the research findings that using avatars in inhabited virtual worlds is a type of projection or personification of the self (Dickey, 2000). Although some players have viewed the avatar as a chance to explore alternative identities (Turkle, 1995), this was not the predominant use of the participants in this study.

A second cue of identity was usernames. Most of the participants selected a username with which they identified. Users usually persisted more with a username than with an avatar. Donath (1998) expressed that using a name and signature were two of the most important indications of one's identity on the Usenet. In the case of QA, the usernames also functioned as one's signature. Learners used their usernames to sign their Quest responses and e-mail messages. To reveal more of their identities, learners used their homepages:

Researcher: What do you think about your homepage?
Emily: Um, it's cool, I guess 'cause people can learn about you.
Researcher: What are the things that you like on your homepage?
Emily: Um…how you can say what you like and what you can do.

Username, homepage, and the avatar of a person were synthesized into a unified identity. Based on the interview data, expressing such an identity was a reason for them to play and continue to participate in this game. Other presentations of identity were less explicit. For example, the way children greeted each other in the virtual environment and the types of activities they chose to engage. Additionally, as they constructed virtual structures on their virtual plots of land they further expressed personal preference and crafted a presentation of their identity in the space. The important point is that children invested time and energy to advance a particular online identity.

Social Relations

Overall, there were 260 coded chunks of textual data related to this category. Social relations included interacting with others, sharing, showing off, and forming groups. The communication modes in the game, ranging from chatting and e-mailing to telegramming, afforded players the opportunity to form different social relations:

Researcher: Why do you get excited [in QA]?
Anthony: … you get to also chat on [QA] and the words pop above your head and if you need help on like, a quest, you can like, say, if you guys know where desert is, if they know they'll show you. And that's why it's so much fun and exciting.

Another aspect of social relations was sharing. By cooperating and helping other players with various game tasks, participants were well aware of the fact that helping others was a way of showing their experience. While helping others they also enhanced their understanding of these skills in the social context of the game. Participants commented that the existence of so many helpers in the game attracted more players to join the game. When "helping others" became a job in QA that children could apply for, four boys and one girl immediately signed up.

Showing off is a type of self-presentation (Lott, 1977). Bennett and Yeeles (1990) conducted research to uncover children's understanding of showing off. For this purpose, they asked the children what their peers showed off and why they thought their peers showed off. Related to the first question, researchers found references to possessions and associations and references to behavior. Related to the second

question, the researchers found references to intrapersonal psychological determinants and references to interpersonal determinants. In the QA context, players showed off possessions like points, virtual buildings they constructed, and virtual trading cards they collected. They showed these off because they wanted to emphasize their game experience. Therefore, their showing off was for interpersonal reasons.

Observations revealed that children mostly preferred to play the game in groups instead of playing it individually. This is further supported by the fact that they gave a higher number of responses related to social relations than identity presentation. Here the importance of the peer groups needs to be conveyed. More than one fourth of the children interviewed indicated that they chose to play QA either because they saw other kids' playing QA, or heard other kids' talking about QA at the club. This triggered initial interest in trying the game:

Researcher: Why did you join Quest Atlantis?
Luke: Everybody says [it's a] pretty cool game so I wanted to see how good it was.

In his social learning theory, Bandura (1986) emphasizes the significance of observing and modeling the behaviors and attitudes of others. Such peer effects were also documented outside education. For example, Gladwell (2000) documents the impact of peer groups in the way Hush Puppies became a popular shoe brand.

One of the possible choices an individual could make in QA was to sign up as part of a larger group of Questers in a common guild. Over half of the children signed up for a guild, even without a firm structure for the guilds. This supports the notion that players wanted to be a part of a social group. Membership in this kind of group is considered a major reason for why many people remain in multi-player games even after they finish exploring the game world (Sellers, 2002; Steinkuehler, 2006).

The secure environment provided by the game had a very important role in nurturing all these social relations:

Researcher: So what are the things that you like on your homepage…?
Anthony: …you can see the links. Like, if somebody is saying something bad, you can report on them…

QA provided flexibility for social relations while providing security. For example, learners were able to type anything in the chat area as long as what they wrote was not against the rules of the game community. In some other kid-friendly games, players do not have this flexibility and they need to chat by using a point-and-click system that lets them talk with other players by selecting canned phrases from a preset menu. Such a restrictive system in QA might weaken social relations in the name of security. In educational computer games, a secure environment should be provided to nurture the social relations, not to limit it.

Playing

Overall, there were 147 coded chunks of data related to this category. Learners considered QA as a game. Multimedia elements, points, and the pushball game contributed, to a great extent, to the game aspect of QA. Some other categories, like immersive context, creativity, or fantasy, were also considered as play elements.

Davies and Crowther (1995) point to the short term motivational effects of multimedia use in instructional products. While the novelty of multimedia elements may provide a short-term incentive to engage with the product, this does not ensure that students engage in the content and benefit from these elements towards learning. For this reason, using Herzberg's (Herzberg, Mausner, & Snyderman, 1959) notion, they regard the multimedia features as hygiene factors; i.e. the presence of them does not motivate, but their absence demotivates. However, the use of multimedia elements in QA showed the opposite; graphics, sound, and animation provide motivation by making the product more game like.

For example, the presentation of the back story through a cartoon-like animation contributed to the gameness of QA and at the same time consolidated the understanding of the fantasy, which is also a motivational category itself. Moreover, the audio narration of Quests and the option for Questers to hear the narration of the Quest texts in addition to being able to read them positively affected learning. This especially applied to those many learners who disliked reading or had difficulty with reading. The redundancy of narration and text together seemed to enhance learning, as suggested by Lee and Boling (1999), as evident in the following comment from one of the children:

Researcher: Tell me about activities you don't like to do in Quest Atlantis.
Tyler: To read the story thing. When you try to do the quest. But now I just, my friend [Mark], he just taught me how to make the words read it to me.

The use of points in QA added to its gameness. This is probably because most computer games include some kind of score keeping mechanism. Therefore, when learners noticed this mechanism in QA they perceived it as a game.

The third factor that makes QA game-like is activities such as the pushball game. These kind of games make the learning environment more interactive. In this way, in addition to inhabiting the game space, users can also interact with the objects in it. In the pushball game, players can interact with a large ball. When they score, the numbers on the scoreboard changes; therefore, they impact the environment. In a similar approach, Corbit (2002) utilized such an interactive game in a virtual world designed for teaching about science. Five of the children interviewed in this study were frequently observed playing pushball. This balancing of entertainment and educational activities has been central to the success of the project as an academic play space that meets the needs of children.

Learning

Overall, there were 288 coded chunks of data related to this category. While the components of multimedia elements, points, and pushball make QA game-like and make the learning fun, the fun part also comes from the learning itself. These Questers voluntarily worked on 125 Quests, all of which went through a process in which they were required to revise and improve their work. Given that children were free in this after-school environment to do whatever they wished as opposed to children using QA in school as required by a teacher, their voluntary choice to complete this many academic Quests was indicative of motivation.

When children submit Quests, they are then reviewed by a staff member posing as a Council member, and frequently the reviewer requires the child to revise the Quest if one wishes to receive credit. This feedback mechanism plays a major role in the Questers' learning process in addition to meaningful learning, active learning, and reflection. Dewey (1916/1966) points to the importance of trial and error in experiences; learners simply do something and when they fail they do something else until it works. In traditional learning environments this phenomenon is not recognized and learners are expected to perform above a standard in their first trial. Then their performances are graded and that experience is considered to be concluded. On the contrary, an experience that is improved over time seems to encourage learners to come back:

Researcher: So, you like questing, you like the council…and what else can you tell me?
Kevin: Yeah. Um also, when I make a mistake, I always like that because I like to read the letters that the council sends me if I made a mistake on my quest. I like to read those a lot.
Researcher: You like their feedback?
Kevin: Yeah.
Researcher: What they like and what you can improve on?
Kevin: Yeah. I like to read that 'cause it makes me feel like I could get better at doing it.

It is apparent that learners enjoy learning through a game that educates them. Therefore, it can be suggested that play is an important element for learners and it should be combined with meaningful learning opportunities that require active participation to motivate them towards sustaining and completing these activities.

A learning approach that eliminates memorizing and is based on purposeful action and experience appear to be part of what makes learning meaningful in QA in that many of the children interviewed described their Quests as meaningful activity:

Researcher: If you compare Quest Atlantis with courses at the school, or with lectures, what do you think? Or with tests?
David: Tests? I think Quest Atlantis is a more learning thing. Because it teaches you about life, it teaches you about how you can treat others and about your neighborhood, what you can do, pick up trash and stuff, what you can do in the world when you get older instead of just teaching you. It still teaches you to something, like, to go on the web and learn about an artist. But, school doesn't teach you that kind of stuff.
Researcher: What do you think you learn at school?
David: Umm, I learn basically math and stuff like, writing stuff down and sentences. Stuff like that.

Learners in QA are provided learning opportunities that do not require memorizing. The Quests that they undertake still ask for disciplinary content knowledge; however, this knowledge is already provided to the learners through various resources. Accomplishing these Quests involves processing knowledge in a substantive manner like researching community problems, examining current events, conducting environmental field studies, writing autobiographical anecdotes, developing real-world action plans, producing advocacy media, and interviewing families and friends. Therefore, the materials are usable in learners' lives and they have meaning in the real-world.

One problem in making learning meaningful is the difficulty of doing so for many learners at once (Langer, 1997). This problem is overcome in QA by the diversity and flexibility of the Quests. For example, to accomplish a specific curricular goal, multiple Quests are offered to learners and in the after-school context they can choose which ones they wish to complete. Learners can choose one of these based on their experience, interest, or frequently because someone else completed this particular Quest. Bruner (1973) proposes that for education to be relevant to the learner, it should concentrate more on the unknown and be somewhat speculative. The learner should use the known and established for extrapolation. This philosophy requires migrating from being a "knower" to being a "seeker." Knowers value declarative statements and passive learning. Seekers, on the other hand, perceive them as an opportunity for speculation and doubt. In QA, the Quests encourage multiple views and emphasize that there are no right answers to a specific problem and they are presented as problems to be investigated rather than activities to be completed for a grade. This, in turn, discourages learners from providing static information and encourages active participation. The learners do not just read a problem and try to give a right answer to it. Instead they consult the resources to link their knowledge and provide sound responses to Quests from their perspective. Being a seeker in this process makes the learning active:

Researcher: How is [QA] different from the activities you do at home or at school? Like homework? Or other educational activities or games? Anything you can think of.
John: Yeah. Well, it's definitely different from homework. It's learning but it's fun learning. It's not just like, 'sit down and write' kind of learning. It's where you have to go and get stuff and find stuff. It's fun.

While emphasizing the importance of experience in learning, Dewey (1938/1963) points to the properties of that experience. It is the continuity of experience that nurtures learning. Continuity of experience suggests that the results of previous experiences are carried over to later experiences. Dewey (1916/1966) states that reflection, "the discernment of the relation between what we try to do and what happens in consequence" (p. 144), in experience is important in providing this continuity.

While reflecting on an experience, connections are established between what is done and its results. If the reflection part is separated from the active doing phase, the meaning and continuity of an experience is lost. Each Quest response in QA requires such reflection from the learners. Specifically, answering the Quests involves thinking about the following three reflection questions: 1) how does your response meet all the goals of the Quest? 2) what did you learn about the topic and yourself from doing this Quest? and 3) tell the council (of Atlantis) how your response helps the mission of QA. By answering these reflection questions, learners make their experience explicit. The experience is explained and understood. They discover the relationships between what they have done and the consequences of their actions. In this way, the whole experience is unified.

Achievement

Overall, there were 36 coded chunks of data related to this category. Most children liked completing the Quests. One of the main reasons for that is they perceived the Quests as a challenge. Observations, coupled with an examination of the Quests chosen, suggest that favorite Quests were the ones that were more challenging. The Quests which were difficult to find, which required collecting more information from resources, and which took more time to complete were the challenging Quests. Here is how one Quester defined Questing as a challenge:

Researcher: How is [QA] different from the Cartoon Network website?
Anthony: On Cartoon Network, there are so many games and on Quest Atlantis there's hardly any. All you can play is follow the leader or chase…
Researcher: What about questing?
Anthony: Questing is…not really a game it's…actually a challenge. It's kind of a game, but kind of not…

Likewise, activities like building and finding secret places were other challenges in QA. With these challenges some of the participants recognized that their skills and knowledge levels were improved. They enjoyed the achievement of overcoming these challenges:

Researcher: What is the most exciting thing you have done in Quest Atlantis?
Emily: Like, whenever I got the idea that I could make a party room, and everyone started coming to my house and looking at it. It really made me feel good.

Among the game challenges, helping the fictitious QA Council restore their lost knowledge emerged as a motivator for completing curricular tasks, at times taking precedence over getting points:

Researcher: Without the points, would you still do quests?
Mark: Yeah.
Researcher: What is the reason for that?
Mark: So you can help those people to build back their town.

The points were also an indicator of Questers' achievement. Points were used as a way to track one's development in the game. Since the points were accrued after completing educational tasks, ownership of more points meant further experience and development. This was evident in conversations among the Questers. For example, they differentiated between their overall score and their points available for spending and they called their overall score "experience points." Further, a few of them indicated the level they had achieved suggesting that the points and levels were perceived as an indicator of development and status. With points, their successes for handling challenges were recognized within the game:

Researcher: What do Quest Atlantis points mean to you?
David: A goal, because I did something and I got some points that I can spend. And I did a good thing so I get credit for it.

Some users expressed that they felt that they had done a good job in completing Quests, specifically with tackling challenges. Therefore, they wanted to celebrate their effort and accomplishment with an object. For some, this was just keeping the points and looking at them. For others, it was getting some trading cards or another QA store item:

Researcher: … Why do you care about those cards?
Amy: I care about them because, it's like, when you are working in a job, when you get your first paycheck, you have to go out and buy something with it. You are so proud of yourself because, that was your own money that you used to buy it. It's the same with if you use your own points to buy it. And it's really special.

Rewards

Overall, there were 269 coded chunks of data related to this category. In QA, the rewards are both materialistic and non-materialistic. Among the non-materialistic rewards are awards, points, and social approval. Among the materialistic rewards are items in the virtual trading post like trading cards, Internet time, pencils, rulers, and t-shirts. The availability of both kinds of rewards gives learners choice options for the outcome of their activities.

Awards are symbolic cups or trophies. There are seven kinds of awards in QA: health award, creativity award, agency award, diversity award, kindness award, environment award, and community award. These are given to the Questers after they exhibit exemplary behavior. These awards are displayed on the Questers' homepages. Although these are labeled as "awards" by design, participants also labeled them with different names such as trophy, metal, and badge.

Although there were varying opinions on the points, many children perceived them as an extrinsic motivator and completed the Quests to get some items. For example, one Quester described "the stuff" he could get as a reason for coming back to QA:

Researcher: Which parts of Quest Atlantis keep you coming back to Quest Atlantis?
Eric: Probably the points and getting stuff. Mostly.

The available items they could earn were cardholders, Internet time, QA pencils, QA t-shirts, QA trading cards, QA rulers, and virtual land to build on. The place they can get these items is called "The OTAK Trading Post." It was observed that some kids checked its content daily to see if anything new was added. This is how one Quester described the trading post:

Researcher: What do Quest Atlantis points mean to you?
Anthony: The points mean that, uh, if you get enough points you can either get some cards, or if you even get enough and go to this one special place in the trading post, you can get Internet time, a pencil, just basically anything that gets listed there.

Among the material items, the QA trading cards emerged as one of the most valuable items kids wanted to obtain. Each village has cards that introduce famous people related to the theme of that village. For example, Jacques Cousteau is a famous ocean researcher and therefore he belongs to Water Village in the Ecoworld. In addition to a hand-drawn picture of the famous person, these colorful cards also include information about the person and less meaningful numbers and symbols so that Questers can assign them their own meanings as they trade cards with each other. A participant, who was observed as excited about collecting the QA cards, indicated that the QA cards also had educational value over their visual appearance:

Researcher: Why are you excited about cards?
Amy: Because I like getting new other people and it's just fun, because I usually don't collect cards like Pokémon, they are all boring. This is cool because like a famous person like Martin Luther King

Jr., so you don't know who he was, like it tells about him. And I didn't know who [Florence] Nightingale was, and then I have her card and I know about this person.

It is not just the method of the distribution that is different from traditional learning contexts but also the nature of the materialistic rewards. These rewards have educational elements to a certain degree. QA trading cards are the best example of this educational element. While trading cards are extrinsic rewards, they are also educational at the same time. Therefore, they help in the creation of a recursive learning cycle.

One very interesting point about the rewards was the emergence of a liberal open market in QA. In this sense, learners perceive the QA points as a kind of exchange currency and use them for meaningful transactions. The points created a system through which they could make exchanges. For example, when they referred to getting the items from the trading post, most of them labeled that process as "buying" something. They indicated that items "cost" a certain number of points and labeled some items as "too pricey" or "expensive." When they did not have enough points to buy a certain item they said that they could not "afford" it. When there was no land in the Questers' building area, they said the Questers' building area was "sold out." There was even inflation in the game. They complained when the cost of a plot of land went from 6 points to 10 points. Similar to saving money in a bank, they saved up their points to buy items that were costlier. Overall, this exchange system seemed to create an order within the QA life. They completed the Quests, got points in return, and either saved those points for the future or spent them on different items. They adopted this system so firmly that one of them questioned how some structures of QA would function without such an exchange system:

Researcher: So if there were no points for doing quests would you still do the quests?
Kevin: Yes.
Researcher: And what would be the reason for doing that?
Kevin: So I could help rebuild the Arch. Also, if there were no points…well, I have one question. If there were no points, then how could you buy land?

Immersive Context and Fantasy

Overall, there were 201 coded chunks of data related to these categories. The immersive context of QA is provided by its support structures, 3D technology, QA myth, and council members. The support structures include QA posters, the QA activity chart, QA trading cards, the QA comic books, and a QA novel. These support structures extend the gameplay beyond the computers making the experience part of life. The QA opening video, comic books, and novels present the backstory of the game in alternative forms. This assures that the fantasy element of the game will be understood by many learners with different approaches to learning. This is how one of the learners used these support structures to learn about doing Quests:

Researcher: Can you describe for me which times [Quests] are hard to complete?
Luke: For example, I didn't know how to do it. But I figured it out.
Researcher: How did you figure it out?
Luke: The magazine gives you sometimes little clues.
Researcher: What kind of magazine is that? Are you talking about the teacher's manual?
Luke: No, the Quest Atlantis book.

Although the game was on a two-dimensional monitor, they talked about experiencing a space on the computer screen. In this space they were able to walk or run around and interact with other players through their avatar representations. Some called the feeling of being in this space as being "digital" some labeled it as the "virtual space." All in all, they felt as if they were part of this environment:

Researcher: Why do you think [QA] is fun to play?
Sarah: Because, like, you get to do stuff, something like that, you don't get to do other things in there. It is like you are inside the computer.
Researcher: How is Quest Atlantis different than other games in the lab?
Sarah: It is different, because you get like, it feels like you are inside of it…

The visual representation in QA contributes to its immersiveness to a great degree. It is the possibility of navigation in 3D that feeds this immersive feeling. There are three forms of representation in semiotics: iconic, indexical, and symbolic (Woolley, 1992). A photograph of a house is an iconic representation, because the image carries some relation to the house it depicts. A house is the index of family, because it is a sign that carries a causal or sequential relationship to what it represents. A symbol has an arbitrary relationship with what it presents, like the word "house." If one were to define the navigation in the 3D space with one of these three semiotic representations this would not be possible, because it exceeds these three forms of representations. The experience of navigation in 3D itself is the representation. It does not require translation. A house in the game is a house which can be inhabited. Overall, 3D is motivating because it is naturally intuitive to players and the experience does not require representational translation. Tüzün et al. (2009) documented that such a 3D context is not only motivational but also functional by providing the affordances of exploration, interaction, collaboration, and immersion.

Although the feeling of the space in a computer game is natural for children and is motivating, a space is a space and nothing more than that. For example, remove the rides from an amusement park and you will have a space that loses its attractiveness. Similarly, what make the QA space attractive are the worlds, villages and structures that fill this space:

Researcher: What is the reason for that? Why do you like culture world?
Tyler: Because there are all these different sculptures and stuff around …

Furthermore, these fundamentals are not scattered in an arbitrary and loose manner but converged through a fantasy story: The People of Atlantis lost their knowledge and demand the help of earth children to restore their knowledge. Therefore, children are attracted to the game space, which is a matrix between Atlantis and Earth, and help Atlantians in restoring their lost knowledge by accomplishing Quests in the villages and the worlds:

Researcher: Can you explain more about why you complete quests?
John: … I want to help the Atlantians …

Herz (1997) argues that the computer game "Doom" was a very successful game not just because it used 3D technology, but because it also invoked the emotional feeling of horror in its players. Similarly, in QA, the altruistic motive of helping the people of Atlantis adds an emotional layer to the gameplay.

When reading a fictional novel or watching a fictional movie, the audience experiences two paradoxical feelings. On the one hand, most of the characters, places, or the stories described in novels or movies do not exist outside the pages of the novel or the screen of the movie theater. On the other hand, once the fiction is acknowledged, characters, places, or stories inside novels or movies are thought to have some sort of reality. When the novel or movie is over, the audience does not believe the characters, places, or story ends with it (Woolley, 1992). Likewise, the backstory of Quest Atlantis and its characters are considered as real by its players to a surprising degree. The possibility of the players' communicating with the characters of the story strengthens the realism of the fantasy:

Researcher: Are they hard to complete? The quests?
Ryan: It kind of depends. Some are hard and some are easy. One of them, it won't get accepted and I got a ton of help on it.
Researcher: Oh really?

Ryan: Yeah, the person I was with, we went to all this extent making a PowerPoint presentation, and then Unidad [a council member] sent back a message saying, 'Oh, I like the pictures and everything but it needs more information,' and we took all the information we could find on the Internet.
Researcher: Did she mention a specific kind of information? What kind of information she was looking for?
Ryan: No. She said it was all good except I needed more information.

In the game design, there are other opportunities to interact with the council members in addition to Quest feedback. For example, when they break the rules they might be asked to send an apology. Here is how a Quester communicated with a council member when he used inappropriate language while chatting:

Subject: Apology
Dear Alim, I am very sorry for calling people dummies. I will not do this again.

Uniqueness (Dissimilarity)

Overall, there were 133 coded chunks of data related to this category. Although the dictionary meaning of the word uniqueness is "without an equal or equivalent" ("Dictionary.com-uniqueness," 2004), what authors are trying to conceptualize here is not the superiority of QA. Here the primary emphasis is the dissimilarity of this educational game from other educational games. Other educational games are also unique with their own characteristics, such as different learning opportunities, game characters, and such. For example, computer games on the Cartoon Network Web site were also unique to the interviewees of this study for the reason that they contained characters (such as Pokémon or Samurai Jack) and stories not available in QA, other games, or software. In terms of QA, the characteristics that made it dissimilar from other games were the opportunities it provided in the areas of learning, information technology, socializing, and creativity.

Half of the Questers interviewed perceived QA as a unique game which allowed them to do different tasks. The opportunities provided by the game were scattered among learning, using information technology, socializing, creativity, and the local context. This is how one Quester talked about these learning opportunities:

Researcher: Do you think you would not be able to learn this without Quest Atlantis?
Jason: Yeah, you probably could learn it. But maybe you wouldn't because you wouldn't get the chance.

Another Quester indicated that QA provided content and subject matter that was not taught at the school:

Researcher: For example, at the school, let's suppose you have Quest Atlantis. Would you learn through Quest Atlantis or would you learn through worksheet activities?
Kevin: I'd do both. 'Cause sometimes at school there's stuff that they don't teach on Quest Atlantis and on Quest Atlantis, there's sometimes stuff that they don't teach at school. So that's why I'd do both.

Overall, the synergy of all motivational elements contributed to the emergence of a unique game that is perceived by the learners as different from others. As an academic play space, QA offers students more than a game, more than traditional curriculum, and more than some list of rules. It unifies the ideas of learning, helping, and playing in ways that were not observed with other activities in children's lives (Barab, Arici, & Jackson, 2005). Observations of these children suggest that this collective experience is unique in terms of other activities they experience. This uniqueness seemed to carry much cache in terms of its appeal to children.

Creativity

Overall, there were 129 coded chunks of data related to this category. Creativity is defined as "the tendency to generate or recognize ideas, alternatives, or possibilities that may be useful in solving problems, communicating with others, and entertaining ourselves and others" (Franken, 1998, p. 354). According to Franken (1998), people are motivated to be creative because they need novel stimulation, they need to communicate their ideas and their values, and they need to solve their problems. It has been seen in most of the Quester interviews that children said that they like "creating stuff;" they like to be creative and they like to convert their ideas into reality.

Creativity requires an environment that is conducive to being creative. In this environment one must be challenged, be free, and have the time and resources that help with being creative (Fox & Fox, 2000). QA provides these opportunities to its players. First of all, there is a separate game world, named "QVille," devoted to building activities. Once players rent a plot of land, they are free to build anything they want on this land. The challenge comes from the other builders in the neighborhood; by observing others' building activities they improve their own structures. This is how one Quester explained how the game allowed them to build with no constraints hindering their creativity:

Researcher: How is Quest Atlantis different from other things you do on the computer? You mentioned some other games. How is it different from other games, for example?
Kevin: Because they are…on other games there's no building stuff that you can build by yourself. Like, in Civilization II, you can only put stuff and you can only go to view and see it. You can't get around, because they only put it in certain place and I don't like that. But, in Quest Atlantis you can put your stuff in certain places and change it around and stuff. That's what I like about Quest Atlantis.

The building activities in QA not only allow spatial creativity but also imaginative creativity. For example, builders construct hotels, restaurants, and galleries for role-playing. Furthermore, some of them share these places with other players and assign one another rooms and roles in them. The literature supports that this kind of creative imagination can increase children's cognitive and social skills (Singer & Singer, 1998). For example, an interesting collaboration emerged between two club Questers. One of them built a huge hotel building and the other built a restaurant. The two together designed these structures such that people would lodge in the hotel and eat in the restaurant.

It must be noted here that the building activities in QA were not structured around a curricular goal, and therefore it was in free play mode. In this free play mode, most of the players started their building activities with a house although this was not dictated or constrained. In traditional text-based shared environments, like MUDs and MOOs, the ability to build one's own room in the textual environment has been identified as crucial to the success of these environments (Schroeder, Huxor, & Smith, 2001). All participants at the club who claimed a piece of land and built on it kept on paying the rent for it and building on it. These data suggest that the activity of building in the virtual space is a strong motivator for the learners to come back to the learning environment. Similarly, Osberg (1997) and Osberg et al. (1997) found that virtual world building activities were motivating for learners. The aforementioned popularity of creative building activities in QA was an early indicator of the impending interest towards construction-based sandbox digital environments such as Minecraft (Josef, 2016; Nebel, Schneider, & Rey, 2016), which is massively popular among children in the last decade.

Although building activities were a significant creativity form in QA, one of the Questers commented on another creativity option. He suggested that Questers could create their own avatars:

Researcher: What can be added, for example, to make you get excited about that and whenever you are at the club, you will always want to come back [to QA]?
Mark: You can make your own dude (avatar) or something. Your guys that you can walk around and stuff. Like, you can build your own guy and walk him around.

Based on this suggestion, the QA team developed an interface called the "Avatar Machine." Using this interface, Questers are able to "make" their virtual persona.

Another opportunity for creativity was in terms of how participants responded to the Quests. They spent much time choosing which Quests they wished to do, and then there was latitude in terms of how they would respond. For example, in one Quest that focused on building a scrapbook about one's community, students had a great deal of leeway in what information they used in their scrapbooks. We are reminded of one day in which a group of Questers were busily cutting out images from leftover magazines, with one local staff member walking in and stating, "When did the computer room become an art room?" When they were all completed, students took images of their work and uploaded them as part of their Quest responses. Other Quests provided similar opportunities for creativity as participants chose how they would respond to the particular Quests.

Curiosity

Overall, there were 28 coded chunks of data related to this category. There are two types of curiosity in QA also identified by Keller (1987) and Malone and Lepper (1987): Sources that address the senses of learners, and sources that address the cognition of learners. Secret places in game worlds and villages provide sensory curiosity and this is the prevailing source of curiosity in QA:

Researcher: What makes Healthy World special?
John: Healthy World…it's got a lot of secret places. That's what I like about a world.

The difference of this kind of sensory curiosity from the one described in the traditional sense needs to be examined. For Keller (1987) and Malone and Lepper (1987), sensory curiosity refers to the availability of color, sound, animation, and graphics. In QA, sensory curiosity reveals itself in the form of exploring. Players explore the game space to see what is available and also to find the secret places in it. Therefore, this type of curiosity is more than sensory and it blends into cognition. Players want to know what is available in the space and where the secret areas are.

Waiting for the feedback of Quest responses keeps learners in suspense and this is a type of cognitive curiosity. When a Quester submits a response for a Quest, the status of that Quest response is marked by the system as "pending." This means the Quest response was submitted and will be reviewed by a mentor soon. When it is reviewed and accepted, its status changes to "accepted." When the reviewer concludes that the response needs revision, the status of the Quest response changes to "revise." The status of all Quest responses can be reviewed by Questers on the "Quests" part of their homepages. During observations, two Questers (they were also interviewees) asked at separate times about the time it took to review the Quest responses. They stated that they were both curious as to whether their responses were accepted or not. Also, it was observed that after logging on to the game, most kids went directly to the "Quests" page to see the status of their pending Quests. However, if the learners do not obtain the feedback in a reasonable amount of time, this type of curiosity might end up with detrimental effects. Their expectation for the review time was around two days:

Researcher: What is the least exciting thing you have done in Quest Atlantis?
Rebecca: When it is like still pending, it is not very fun, because you want to know if you got it right or wrong.

Another source for cognitive curiosity is seeing the end of the game. In traditional games "Game Over" is recognizable by anyone who has some video game experience. Similarly, the purpose of adventure games is to solve a chain of puzzles to reach the end of the story. Since QA had a back story and it was similar to adventure games, they wanted to see the ending of the game:

Kevin: …I'm always anxious, I'm always curious about what happens when you beat Quest Atlantis. 'Cause, like, when you do all the quests or you build the [wisdom of the arch] …

Researcher: If there were no items in the trading post would you still do quests to restore the lost Arch of Wisdom?
Kevin: Yeah. I would do quests for anything.
Researcher: What would be the reason for that?
Kevin: Because, um…I wonder what it looks like when it's all rebuilt. And um…I'm so curious about that.

However, the curiosity of seeing the end of the game has been less emphasized by learners among other sources of curiosity, which suggests that the curiosity sources related to the process of the gameplay is more engaging than the sources related to the product of the gameplay.

Control and Ownership

Overall, there were 52 coded chunks of data related to this category. The literature supports the importance of control over one's behavior for continuous motivation. For example, De Charms (1968) coined the terms "origin" and "pawn" to distinguish between activities that are accomplished freely and activities that are forced. When a person perceives that one's behavior is determined by a person's own choosing, the person is an origin. When the person perceives that behavior is determined by external forces, that person is a pawn. According to De Charms (1968) when people feel that they are the origins of their own actions this is a powerful motivational force directing future behavior.

Likewise, control over the game is a basic tension for learners. This tension of control is sensed in many dimensions. For example, they wanted to work on Quests that were not allowed. They wanted to use telegramming as a communication mode that was not supported by the designers. They wanted to use objects that were not available to them in their building activities. They wanted to buy their land instead of renting. And they wanted to have more than just one avatar choice in the ocean world. This tension creates a real dilemma for game designers. While designers need to provide playing and learning opportunities within the game, learners must have control over these opportunities so that they come back to this environment. In a similar fashion, the designers of Habitat, the first networked multi-user virtual world, recognized the importance of giving control to the users. However, they struggled on the level of power that should have been given to users (Morningstar & Farmer, 1991). Their survey of the users of Habitat revealed that there were two kinds of users: those who valued anarchy, and those who liked management. A Quester who also played the game at his school stated that he was more likely to complete the Quests when he had control over the game:

Researcher: If you compare the implementation of QA in your class and at the club, what are the differences and similarities?
Thomas: Well the club, you get a lot more freedom. At school it is kind of do this, do that. You can still talk and stuff but at the club you can just do whatever you want. Sort of … you know… talk to people, do quests. So at the club, I think I am most likely to do a quest or something.

When the control of the game was taken from them, the game was no longer enjoyable and became more of an obligation:

Researcher: Can you tell me about activities you don't like to do in Quest Atlantis?
John: Uh…well, there's really not that many. Its only when we're like, say, if you want to do something else on the computer and you're forced to do Quest Atlantis, that's the only real time that I really don't want to do Quest Atlantis. But that's the only thing.
Researcher: What is the difference between those times and times when you don't want to do it?
John: Because there are certain times that I really want to, say, check out my orbit zone [on the Cartoon Network Web site]. Or like, check out e-mail …at those times Quest Atlantis is just not much of an enjoyment to me. It's more of like, a must.

The conceptualization of control in this study is in accordance with Malone and Lepper's (1987) taxonomy of intrinsic motivation in that both recognize the importance of control. Here, however, the meaning of "control" was expanded to include both the tension of players and the dilemma of designers. In Malone and Lepper's (1987) taxonomy of intrinsic motivation, control is defined with three characteristics: contingency, choice, and power. The characteristic of contingency is acknowledged, and is apparent and requisite for control. Without user involvement or response, control cannot exist. This basic level is accomplished in QA by allowing players to direct their avatars, input Quest responses, and change information on their homepages. However, this basic level is not sufficient to draw players back to the game. What attracts users back to the game in terms of control is the plasticity or adaptability of game identification. In this sense, control is the ability of players to stretch or continually adapt game elements and rules. When learners accomplish this kind of control over the game, their sense of ownership over the game seems to increase. As a result, they come back to the game more often. An example of this is the creation of jobs. Within the game, Questers with certain experiences can apply for different jobs. These jobs include working at the help desk, working as a chat monitor, greeter, tour guide, engineer, link checker, and usability tester. When they complete the requirements of these jobs they earn points. There was no plan on the side of the design team to add such a participant structure to the game. However, the players pushed the game in such a direction to include it. Apparently, providing this kind of control requires interplay between players and designers.

Since the QA jobs idea came from the Questers, they tended to perceive jobs more like a responsibility instead of a chore. The initial user interface for the jobs had some usability problems. As a result, when they read that the "prior points" requirement for a job was twenty, they thought that they had to spend twenty points. For this reason, they saved their points towards getting a job. What is incredible about this is that these kids were willing to spend their points for working in the job even though they had to spend a lot of effort doing the job, which highlights the power of sharing the control with users.

Context of Support

The twelve categories mentioned so far impact the motivations of learners playing educational computer games. However, there is another category that impacts these twelve categories. This category is the context in which the educational game is played and therefore in which learning takes place. Other researchers have also recognized that motivation is influenced by the context in which learning takes place (e.g. Jarvela, 2001). There were three interviewees who played QA at their schools in addition to playing it at the club. With the help of data related to their QA use in their schools, three contextual differences emerged in terms of motivational categories. These differences were in the areas of control, identity, and rewards.

Since learners naturally need to participate in many activities, they have fewer opportunities to participate in the game at school. For this reason, a typical learner using QA at school spends one to two hours per week. Because of this limited usage, it appears that teachers strictly control the QA implementation to assure the experience is completed by all learners. For example, in one of the interviewees' classroom the teacher synchronized Questers' participation so that everybody was doing the same activity at the same time. Even after this kind of strategy, learners ended up with uncompleted Quests. A description of learners using QA at their schools revealed frustration over this control. The learners indicated that with increased control on the teachers' part, and decreased control on their part, their motivation to participate in the activities tended to decrease. At the club, learners had more time to participate in the activities. Also, their participation was less controlled by outside mentors.

A second contextual difference between the club and schools was in the assignment of usernames. At the club, Questers were free to pick any username they liked. In schools, some teachers tended to assign usernames to Questers, usually some combination of Questers' first names, last names, and some numbers. This is understandable from the viewpoint of teachers because this kind of strategy might help teachers with the organization of their classes. However, doing so may harm the identity of players and at the same time removes this empowering feature.

The third contextual difference was in the diversity of rewards. The implementation of QA at the club included many more materialistic items in the trading post than the school implementations. Possibly, the addition and distribution of these rewards by teachers has been neglected because of time constraints or they were in conflict with the local culture. The culture, values, and norms of the context of the game implementation can make a difference in providing the motivational categories. More research needs to be done in broader contexts in order to illuminate the extent to which the implementation of motivational categories differs in other contexts.

DISCUSSION and IMPLICATIONS

Traditionally, research regarding motivation in computer games has characterized motivation in a smaller number of intrinsic categories, usually challenge, curiosity, control, fantasy, and choice (Cordova & Lepper, 1996; Malone & Lepper, 1987). A broader range of categories that motivated children in QA emerged as a result of this study. The study revealed a large set of interactive processes and proposed various categories to provide a broader explanation of human motivation.

Bandura (1986) acknowledged that "any theory of motivation must consider a large set of interactive processes if it is to provide an adequate explanation of human behavior" (p. 243). However, most motivation studies have focused on piecemeal factors to explain motivation, and traditionally theories of motivation have focused on just one, or a few, variables. The findings of this study point to multiple elements that contribute to one's motivation and these elements collectively constitute the construct of motivation. Ignoring most of these elements, and the interactions between them, while focusing on a few of them, could produce incomplete research results and possibly invalid conclusions. As the results of this study suggest, motivation is distributed among many elements of the context.

The identification of many new categories such as identity presentation, social relations, playing, learning, achievement, rewards, immersive context, uniqueness, creativity, and context of support was, in part, due to the unusual context of QA for learning. For example, identity presentation emerged as a motivator because of its affordance of allowing users to create and customize an avatar in this context. An immersive context emerged because of the support structures and the 3D engine of the game. Similarly, additional motivational elements emerged in part due to the unique socio-technical structures making up the game, shedding light on the importance of context. "One's notion of possibilities is very much constrained by actual particulars" (Barab, Arici, & Jackson, 2005, p. 20). While Malone and Lepper's (1987) intrinsic motivational categories were useful in terms of the games they examined, designers need to acknowledge the restricting effects of particular contexts and products and need to consider how the particular aspects of a situation limit or facilitate the potential for motivating learners. The results of this study, in addition to expanding the conception of what motivates learners, further suggests that motivation may be contextually bound to the interactions possible due to the constraints of the context under study. Such a situative view challenges the notion that there exists a core set of internal categories that motivate all human action, instead suggesting that there are a number of factors and that different situations may engage more or less of these factors.

Considering that what motivation means and how it can be provided in a learning context will differ depending on the kind of learning philosophy one adopts, the findings of this study align most closely with the situative view, which acknowledges the individual-environment interaction. Instead of the clash of outside vs. inside, this view emphasizes the reciprocal character of the interaction through which individuals, as well as their cognition and motivation, are considered to be socially and culturally constructed. The core shift in this perspective is from the individual as the unit of analysis to the larger context through which one chooses to engage or not to engage in a particular activity (Barab & Plucker, 2002). From this perspective, neither individuals nor environments are unmotivated or even

maladaptive, but particular activities are motivating with respect to how it fits with individual-environment.

This research on what motivates learners to participate in QA has provided us a host of motivational elements learners engaged in QA and that could be utilized by other educational games or technology projects. In QA, gameplay seems to be an important factor for providing sustained motivation over time. Many designers incorporate multimedia elements such as rich graphics, audio, video, animation, and color into games to provide motivation. It is true that these elements provide short-term novelty to motivate participation in educational games. However, once consumed, they do not keep the learners attached to the learning environment. For this reason, the gameplay must include other elements such as the thirteen categories that were identified in this research. Noticeable in Table 1 is the thickness of the social relations motivational category, which includes activities such as interacting with others, sharing, helping, and competing. The magnitude of the social relations category in the findings is parallel to the popularity of MMORPGs.

Research studies show that there is a decrease in school children's motivation as they progress through grades over time (Harter, 1981; Lepper, Sethi, Dialdin, & Drake, 1996). Some scholars offered the use of extrinsic rewards as an answer to this question and this issue has created a hot debate among motivation researchers. Early studies conducted in the 1970's by Deci (1971, 1972), Kruglanski, Friedman, and Zeevi (1971), and Lepper, Greene, and Nisbett (1973) claimed the negative effects of extrinsic rewards on participants' successive intrinsic interest in the activities for which extrinsic rewards were no longer available. Another 100 additional follow-up research studies have been conducted and arrived at similar conclusions (Lepper & Henderlong, 2000). Some other researchers, however, objected to this idea and their meta-analytical reviews claimed that such negative effects of rewards occur under certain conditions and, when properly arranged, rewards can be used to increase motivation (Cameron, Banko, & Pierce, 2001; Cameron & Pierce, 1994; Eisenberger & Cameron, 1996). The opponents claimed that these meta-analyses were flawed, the conclusions were incorrect and these opponents came up with their own meta-analyses (Deci, Koestner, & Ryan, 1999; Deci, Koestner, & Ryan, 2001). They claimed, once again, that extrinsic rewards undermined intrinsic motivation.

While there are different viewpoints on the effects of the use of rewards on intrinsic motivation, the findings of this research is that multiple motivators, those that are intrinsic as well as extrinsic, can exist simultaneously for learning. Furthermore, these intrinsic and extrinsic motivators can exist and function simultaneously for the same activity. If "points" in the QA learning context are considered, for example, some of the learners indicated that they completed Quests in QA both to get points as well as to help the Atlantian people. Likewise, they collected points to buy extrinsic items but at the same time points showed their development. Furthermore, points acted as an exchange currency through which learners could make meaningful transactions in the QA context. Additionally, the element of points was perceived as a play element in this context and made the learning fun. In the traditional motivational research sense, one would assume that "points" would function as an extrinsic motivator. However, points in the QA context act as a complex and multi-featured motivator providing both intrinsic and extrinsic motivation.

CONCLUSION and FUTURE WORK

The results from this study are consistent with previous motivational research while at the same time offers an expanded description of what is motivating in the context of games. How these data relate to other games, other environments, or other contexts is not yet known. The data for this study were collected within an after-school context. In this sense, while playing with the educational computer game learners were not exposed to the limitations of traditional school contexts such as strict curricula and

deadlines. It would be fitting to replicate this study in a school context with such constraints to investigate the extent to which the results match or differ. This is one of the ways to complement the motivational categories found as a result of this study.

This study carries the limitations which are inherent in qualitative studies. Among the most important of these limitations are the individual biases of the researchers and the complexities related to the generalizability of results. Since the researchers were members of the QA design team and therefore had substantial control over the design of QA, this study might have been influenced by the perceptions of the researchers. This is exacerbated by the fact that the researchers participated in QA activities in the computer lab of the selected center for more than two years. Therefore, many of the learners at the center had close connections with the researchers. Another limitation lies in the generalizability of the results to other contexts. The unique features of the setting under study, such as the young age group and participation in QA activities on a voluntary basis make it difficult to generalize. In addition, some of the game features, such as the QA being a "multi-player" game, make it even more difficult to generalize the results to all educational computer games. However, many researchers indicate that qualitative research is a way to describe unique social structures, and that "all social structures are unique" and therefore generalizability may not be a norm by which qualitative research should be judged (Schloss & Smith, 1999).

Traditionally, studies examining the motivation of learners in games have typically relied upon quantitative methods, including one-time data collection through surveys. In addition, tasks whose meanings were not strategically aligned with the context were offered to measure motivation in most of these studies. The qualitative methods and the naturalistic context used in this study provided a very different perspective than what is available for understating what motivates learners in computer games. These results offer insight into the relationship between research contexts and theories advanced, and show the importance of conducting research in the context of naturalistic environments for evolving and advancing rich theories of motivation. We agree with Jackson (1996, p. 5) in that "for the most part human beings live their lives independently of the intellectual schemes dreamed up in academe, and that the domain of knowledge is inseparable from the world in which people actually live and act." Future studies should, therefore, consider doing research in naturalistic contexts for producing ecologically valid theories of motivation.

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APPENDIX 1

Interview Questions

1	Why did you join Quest Atlantis?
2	Which parts of Quest Atlantis keep you coming back to Quest Atlantis?
3	How might Quest Atlantis be different in a way that will make you come back?
4	What do you get out of playing Quest Atlantis?
5	What do Quest Atlantis points mean to you? Do you care about getting points?
6	Tell me about activities you like to do in Quest Atlantis.
7	What are your top three favorite activities?
8	Tell me about activities you don't like to do in Quest Atlantis.
9	What are your bottom three favorite activities?
10	What is the most exciting thing you have done in Quest Atlantis?
11	What is the least exciting thing you have done in Quest Atlantis?
12	How has Quest Atlantis changed your life?
13	How is Quest Atlantis different than other things you do on the computer? In the computer lab? In school? At home?
14	What do you think about the Quest Atlantis trading post?
15	Which items are available in the trading post? Do you care about these items?
16	Did you purchase any item from the trading post? Why did you get these items?
17	What do you think about your homepage?
18	What are the things that you like in your homepage?
19	What are the things that you don't like in your homepage?
20	Why do you complete Quests? Are they hard to complete?
21	Tell me about your favorite Quests.
22	Tell me about your favorite worlds and villages.

TÜRKÇE GENİŞLETİLMİŞ ÖZET

Öğrenenler motive olmazlarsa, en zarif şekilde tasarlanmış eğitim yazılımı bile başarısız olur. Bu nedenle, herhangi bir eğitim yazılımının tasarımcısı, öğrenenlerin motive edici bulduğu bir bağlam oluşturmak için çalışmalıdır. Bilgisayar oyunu tasarımcılarının kullandığı stratejileri veya unsurları anlamak, içerik anlayışını ilgi çekici şekillerde destekleyen öğretim bağlamları geliştirmeye çalışan öğretim tasarımcılarına zengin bilgiler sağlayabilir. Eğitsel bilgisayar oyunlarındaki motivasyona yönelik araştırmaların çoğunun yöntemsel eksiklikleri mevcuttur. Bu çalışmanın amacı bu yöntemsel eksiklikleri ele alarak, eğitsel bir çok oyunculu çevrimiçi rol oynama bilgisayar oyununun motivasyonel öğelerini ortaya çıkartmaktır. Yöntemsel çabalar şu araştırma sorusu tarafından yönlendirilmiştir: "İster içsel ister dışsal olsun, Quest Atlantis'in motivasyonel öğeleri nelerdir?"

Quest Atlantis (QA), eğitsel etkinlikleri gerçekleştirmek için 9-12 yaş arasındaki çocukların üç boyutlu, çok kullanıcılı sanal bir ortamda bulunmasını sağlayan eğitsel bir bilgisayar oyunudur. QA uygulamasının felsefesi, uygulama alanlarının her birisi için ortaklaşa bir vizyon geliştirirken, bu vizyonun oluşturulduğu sırada araştırılmasıdır. Barab ve arkadaşları (2004, s. 254) bu süreci "tasarım etnoğrafyası" olarak adlandırmakta olup sürecin amacı "yerel bağlamı dönüştürme gündemiyle katılımcı tasarım çalışmasını içeren etnografik bir süreci takip ederek çoklu bağlamlarda kullanılabilecek bir tasarım üretmektedir."

Araştırma bağlamının seçimi için amaçlı bir örnekleme yapılmıştır. Bunun sonucunda, bu çalışma ABD'de bir Ortabatı şehrinde bulunan bir okul sonrası programında gerçekleştirilmiştir. QA hedef kitlesi 9-12 yaş grubudur. Bu aralıkta programda 346 üye (% 54) bulunmaktaydı. Görüşme katılımcıları bu gruptan aşağıdaki kriterleri karşılayanlardan elverişli bir şekilde seçilmiştir: (a) oyunu en az beş farklı durumda oynayan QA oyuncuları; ve (b) Oyun içerisinde en az üç saat harcayan QA oyuncuları. Bu kriterlere dayanarak, ilk yazar bu görev için öngörülen bir aylık süre zarfında 20 çocukla görüşme gerçekleştirmiştir. Verilerin toplanması için temel olarak görüşmeler, bilgisayar laboratuvarına önem verilerek kulübün farklı alanlarında yapılan gözlemler ve belge analizi kullanılmıştır. Yarı yapılandırılmış görüşmeler, bu çalışmada kullanılan birincil veri toplama yöntemidir. Veri analizi için temellendirilmiş kuramın sürekli karşılaştırma yöntemi kullanılmıştır. Sonuç olarak, tümü araştırma sorusuyla ilgili olan on üç kategori elde edilmiştir. Bu kategoriler şunlardır: kimlik sunumu, sosyal ilişkiler, oynama, öğrenme, başarı, ödüller, çevreleyen bağlam, fantezi, benzersizlik, yaratıcılık, merak, kontrol ve bağlam. Bulgular bölümünde, bu kategoriler hem yerel deneyime (experience-local) yönelik olarak hem de farklı bağlamlarda ve koşullarda motivasyonu analiz eden başkaları için uzak deneyimler (experience-distant) sağlayacak şekilde sunulmaktadır (Geertz, 1973). Bu durum, yerel yorumların önceki araştırma ve kuramlar tarafından bilgilendirilmesinin ve bunlara cevap verilmesinin sağlanmasıyla; ek olarak bulguların sunumunun geniş bir literatür kapsamında bağlamsallaştırılmasıyla gerçekleştirilmiştir. Tek aralıklı 161 sayfalık görüşme transkripti içerisinde 1600'den fazla kodlanmış veri parçası bulunmakta olup, dergi sınırlamaları okuyucuyu yerel hikayelere anlamlı bir şekilde götürmeye engel olmuştur. Bu nedenle, bir kategoriyle ilgili en az bir ham veri parçası paylaşılmakla birlikte 13 kategorinin her birisinin tartışılması her bir kategorinin genel anlamı açısından gerçekleştirilmiştir. Bu çalışmanın güvenilirliğini arttırmak için üçgenleme yöntemi (triangulation) kullanılmıştır. Çalışmada çoklu veri toplama yöntemleri kullanılmıştır: Yarı yapılandırılmış görüşmeler, gözlemler ve belge analizi. Çalışmada birden fazla veri kaynağı kullanılmıştır: QA kullanan çocuklar, kişisel gözlemler ve QA elektronik veri tabanları ile log kayıtlarındaki QA katılım bilgileri. Son olarak, üç araştırmacı sürekli karşılaştırmalı veri analizine katılmıştır.

Bu çalışmanın bir sonucu olarak, QA'de çocukları motive eden daha geniş bir kategori yelpazesi ortaya çıkmıştır. Çalışma, çok sayıda etkileşimli süreci ortaya koymuş ve insan motivasyonunun daha geniş bir açıklamasını sağlamak için çeşitli kategoriler önermiştir. Bu çalışmanın sonuçlarına göre, motivasyon bağlamın birçok unsuru arasında dağılmıştır. Bu çalışmanın sonuçları, öğrenenleri neyin motive ettiği

konusundaki anlayışı genişletmenin yanı sıra, bir araştırmadaki bağlamın kısıtlamaları nedeniyle motivasyonun kısıtlamalar doğrultusundaki potansiyel etkileşimlerle sınırlı olabileceğini ileri sürmektedir. Ödül kullanımının içsel motivasyon üzerindeki etkilerine ilişkin farklı görüşler olsa da, bu araştırmanın bulguları, içsel olduğu kadar dışsal olanların da öğrenme için eşzamanlı olarak bulunabileceğini göstermektedir. Dahası, bu içsel ve dışsal motivasyonlar bir etkinlik için aynı anda var olabilir ve işlev görebilir.

Bu çalışmanın sonuçları, önceki motivasyon araştırmalarıyla tutarlılık sağlarken aynı zamanda, oyunlar bağlamında neyin motive edici olduğuna dair genişletilmiş bir açıklama sunar. Bu verilerin diğer oyunlarla, diğer ortamlarla veya diğer bağlamlarla olan ilişkisi henüz bilinmemektedir. Bu çalışmanın verileri bir okul sonrası bağlamında toplanmıştır. Bu anlamda, eğitsel bilgisayar oyunuyla oynarken öğrenenler, katı bir müfredat ve ödev iletim tarihleri gibi geleneksel okul bağlamlarının sınırlamalarına maruz kalmamıştır. Sonuçların ne ölçüde uyuştuğunu veya farklılaştığını araştırmak için bu çalışmayı okul bağlamlarında bu tür kısıtlamalarla tekrarlamak uygun olacaktır. Bu, bu çalışma sonucunda bulunan motivasyonel öğeleri tamamlamanın yollarından birisidir.

Geleneksel olarak, öğrenenlerin oyunlardaki motivasyonlarını inceleyen çalışmalar, anketler aracılığıyla bir kereye mahsus veri toplama da dahil olmak üzere geleneksel olarak nicel yöntemlere dayanmaktadır. Ayrıca, bu çalışmaların çoğunda motivasyonu ölçmek için bağlamla stratejik olarak uyumlu olmayan görevler verilmiştir. Bu çalışmada kullanılan nitel yöntemler ve doğal bağlam, öğrenenleri bilgisayar oyunlarında neyin motive ettiğini anlamak için mevcut olandan çok farklı bir bakış açısı sağlamıştır.