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The Challenges of Refugee Students Encountered in Science Courses: A Phenomenological Study

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Abstract

In recent years, because of some factors such as, wars and unemployment, refugee and migrant people population have been increasing in Turkey. The aim of this study is to investigate the factors effect refugee students' learning process within the scope of science course. It was focused on to gain the data deeply, which were taken from the refugee students within science course to understand the reason of failure in science. This study was conducted in a middle school, which is located in Ankara, and was carried out with middle school students, whose ages are from 11 to 14 years old. The study was conducted with seven refugee students in 2016-2017 education fall term, for six months. In this study, qualitative method was used, within this scope this study is a phenomenological study. To collect data of the study, interviews, observations and document analyse techniques were used. A triangulation was provided to vary the data of the study. Content analysis and descriptive analysis techniques were used to obtain of the results of the study. It has been understood from the observations that students could not understand science teachers' statements while they were in science lesson. Science teachers stated the reasons of students' failure in science that students do not know Turkish well (20%), they do not belong themselves to Turkey (20%), economic conditions (13,33%) and negative school climate (13,33%). Students pointed out some factors of their failure in science that they are language problems (11,66%), their family can not help to them within science course (11,66%) and so on. It can be recommended taking additional science courses after school will be more useful for refugee students in terms of effective learning science.

Keywords: phenomenological, refugee students, science course

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Mülteci Öğrencilerin Fen Bilimleri Derslerinde Karşılaştıkları Zorluklar: Fenemonolojik Bir Çalışma

Öz

Türkiye'deki mülteci ve göçmen nüfusu; savaş, işsizlik gibi faktörlerden dolayı son yıllarda artmaktadır. Bu araştırmanın amacı, mülteci öğrencilerin fen bilimleri dersini öğrenmeleri üzerine etkili olan faktörleri belirlemektir. Mülteci öğrencilerin fen bilimleri derslerinde başarısız olmalarının nedenlerini anlamak için bu öğrencilerden derinlemesine veri almaya odaklanılmıştır. Bu araştırma, Ankara'da bulunan bir ortaokulda, yaşları 11 ve 14 arası olan ortaokul öğrencileri ile birlikte yürütülmüştür. Araştırma 2016-2017 eğitim öğretim yılının güz döneminde yedi mülteci öğrenci ile altı ay sürede gerçekleştirilmiştir. Bu araştırmada yöntem olarak nitel araştırma yaklaşımlarından fenemonolojik araştırma kullanılmıştır. Araştırmada veri toplama aracı olarak görüşme, gözlem ve doküman analizi kullanılmıştır. Araştırmanın verilerini çeşitlendirmek için çeşitleme (üçgenleme) kullanılmıştır. Araştırmanın verilerinin elde edilmesinde içerik analizi ve betimsel analiz kullanılmıştır. Mülteci öğrencilerin fen bilimleri derslerinde, öğretmenlerinin söylediklerini anlayamadıkları gözlemler sonucu anlaşılmıştır. Fen bilimleri öğretmenlerine göre öğrencilerin fen bilimleri dersinde başarısız olmalarında; Türkçeyi iyi bilmemeleri (%20), kendilerini Türkiye'ye ait hissetmemeleri (%20), ekonomik nedenler (%13,33) ve olumsuz okul iklimi (%13,33) gibi faktörler etkilidir. Öğrenciler fen bilimleri ders başarılarının düşük olmasında dilsel problemlerin (%11,66) ve ailenin fen bilimleri dersine yardımcı olmaması (%11,66) gibi faktörlerin etkili olduğunu belirtmişlerdir. Öğrencilerin okul saati sonrasında, takviye fen bilimleri dersi almalarının mülteci öğrencilerin fen bilimleri derslerini etkili biçimde öğrenmeleri açısından daha yararlı olması bakımından önerilebilir.

Anahtar Sözcükler: fenemolojik, mülteci öğrenciler, fen bilimleri dersi

Introduction

To understand refugee people and being aware of their problems that they have been facing in their new countries is important to know who they are. UNHCR (2016), states that, a refugee is a person who fleeing conflict or persecution. USA for UNHCR (2016), expresses that refugee people leave their countries because of some problems such as race, religion, nationality, political thoughts. They leave their countries within the scope of given reasons above and National Association of School Psychologists (2016), also states that many families have been forced to flee their countries as refugees. It can be expected that refugee people have some problems when they arrive their new country and they can face with some challenges such as language difficulties, cultural barriers, economic rigours, healty problems etc. It is an important issue to adapt refugees to the society where they live. In addition this, it is important to provide refugee people to go on their education in their new countries. For this reason, children need to go on their education in schools or any educational organisation provided by goverment. As Taylor & Sidhu (2012) stated in their study, international movement of people and diversity of national populations posed challenges for education systems in recent years. Moro (2002), states that Sudanese refugee youth forced to leave school since violations of human rights and he also says a Sudanese secondary school student, he/she can not access his/her final results until he/she completes defense training. Refugee people come to Turkey and live in Turkish cities and bring their children to Turkey, as well. They can face some problems in the adaptation period because they come from different culture (Hutchison, 2006; Şeker & Aslan, 2015).

It is known that 150.000 Syrian students study in Turkish formal schools and 300.000 Syrian students study in temporary educational organisations in Turkey (Hürriyet, 2016). The number of the countries might change where 90% of the refugees live in Turkey are Afghan, Iranian, Iraqi, and Somalian (Unicef, 2016). It is important for refuguee students to adapt themselves to the place that they live out of their country. It is thought that schools have an important role to connect refugee young people in facilitating to belonging (Cassity and Gow 2005; Christie and Sidhu 2002; Taylor & Sidhu, 2012). They should be placed in the formal educational organisation to be trained well for their future. It can be thought that schools are like a bridge to connect refugee students to society of the country in which they live. When national reports and international exam reports are investigated it is seen that immigrant students and refugee students have some problems in mathematics, reading and problem solving (OECD 2015). It is known that the share of immigrant students in OECD countries increased from 9% in 2003 to 12% in 2012 (OECD, 2014b). It has been found that refugee students', who live off site Canada and US., PISA 2015 scores average is under refugee students who live in Canada and the US. (PISA, 2015). The US and Canada have refugee people for decades, although Turkey has been hosting big amount refugee people population since Syrian war started especially. It can also be said before Syria war, Turkey had already been hosted Afghan, Kırgız, Uzbek Pakistani refugees. However there are limitied studies conducted with refugees within science (Warren et al, 2001; Varma, 2002; Miller, 2009).

It is found that there have been carried out some studies related to refugees in the educational fields. Perrier (2004), analysed pilot studies to assessed the therapeutic benefit of active science for traumatised refugee children in Rwand and Nepal. Magnuson, Lahaie & Waldgofel (2006), investiged the links between preschool attendance and school readinee of children immigrants, in their study. Waters (2006), investigated meanings and consequences of international education carried out in Hong Kong. Windle, J. & Miller, J. (2012), presented of the approaches to teaching low-literacy refugee-background students reported

by 61 teachers in secondary schools. Wink (2015), investigated how chemistry educators have the opportunity to adress immigrant students. Within this scope, he stated four ways: by "considering pedagogical, systematic, and content responses to working with immigrant students", "educating for international connections", "including new countries and cultures in educational content" and "working with undocumented students". Areepattamannıl & Kaur (2013), investigated student level and school level factors which related to science achievement of immigrant and non-immigrant students among a national sample in Canada. When viewed from these aspects, the research can be seen as one of first scientific studies which conducted with refugee students within science course for the middle school students. In this context, it can be mentioned that the study is an important scientific study in terms of being an example.

The Significant and Aim of the Study

Education systems should provide all students to access equal science education. Barton and Yang (2000), state that current reforms in science education highlight science for all. Because of this basic aim, science education systems and its instruments also must support all students to access quality science education regardless of their race, ethnicity, religous and other factors. Although it is known that there have been prepared many studies which are carried out with refugee students in the context of general education, it is also seen that limited of them are related to science education. It can be claimed that, though, there are more than 500.000 refugee students in Turkish schools, there is no study conducted with refugee students based science course for the middle school students, in Turkey. This might be meant that refugee students' difficulties can not be sufficiently known by science educators. In this regard, this study can be claimed as a original research conducted with refugee students in the context of science education which will provide depth information, that refugee students face while they are at a science course. According to the obtained data of the study, it is given some significant recommendations for the refugee students' challenges during learning science process.

The aim of this study is to investigate what factors effect refugee students' science learning process within the scope of science course.

Research Problem

What kind of challenges refugee students have during learning science while they are in a science classroom.

Research Sub-Problems

1. What challenges refugee students face while they are in the process of learning science in classroom?

2. What are the main reason of the challenges that refugee students face within science course?

Method

Model of the Research

In this study, qualitative method was used, within this scope this study was conducted as phenomenological approach. It was focused on to gain the data deeply, which were taken

from the refugee students within science course to understand the reason of failure in science. Koch (1995), points out that a phenomenological study reveals participants' truth and give more information on their life world. Phenomenological studies aim to describe an experience deeply from the people who participate in the study (Ary, Jacobs, Razavieh, & Sorensen, 2006). Besides, phenomenological study defines of a concept or a phenomenon lived experiences (Creswell, 2007).

Participants of the Study

This study was conducted in a middle school, which is located in Ankara, and was carried out with seven middle school students, whose ages were from 11 to 14. The study was conducted with three Afghan, one Kirgiz and three Syrian refugee students in 2016-2017 education fall term, for six months.

Table 1. *Some information on participants' demographics*

Student	Gender	Class	Arriving Date to Turkey	Country of Origin
S1	Boy	5th grade	8 months	Afghanistan
S2	Boy	7th grade	8 months	Afghanistan
S3	Girl	7th grade	5 months	Afghanistan
S4	Boy	6th grade	4 years	Syria
S5	Girl	5th grade	9 months	Kyrgyz Republic
S6	Girl	5th grade	1 year	Syria
S7	Boy	5th grade	1 year	Syria

Data Collection Instrument

As it seen in table 1, while it has not been a year that Afghan and Kırgiz students came to Turkey, however, Syrian students had come to Turkey almost two years ago. The study was conducted with three girls and four boys who study from fifth grade to seventh grade in this middle school. Refugee students were named under codes as S1, S2, S3, S4, S5, S6 and S7.

The study was also conducted with three science teachers, who teach to these refugee students. All of three science teachers were female and it was thier first time that they studied with refugee students in their professional experince.

Data Collection Process

Three different data collection tools were used within the study. These are interview forms, taken both science teachers and students, observation forms and students science textbooks, which were brought from their country and their science exam papers. A triangulation was provided to vary the data of the study. This was done because to wealth and having deeply information of the study.

The Interview Forms

The interviews were carried out with students and with their science teachers. Two semi-structured interview forms were created, which have validity and reliability. To provide validity of the interview forms, first, related studies were investigated from the literature.

Then, six questions were prepared for the students and six questions were prepared for the science teachers. The questions prepared for the students sent to ten students to determine if there were any non understandable question or not. Having had students feedbacks, necessary corrections were done on the form and it was sent to field experts. The same processes were also carried out the interview form, which was applicated to science teachers. Finally, the interview form the students was created with six questions and the other one was created with five questions. Six questions were asked to refugee students and five questions were asked to their science teachers. The interviews that were held with the refugee students lasted approximately 30-45 minutes.

The Observations

All refugee students were observed by the researcher during eight science courses when they were in science courses. No camera was used while observing them. During observations, observation forms were used to identify the criteria. Some criteria were determined to identify whole science course process, such as structure of the class, the role of refugee students during learning science, their participation to learning process, their communication situtations with their teachers and their friends, adaptation statuses etc.

Document Analysis

Within document analysis students' science exam papers and their science textbooks were investigated. Within this scope, all of the students' one of science exam paper were investigated, and their science scores averages were taken from their science teachers. When is being looked at all the refugee students' science exam papers, it is seen that it is not possible to read them all very easily because of written Turkish language level. There are stylistic defects at letters, grammer mistakes on the exam papers. And it is thought that most of refugee students could not understand well what was asked to them exactly.

Data Analysis

The data of the study were obtained by using interview, observation and document analysis techniques. Content analysis and descriptive analysis techniques were used to have results of the study. A phenemonelogical study strategy was benefited in this study. To variety of the study within phenemological perspective, several analysis techniques were used such as interview, observation, and document analysis techniques that are called triangulation (Yıldırım & Şimşek, 2011). The data acquired from interviews and observations, first sent to field experts. They separeted them into codes, then themes were created by using codes.

The interview data were examined by two experts, themes and codes were formed independently from each other. "Compatibility percentage" formula suggested by Miles and Huberman (1994) was used to determine the reliability of the codes and themes obtained by the interview forms. It was expressed as; Compatibility percentage= (Agreement)/(Agreement + Disagreement)X100. According to this formula, the compatibility percentage in the interview form fort he student was found as 91.68 and it was found for the science teachers as 92.80. It is stated that if a compatibility percentage in studies is at .70 and on .70, interview data can be used in a study (Yıldırım, 2008).

The observation form was examined by two experts, themes and codes were formed independently from each other. “Compatibility percentage” formula suggested by Miles and Huberman (1994) was used to determine the reliability of the codes and themes obtained by the observation form. It was expressed as; Compatibility percentage= (Agreement)/(Agreement + Disagreement)X100. According to this formula, the compatibility percentage in the interview form was found as 88,90.

Ethics of the Study

Necessary information such as, content of the study, the reason and period of the study, what type of data would be obtained and where they would be used with purpose was given to the students. And needed permissions were taken from their parents and school administration, by parent approval forms. Beside, “volunteer participation form” was prepared for both science teachers and refugee students who joined the study.

Results

The results acquired based on the study data have been included in this section. The results have been scrutinized under headings of the results taken from interviews, observations and documents.

The Results Obtained from the Documents

Within document analyse there were carried out three different operations. First is to learn refugee students’ science exams average; second is to investigate refugee students’s science exam papers and their notebooks and last is to investigate refugee students’s science text books, which they studied in their respective country.

It has been found that refugee students’ science exam scores are behind Turkish students’ science scores. It was investigated three science exams scores within first fall educational term in 2016-2017 educational year. While refugee students’ average of the science exams was 34, Turkish students’s average of the science exams was 62.

All refugee students’ science exam papers were investigated within some criteria such as structure of grammer in Turkish langauge within their statements, using right/wrong letter in the statements, right writing of science concepts. According to these criteria, it was seen that all of refugee students did commit a solecisim in their science notebooks since they are not successul in terms of writing some statements in Turkish. Hovewer, S5’s science notebook is better than other students and it was found less mistakes in her notebook within grammer. Beside this, it was seen that science concepts were written right in S1, S2, S3 and S5 coded students’ science notebooks. Because some science concepts are written in English, as an explaination, in Turkish science textbooks. It is known that S1 and S5 coded students’ Turkish are better than others and because of this reason, their notebooks and science exam papers are better than others.

Their science textbooks were asked from refugee students to bring them, which they study in their respective country. S2 and S3 coded students could bring them into the science classroom and a seventh grade science texbook written in Syrian was found and investigated. Both S2 and S3 coded students brought seventh grade science textbooks into the science classroom. A seventh grade Afghan science textbook was investigated in terms of included

its issues, units and activities that it had. It has been determined that Afghan seventh grade science textbook has following issues; cell and its kinds, organelle, pressure, osmosis, photosynthesis, respiratory, mitosis and its sections, animal world and plants, ecology, substance cycle. Having investigated this book, it was understood that the issues in Afghan science textbook are more complicated than Turkish seventh grade science textbooks. In Afghan' science textbook there have been given deeply information. In Turkish seventh science textbook following units are given; "The Systems in our Body", Force and Energy", "Matter's Structure and Its Features", "The Reflections at the Mirrors and The absorption of the Light", The Human and Enviroment Relations", "Electric Energy" and "Solar System and Beyond". To have more information on science textbooks of Syria and to understand whether there is any relation between failures in science based science issues, a seventh grade Syria science textbook was investigated. It was learnt that Syrian seventh grade science textbook is comprised of two different textbooks. First science textbook is based chemistry-physics issues and second has biological issues. Within this study first science textbook was reached to be investigated. It was invesitaged in terms of its units and issues. It was found that science textbook contains following units;" Force and Energy, Chemical Factors and Compounds, Heat and Expansion of the Matters, The Live, The Classification of Lives, The Nature and The Ground". It is seen that the issues of those units are given at eight grade level: "Force and Energy, Heat and Expansion of the Matters and The Nature and The Ground". It has been understood that the issues of The Live and The Classification of Lives are given at sixth grade level. The issues of the "Chemical Factors and Compounds" is given at seventh grade level. Although much of this unit's issues are given at this level, it has been found out that "The Mine" is given at eight grade level. These results which have been taken from this science textbook has been showed us Syrian seventh grade science textbook's issues are quite different from the seventh grade Turkish science textbook's issues.

When we focus on both Turkish and Syrian seventh grade science textbooks, the most important distinctness between Turkish and Afghan science textbooks that two science textbooks are given in different subjects It means most of included into Afghan science textbooks are given in sixth grede Turkish science textbooks. Beside this, while Turkish textbook is being readed by left side of the cover, Afghan science textbook is being readed by starting right side of the cover.

The Results Obtained from Interviews

Some interviews were carried out with refugee students and their science teachers. Within this scope the interviews were conducted with seven refugee students and their science teachers.

The students, told that they could not understand their science teachers because their Turkish level was not enough. They also underlined their science teachers tell the issues so fast. Therefor they were not able to understand them very well. They also stated they sometimes can not understand the language of written paper, which was prepared to evaluate students's achivement such as science exams. Besides these, unable to reflect themselves during courses, comprehension difficulty of science concepts, textbooks, issues, experiments were given by students as reason of their failure in science. Although they take low science exam scores, neither they nor their science teachers and school administration do anything for the solving that challenge. Science teachers told that refugee students could not understand them and they are withdrawn while they are in class, they are shamed to ask any question to science teachers. Teachers think that the most important challenge on science learning of refugee students' is Turkish language, and following it some other factors such

as; differential science curriculum, differential culture and indifference of their family can be mentioned.

Within the scope of science achievement of the refugee students, it was found that only S1's science achievement is higher than both Turkish and other refugee students'. While S1 is more successful, hovewer, other refugee students's science achievement rate is under Turkish students'. It was determined that S1 has come Turkey four years ago with his family. His science teacher stated that S1 is very successful in science and he has very nice communication with his friends and teachers.

- How is your Turkish language? Where did you learn it?
- Are there any subjects or issues that you can not understand within science course?
- What challenges do you face at science exams?
- Have you ever faced that you could not understand your science teacher?

The reasons of failure in science course were asked refugee students and their responds are given in Table 2.

Table 2. *The reason of failure in science course according to refugee students*

Theme	**Code**	**f**	**%**
Language	*Turkish language is difficult*	5	8,33
	We have not any course to learn Turkish	7	11,66
Family	*Spoken in native language while with family*	6	10
	Family do not help on our science course	7	11,66
The out of school effects that I have lived	*I am not able to understand my friendes while playing*	4	6,66
	Challanges on social communication	5	8,33
Science textbook disadvantage	*Type of activties*	6	10
	The science issues	5	8,33
Facing problems within at science course	*Lack of material*	3	4,99
	Lack of technological tools	2	3,33
School environment	*Facing problems with friends while playing games*	5	6,66
	Family	7	11,66
	Negative friendships	4	6,66
Social environment out of school	*Lack of Money*	4	6,66
	Harbouring problem	3	4,99
Type of giving lecture of science course		2	3,33
Economic conditions		4	6,66

The reasons of failure in science course were asked refugee students and they indicated some responds to researcher. Their responds are classified under themes and codes. The themes are "Language, Family, the out of school effects that I have lived, Science textbook disadvantage, Science textbook disadvantage, facing problems at science course, School environment, Social environment out of school, Type of giving lecture of science course and Economic conditions. It is seen that some codes are responded more than others such as "we have not any course to learn Turkish (11,66%), family do not help us for our science course (11,66%). Family was used as seven times (11,66%) a code under Social environment out of school. Refugee students think the reason of their failure in science is arised following themes; family (spoken in native language 10%), textbook disadvantage (type of activities %10). There have been found some interesting results given by refugee students, as well. Most of them think that some reasons link to failure in science course. These are Turkish

language is difficult (8,33%), challenges on social communication (8,33%) and the science issues which are in Turkish science textbooks (8,33%).

When the researcher asked to S1's science teacher about reason of failure of S1's science achievement?

Science teacher responded; I see that S1 and his family can speak in Turkish very well. I sometimes observe him when he is in science class that he endorses to learn science concepts and he does his homework and shows when we before start to science course.

Although this science teacher states positive statements, she does not say the same positive thoughts about S4, who is also from Syria. She states her thoughts about S4 in following sentence: I have been studying with S4 for five months, he is failure in science course since he does not understand what I tell within science and he and his family talk to each other in their native language. Due to he can not understand in Turkish, he does not endorse science course and also he does not do his homework.

It was asked S4 and S7 coded students' science teacher the reason of failure of them. Their science teacher stated following: S4 and S7 coded students can not understand me during in the science course since their Turkish language level is not enough. Hovewer, these refugee students can adapt themselves in both classroom and school climate, I understand from my observations that if their Turkish level were enough they would be successful in science course.

This science teacher also pointed out about S6 coded student's failure within science course. She stated: S6 coded student witnessed many things such as, she lost her father in the Syrian War, her economical sititation is not well, she lives with 25 people in the same flat. I think she has no opportunity to study her science lesson, under these conditions. Other important problem is she and family members have been speaking in Arabic while they are out of school. This is also a big challenge for her to adapt herself to Turkish educational system. Beside, science course is anyway a difficult course to be learnt easily, we know that from our students, it is normal S4 coded student are not able to learn science very well.

Both science teachers' views and students' views confirm each other on refugee students' failure in science course. They almost indicated parallel statements within the reasons of failure of refugee students.

It was asked to science teachers about the participation of refugee students while they are at science course.

Science teacher answered that her students (S4, S6 and S7) have not been participating to science course. She also stated that I sometimes ask directly some questions to them but they do not want to response them and they are reluctant to participate to the science course. The other science teacher answered (S1 ve S5) that two of her refugee students are successful in science course and she indicated following statement. They are very willingly participating to the science course. They want to reply me; they want to learn new scientific facts. Beside, especially, S5 coded student has positive attitude and motivation towards science course and she is able to answer my questions in Turkish. The other science teacher said that her refugee students (S2 and S3) have not been participating to the science course willingfully. She said this following sentence. I want them to participate science course but I can not achieve this, unfortunately. I think S3 coded student can not adapt herself to Turkish educational system, yet. S2 coded student can not understand what have been told in science course, he just talks to his friends.

It was asked "science homeworks" which were given by teachers to their students.

All the science teachers told that most of refugee students (excluding S1 and S4) do not do their homework within science course. S4's science teachers stated that in my science

course S4 coded student endorses within the scope of science very much while she is at home she based on this thought according to an interview which she conducted with S4's mother.

It was asked science teachers that their refugee students bring materials within science course, which were asked to be brought by teachers.

It has been learnt that S1 coded student sometimes brings necessary materials and S5 coded student always bring materials within science course. S5 coded student's economic condition is not well and because of this reason he sometime can not bring needed materials, which are used in the activities, to the class. Others always do not bring any materials to the science course.

What do you think about your refugee students's failure reasons?

Table 3. *Teachers' answers*

Themes	**f**	**%**
Lack of Turkish language	3	20
Science issues are different	1	6,66
Negative class climate	1	6,66
Negative school climate	2	13,33
Economic conditions	2	6,66
They do not feel that they belong in Turkey	3	20
They have not any time for studying while they are out of school.	2	13,33

Science teachers' thoughts are given under some themes shown in table 2. According to science teachers that they think knowing Turkish is important to learn science (20%), they also indicated interesting statement that they think refugee students do not feel they belong (20%) in Turkey due to this they are not successful in science course. Economic conditions (13,33%) and negative school climate (13,33%) have also effect refugee students's failure.

The Results Obtained from Observations

It has been understood from the observations that refugee students (excluding, S1 and S5) could not understand science teachers' statements while they were in science lesson. It was seen that most of refugee students did not ask any questions to their science teachers after teachers finished to tell the related to science issues. However, S1 coded student was very willing to answer his teacher questions and he wanted to solve the problems, which were asked by his teacher. An interesting result can be said that five refugee students were reluctant to learning science during the courses. It can be claimed that the reasons of the reluctance learning science could be based on some causes such as missing their countries-friends-relatives, language problems, economic negative conditions they have, not have their own study room and living with many people in the same flat. S5 coded student was able to understand her teacher statements during in science classes. She tried to listen her teacher and endorse to what was told during the science course. It was also seen that S5 coded student first show her homework when her teacher had asked to show the homework from whole the class.

It was found out that S3, S4 and S6 coded students were so silent during science course, unless their science teachers had asked anything they were not giving any answers. However, S1, S2, S5 and S6 coded students adapted themselves to the class climate. But it was also seen that S2 and S7 coded students were just chatting with their friends. It is an interesting observation was found in science course while S2 and S7 coded students were trying to say

someting within the science course their friends started to laughed at them. Then S2 and S7 coded students started to laugh, as well.

Conclusion and Recommendations

To provide refugee students to learn Turkish language efficiently, support cooperation with their family, giving more science course them after schools and get them to informal science learning centres can be recommended to provide them to be more successful on learning science. Refugee students should be provided within science course by some activities such as science centre trips, science museum trips, doing science exercises and etc. after school.

In this study, it has been seen that a sixth grade student's science achievement is higher than other students. The intierviews with her science teacher confirm that her reading, writing and understanding of Turkish is very well and this is valid for her parents, as well. Her science score and the interviews indicate that based on her coming to Turkey five years ago, has reflect her science achievement. There are some studies which have parallel results with this study. It has been found that 15 year-old students', who are new in their new country, reading success are lower than other students who came their new country before the age of fifteen (OECD, 2013). The same result has also been found in this study. Two refugee students' science achievement, who came Turkey before others, are higher than other five refugee students. It is known that reading skill is related to science achivement. Turkish language is a big challenge for the refugee students. Hence refugee students first should be taught Turkish language much better than now to provide them in science course.

Refugee students's science scores are under non-refugee students' scores and as mentioned that there have not been doing any applications for them. It has seen that a refugee student's science scores are higher than other refugees, and he has been in Turkey for five years. It can be claimed when a refugee's school time could be enhanced his/her science achievement might be promoted. OECD (2014b), states that Israeli and Germany have designed programmes which offer more learning opportunities to immigrant students by supporting a longer school day. Israel creates small study groups to encourage them to courses. It's known that Turkish students, whose science exam scores are under class average, are trained within science course by their science teachers after school time. Students' science achievement is anticipated to reach higher amount via these additional courses.

Hannah (1999), stated that with the refugee student's agreement school and or organisation staff should be informed about a refugee student's background. Students' needs within science education might be consider, and science teachers who participated this study highlighted the same point, as well. In this study, it has been found that science teachers do not know very well their refugee students. For instance, they did not ask what issues and subjects their refugee students had read in their own country and they also do not know refugee students' family conditions. Science teachers should aware of their refugee students' life conditions to promote their science achievement. Spernes (2016) indicates that collaboration between immigrant students and teachers might produce valuable knowledge for students and research field. McBrien (2005) states that teahers and school staff should be instructed in cultural sensitivity for all children in their school. Refugee students might be supported with social services within provide language instruction for students and their parents, combat discrimination. It is known that temporary educational organisations have

opened for the refugee students, although they are not enough to reach every refugee student. If wanted to be successfull to accord refugee students to the Turkish educational systems, that organisations should be strengthened for the refugee students.

Schools have very important role to educate and integrate refugee students in which they live currently. It is seen that the integration of refugee students could not be done sufficiently in this school and it is thought that some factors can cause it. It can be said that the school is not able to solve the refugee students' problems without any professional helping provided by local authority or the national govermental organisations such as ministry of national education, ministry of family and social policy. Although schools are known that they can not solve big problems of refugee students, school administration can prepare some training acitvities/seminars for science teachers, refugee students and their parents to provide collaboration among them. Students, who have learning disability, are supported by their teachers within some lessons that they have difficulties to learn them, within a program that has been created by Ministry of National Education, at school times. Inclusive students have opportunity to have one to one science courses with their science teachers. It is aimed to promote inclusive students' science literacy via these trainings. These trainings can also be carried out for the refugee students to provide them within science courses while they are at the school. In addition to this, some special science programmes and science textbooks can be prepared for the refugee students. A similar result was found by Mathewws (2009), he states if schools are to provide refugee students they have to take their capacity to socialise and integrate. To promote integration of students towards school climate it should be recommended that it might be carried out some out of activities which covered by science issues such as science centres and science museum visits, planaterium visits, university visits and so on. It is thought that students could be integrated to the school climate within science course and they might be start to learn science more voluntarily. By doing this, it provides science teachers and school staff to facilate their students to school climate and this also supports them to enhance their students' science achivement. Refugee students can be provided by some science training courses which are aiming enhance their science achievement via small study groups that may be carried out after schools. It is important to integrate them to school climate since refugee students educational experience is shaped by their social, cultural conditions. Ngo (2006), educational experiences of southeast and South Asian American students are shaped by their social, cultural, and economic situtations.

In this study, it was found that there is not any special science programmes for the both refugee students and science teachers. It is found out that both Afghan and Syrian seventh grade science textbooks have different units and within this scope different issues, as well. Within this context, it can be claimed that that countries' sixth grade science textbooks have also different issues. As a result of this, it can be said that refugee students come to Turkish classes with different units and issues that they have learnt in their countries. Besides, refugee students try to learn science issues and topics with their limit Turkish language level. It is known that some studies point out programmes for refugee students can provide them within learning science. Refugee students' transitions into the mainstream may be more successful if refugee students have access to intensive one-on-one coaching over a period of time. A program which aims to refugee students delivers teachers to support their tutoring activities while they are in the school. (Ferfolja, 2008; Ferfolja & Vickers 2010). Weekes, Phelan, Macfarlane, Pinson & Francis (2011) state that in a student-centred Project-called by them as "Classroom Connect" the Project improves the capacity of refugee people to negotiate challenges of mainstream schooling.

PISA (2015), evaluates how immigrant students fare compared to their native peers and meausures the performance gap between countries. Share of immigrant students among all students is thought as a context factor. It is seen that Turkey share of immigrant ranking is under the OECD within 2015 PISA. Turkey has been hosting almost four million refugees and 600.000 of them are student in Turkish educational system. Although it has been found that refugee students live in Turkey are not successfull at expected level.

It was found that the science teachers in this school do not carry out any collaboration with each other. Although eight science teachers work in this school, only one of them is interested in refugee students but that science teacher has not any special education on refugee students, as well. It can be focused on the other science teachers to provide them sharing their experience with eachother. Refugee population has been especially increasing at high amount in Turkey, since 2011. As mentioned in the study that there are almost three million Syrian people and other nationalities refugee people live in Turkey for past decade. Although it has been increasing refugee people population in Turkey, Turkish universities have not created any lesson(s) for the candidate science teachers to support them with information and skills for the refugee students yet. McCall & Vang (2012), states that teacher educators must prepare new teachers to adress needs of Hmong refugee students. According to Sakız (2016), it is important to be success at nonhomogenous classrooms that well-trained teachers in the refugee field should share their experiences with other teachers that work in the schools. Science teachers can be supported to be trained in refugee field in the cscope of science course. Besides, the collaboration among teachers, families and students should be provided to get refugee students' science achievement higher level. It is seen refugee parents have not been including to school climate, as well. NASP (2016), points that schools can work with families to find ways to connect families and support tyey can have opportunities to participate in their students' schooling. To have much more quality in science education for refugee students and provide them to understand science course and its issues, adding new courses to their programmes for the refugee students can be recommended to universities. In this study, ıt was studied with seven refugee students. It can be recommended that it should be studied in a school which have many refugee students within science course.

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