CELEBRATING STUDENTS' DIVERSITIES THROUGH UNDERSTANDING STUDENTS' CHARACTERISTICS

Case Study

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Abstract

Dealing with different students' characteristics cannot be avoided by the teacher in everyday teaching. It is well-known that teaching English to young learners is different from teaching an adult. Therefore, teachers are required to understand the characteristics of the students in order to know the students' needs so that learning goals can be achieved effectively. Research under the case study design had been done at a private school in Surakarta which used interview and observation to collect the data from 2 English teachers in that school. This research aims at investigating the teachers' beliefs on understanding characteristics of students and exploring how those beliefs are reflected in the teaching-learning practices. The result shows the two participants believe that understanding the characteristics of students is important for teachers because it can help them to develop their teaching-learning strategy and achieve learning objectives effectively. This research also reveals the way the participants reflect their beliefs in teaching-learning practices.

Keywords: beliefs, students' characteristics, young learners, teaching English

1. Introduction

Teachers are required to master several competencies in the teaching-learning process. Understanding the materials, having the ability to use technology, managing the classroom well, and having a creative strategy in teaching are competencies that commonly discussed. But there is a basic competence that should be mastered by the teacher, namely understanding characteristics of students.

In Indonesia, to become a professional teacher, there are four competencies must be mastered; these are professional competence, pedagogical competence, social competence, and personality competence (Indonesian Law Number 14 of 2005). Understanding students' characteristics is one of the aspects involved in pedagogical competence.

Students differ in many aspects. The most obvious is at the physical differences, such as height, facial characteristics, and tone of voice. However, there are other differences that are apparent, particularly in other students, such as some are quite while others are noisy, some are fluent while others are hesitant of speech, some are socially active while others are reserved, and etc. (Riding & Rayner, 2012). Those differences are faced by the teachers in

teaching-learning process. Therefore, understanding students' characteristics is important to teaching. Knowing and understanding students' characteristics will give benefit for the teachers to plan how to teach students and to find out each student's needs. If teachers are able to understand students' characteristics, they will be able to decide the suitable learning strategy and material for the students so that the goal of learning can be achieved. Moreover, the potentials of students also can be developed because they are given opportunities to learn according to their capacities.

In this research, young learners refer to children who are learning English in elementary school, for whom English is not their first language. Children have shorter attention spans than adults and also more energetic. They learn language according to specific stages of development. Hence, understanding the principles of language acquisition and implement it in the way that keep children motivated to learn is the key to teaching English to children (Hashemi & Azizinezhad, 2011).

However, teaching English as a language which is not used in students' everyday lives can be quite challenging. Teachers are supposed to think creatively so that students will be interested to learn. Following the new era, the world needs generation who is not only good at academic but also non-academic. In this point, the role of teachers is important where they do not only deliver material but also can be a guide for their students in discovering their interests, talents, and potentials. If their potentials are developed well, they might become high-skilled generation who are professional in their field.

To carry out teaching tasks, teachers can be influenced by various factors, one of them is their beliefs. Pajares (1992) stated that belief is a personal guide to help individuals to define and to understand the world and themselves. Belief controls people actions. Several kinds of research have shown the relationship between teachers' beliefs and classroom practices. According to Gilakjani and Sabouri (2017), teachers' belief is increasingly becoming a vital factor in the language teaching-learning process. It will influence teachers' attitude and performance in teaching. It also has a greater impact than teachers' knowledge on planning their lessons, on the types of decision they adopt, and on classroom practice.

This research focuses on teachers' beliefs on understanding characteristics of students. It becomes the focus of the research because some phenomena happened showed the lack of awareness of teachers in understanding characteristics of students so that the teaching-learning activities is only focused on reaching some scores or passing the standard score for English subject. Brazelton and Greenspan (2000) in Linse (2005) state that children require and deserve professional teachers who interact with them in appropriate ways based on the child's social or emotional, physical, cognitive, and moral development.

There is a private school in Surakarta that attracts the researchers because the school shows a different thing that is giving attention to the students' characteristics. In this school, there are many students who are good at English. They even won several English competitions. Because of the unique phenomenon found by the researchers, this research aims at investigating the English teachers' beliefs on understanding students' characteristic in this school and exploring how those beliefs are reflected in the teaching-learning practices. The questions of the research are (1) what are the teachers' beliefs on understanding students' characteristics? and (2) how are the teachers' beliefs on understanding students' characteristics reflected in the teaching-learning practices? The researchers hope that this research will give benefit to other teachers in the field of teaching-learning English so that the awareness of understanding characteristics of students will increase.

2. Methodology

This research is qualitative research which used the case study as a research design. This method was chosen because the researchers found a unique phenomenon at the observed school. This research had been carried out at one of a private school in Surakarta. Two English teachers were selected, all of who have been teaching English from 8-18 years. Both of them graduated from the English department in one of the private university in Surakarta. The teachers' names are pseudonyms that are T1 refers to the first participant and T2 refers to the second participant.

The interviews and observations were carried out by the researchers at the school. Semi-structured interviews were done and digitally recorded and transcribed. The interviews were designed to obtain data from the participants about their beliefs on understanding students' characteristics and how their beliefs are reflected in their teaching-learning practices.

After interviewing the participants, the researchers observed the teaching-learning activities to clarify what the teachers stated in the interview process. Robson (2002) claimed that what people do may differ from what they say they do so that observation provides a reality check.

The data of this study were in the form of information related to teachers' beliefs on understanding characteristics of students. To analyze the data, the researchers used a data analysis technique from Miles and Huberman (1994). Firstly, the researchers reduced the collected data by summarizing it, chose the main data, found the pattern, and lost the unimportant data. Secondly, the researchers showed the data so that the information related to the research's issue could be seen clearly. The last is drawing conclusion. The researchers verified the data and made the initial conclusion to answer the research questions.

3. Findings and Discussion

This section presents findings related to the teachers' beliefs on understanding students' characteristics and how the teachers' beliefs are reflected in the teaching-learning practices.

1.1. Teachers' Beliefs on Understanding Characteristics of Students

The results of the interviews are displayed in this section. The researchers asked about the teachers' beliefs on young learners, characteristics of young learners, and the best age to learn English.

1.1.1. Teachers' beliefs on young learners

Teachers view young learners in a slightly different way. The first participant (T1) states that young learners are students aged 3-13 which study at primary school. The second participant (T2) explains that young learners are children who have studied a foreign language as English started at the age of 7-13. He adds that students from his school have studied English from the first grade.

The main focus of the first participant's belief about young learners is the age of students whereas the second participant 's is students who learn English. Their beliefs of young learners are along similar lines with Scott and Yetrebeg (1995) and Nunan (2001) in the chronological span of young learners that is from the age of 3-15, and then support the theory from Wendy and Lisbeth (1992) in Fajarina (2017) who divide young learners, based on their experience of the acquiring language. The first level is the pupils who do not get more foreign language experience (5-7) and the second level is the pupils who have more foreign language experience (8-10).

1.1.2. Characteristics of young learners

The first participant (T1) feels happy to teach young learners. According to him, young learners make him comfortable even they are labile and sensitive. He loves teaching them because they are cute, cheerful, and true to themselves. He believes that he can learn many things from them. The second participant (T2) points out the characteristics of young learners on their mentality. According to him children tend to be more curious, want to learn everything, and want to know anything. In the context of English learning, he states that children are interested in English and tend to be motivated in learning because English is a foreign language and according to students it is cool if they can acquire English.

Related to the difference between children and adult in learning English, both participants believe that children love to learn in fun ways such as sing a song, do some projects, make something, and like to interact with the others.

1.1.3. The best age to learn English

To get a better understanding of the teachers' beliefs on understanding students' characteristics, the researchers asked the participants about the best age to learn English. The first participant (T1) view that it is important for children to learn English started from kindergarten or primary school because it is the critical age for children to be able to memorize everything.

From the answer, the first participant (T1) believes that learning English from an earlier age is better because in this age children tend to be able to memorize easier.

According to the second participant (T2), learning English started from earlier is also better. He believes that if we give stimulants for children about foreign language, they will be more prepared in learning English.

So, it can be inferred that both participants believe that learning English is better started at a young age. It supports the idea from Pinter (2006) in Pransiska (2016) who points out some reasons for the benefit of learning a foreign language for children.

1.2. The Reflection of Teachers' Beliefs on Understanding Characteristics of Students in Teaching-Learning Practices

The researchers asked and confirmed to the participants about the way they reflect their beliefs in the teaching-learning process. The results are displayed below.

1.2.1. The way English teachers identify the characteristics of students

Both participants were asked about the way they identify the characteristics of their students. The first participant (T1) explains that he knows students' characteristics while he taught his students in the classroom. He also asks other teachers like homeroom teacher about his students. It seems that the first participant (T1) is a teacher who cares about their students because he tries to find out students' characteristics not only from the time he is teaching but also from having discussion with other teachers too.

The second participant (T2) answered the question by explaining the relation between students' characteristics with learning. According to him, characteristics of students can be seen on the seriousness of the students to prepare learning, to take a part in learning, and to do the assignments. He added enthusiastic students usually do their assignments without any reminder. Then, students' characteristics also can be seen from the students' score on daily test. It can be concluded that the second participant (T2) gets the understanding of students' characteristics by observing students in their learning activities. He believes that understanding characteristics of student especially young learners are easier than adults.

1.2.2. The way English teachers ensure that all students get the same opportunities to actively participate in learning activities

The researchers confirmed to the participants about how they ensure that all students get the same opportunities in learning activities. From the interview revealed the importance of giving opportunities to students to actively participate in the class. According to the first participant (T1), teachers should give an opportunity for students to improve their English skill. He facilitates each student to speak in English by doing project and present it. He also gives questions and invites the students to share their opinion about the material given by the teacher. The second participant (T2) also gives each student chances to actively participate in learning activities starting from the beginning of learning by delivering simple questions related to students' daily activities. According to him, it will stimulate the students to talk in English.

1.2.3. The way English teachers arrange the seat

In the way to arrange the seat, the researchers also asked the participants to get a better understanding of their beliefs and its reflection in the class. The first participant (T1) states that to not make students bored, he changes the seating chart every week except for test. According to him, arranging seat can be an alternative way to create a convenience class. If students feel comfortable, they will enjoy the class.

It can be inferred that there is flexibility in arranging the seat and the first participant (T1) is also aware of the importance of preparing the convenience class to the students.

The second participant (T2) explains that arranging a seat is an optional condition. It depends on necessity. If he wants to have a discussion section in his class so he will instruct students to arrange the seat as the need. He further explains that there is no difficulty in arranging seats for his class.

Both participants explain that there is no difficulty in arranging the class. They can communicate with other teachers easily as well. It means there is good teamwork between one to another. Both believe that it is important to make the student feel comfortable in the class so that they try to not make students bored in learning by changing the position of the seat.

1.2.4. The way English teachers handle students with different physical and learning abilities

Students with various characteristics, different physical and learning abilities can be found anytime and everywhere. The participants share their ways to handle this kind of situation. According to the first participant (T1), some students are easy in learning English and some are not. It is a challenge for the teachers to think about how to use suitable teaching strategies. According to him, teachers are supposed to be creative.

Dealing with this situation, the first participant (T1) thinks that it is kind of a challenge to him as a teacher so that it makes him to think and become a creative teacher. He believes that as a teacher he needs to be creative in using teaching strategy.

The second participant (T2) reveals the way he handles this situation. He explains that to handle students who have difficulties in learning English, he will give special treatment and try to be close with them by talking heart to heart and he will teach them slowly to help them to learn English. He also shares his experience that sometimes he finds difficulties when there is not any support from the students' parents. Even he gives special treatment but if there is not any support from the students' parents like reviewing the material at home or accompanying students to learn at home it will be unbeneficial.

1.2.5. The way English teachers pay attention to students with certain physical need or learning abilities

Related to the students with different physical needs or learning abilities, both teachers have certain ways to pay attention to them. The first participant (T1) shares his experience that he has one student who has a different physical condition in his class. But, there is not any problem with it. He motivates his students to respect each other. Furthermore, he explains to his students that everybody is the same. Then, he focuses on the way he teaches in the class that is using many teaching strategies. He makes sure that each student feels comfortable in the class and gives attention to the lesson.

From his explanation, there is not any problem with the students who have different physical need. The teaching-learning process still can run well. Even other students are able to accept their friend's condition. Moreover, he believes that the most important thing is to make sure that students feel comfortable when learning English with him. He adds that giving motivation to those students (with different physical need) will encourage them to learn in the class actively like others.

The second participant (T2) does not have any students with a different physical need so he only focuses on the students with difficult learning abilities. According to him giving additional hours is effective to help students with difficult learning abilities. Furthermore, giving more attention to them, guiding them in learning, and repeating explanation of materials also can be alternative ways in dealing with those students.

1.2.6. The reason of English teachers to find out the cause of students' behavior deviations

In order to get better understanding on students' characteristics, having a good communication with students is necessary. Students may act differently in the class. Getting to know the reason why they do such things is beneficial to do. The first participant (T1) says that it is also a challenge to know why students have difficulties in learning. He tries to motivate them to learn English and also talk to them by heart to heart. He believes that by trying to put himself on students' shoes will help him to understand them.

Dealing with this situation, the second participant (T2) has several ways. Those are persuading students to take a part in the learning, giving more attention to them, giving warning, reporting to the homeroom teacher, and even communicating to the students' parents. It seems that the second participant (T2) also really cares with his students.

1.2.7. The way English teachers develop the students' potentials in English and overcome the shortcomings

Students with different potentials are also found in the class. So, it is important to know how the teachers deal with this case. The first participant (T1) gets information about students' potentials from the activities in the class. He calls it as an observation. He observes students' characteristics and potentials in the class. He believes that students need a community to help them learning English well. So, he provides some programs at school namely English club and English agent. Those programs are available for all students.

The second participant (T2) states that if he finds a smart student, he will promote him/her to be an English agent. It is a program where there is a student who becomes the agent of English subject and he/she has several tasks such as helping friends in learning English, translating the material in the class, and leading the discussion class.

Both participants share the same ways to facilitate students' potentials that is creating community to make students feel easy in learning English by making English club and English agent program at school.

The findings would seem to show how important it is to understand students' characteristics for the teachers. The participants believe that understanding characteristics of students is important because it can help them to develop their teaching-learning strategy. By implementing learning strategy which is suitable with the characteristics of students, they believe that the learning objectives and effective teaching are able to achieve. If the learning objectives are achieved, it means the teaching-learning process succeeds. It is in line with Juhana (2014) who claims that young learners' teachers are necessary to know and understand the characteristics of young learners because it can affect many aspects of teaching such as teaching style, methods, learning materials, lesson plan, and the way of getting along with them so that effective teaching is achieved.

The findings revealed that teachers' beliefs on understanding characteristics of students affect their teaching practices. The participants believe that teaching children need a special requirement that is teacher must be creative and it is not like teaching adult. Their beliefs support Harmer (2007) who states that teaching young learners are different from teaching adult. The participants believe that the more they understand their students the better they can teach them. They add that if they know their students' characteristics well they can help their students when they have a difficult time in learning.

The participants view young learners are students who study English in primary school. According to them, young learners prefer learning in fun way, as a result, they develop their learning strategy into interesting activities such as doing a project, playing games, making a puppet, presenting something, and performing. This is consistent with Hashemi and Azizinezhad (2011) who think that fun activities will help young learners remember language materials presented better. They also believe that students love doing physical movement so they provide some activities which facilitate their need such as having outing class and role-playing. These beliefs correlate fairly well with Brendon (2012) who states that physical movement becomes an essential part of children learning. Both participants stated that young learners tend to have high curiosity in learning. They want to know anything and try everything. This fact is in line with what Harmer stated that young learners generally show their enthusiasm in learning and curious about the world around them (Harmer, 2007).

As far as the participants aware the role of the teachers is not just to deliver the material so that they do care to their students. In some occasions, the participants ask the students about their problems and needs. They give the opportunity to their students to ask and to share their opinion in the class. They help their students to face their difficulties in learning. They even give an additional lesson to the students who need special treatment. In this case, the participants do their role as a professional teacher who guides students in learning. These beliefs fit with Brazelton and Greenspan (2000) in Linse (2005) who state that children require professional teachers who interact with them in appropriate ways based on their social or emotional, physical, cognitive, and moral development.

The teachers' beliefs on understanding characteristics of students are reflected in the teaching practices. Teachers identify the characteristics of their students from the teaching-learning activities. They talk to the students about everything. Sometimes, the participants offer their students the chance to make their own choices when it comes to learning. For example, if the students already know the material and want to learn other things, the participants will facilitate it. Choice can be a powerful motivator because it helps to foster student interest and independence.

The participants also give the opportunity to each student to actively participate in the class such as by facilitating students to speak in English during the learning. For example, in the teaching-learning process, the participants try to make their lesson interactive. They do

not only stand in front of the room and deliver the materials to the students but they make learning to be more interactive by questioning students about the material and also their opinion about something. They believe that if they involve students and make their lessons interactive, their classes become more interesting. Then, the participants also give attention to the students' difficulties and ask their opinion about the material discussed without judging them. They believe that students are more interested in learning when they are a little more relaxed. They try not to take teaching so seriously.

The participants also create a classroom game where all students can join in. They believe that games are a great way to keep lessons interesting. Games make learning fun, and games in class are a prescription for happy children. In choosing the material given, the participants try to create a real-world connection to what their students are learning. According to them, this will give their students a better understanding of why they need to learn what the participants are teaching. The participants believe that it is very helpful to help the students to make a connection between what they are learning in class and how they will use the information in the future. Then, they also communicate with the homeroom teacher and also students' parents about everything that happened to their students.

4. Conclusion

This research has underlined the importance of understanding the characteristics of students for teachers. In the context of teaching English to young learners, the participants believe that teaching young learner is different from teaching an adult. As they stated that their students are heterogeneous. They have different characteristics, needs, capacities, and difficulties in learning.

The evidence from this research points towards the idea that it is important for teachers to know their students as learners. Teachers who know how their students learn can guide them and lead them to grow in their learning. Teachers who also know their students as unique individuals can help them to face their difficulties in learning and embrace their potentials.

The participants' beliefs about understanding characteristics of students are reflected in the practices. To deal with the students who have different characteristics and needs, they do some strategies in learning. Firstly, talk to the students. Talking to students is one of the ways to understand students' characteristics. Having a natural conversation with the students such as about their learning and what interest them outside of the world academics will strengthen the relationship between teachers and students.

Secondly, give an opportunity for students to actively participate in learning such as making the lesson interactive. Thirdly, play with students. Playing with students is also the best way to get to know the students. Students, especially young learners want to have some fun with their teachers. When it comes to teaching, teachers need to have some fun with the students as well. Fourthly, choose materials which are close to the students' life. The last is to communicate with the students' parents so that the students will get supports in learning.

The present findings might enlighten other teachers to give more attention on understanding characteristics of their students and inspire other researchers to explore the challenge teachers faced in understanding their students.

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A CORPUS ANALYSIS OF ARGUMENTATIVE STRUCTURES IN ESP WRITING

Research Article

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A CORPUS ANALYSIS OF ARGUMENTATIVE STRUCTURES IN ESP WRITING

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Abstract

One of the challenges in English for Specific Purposes (ESP) classrooms is teaching writing genres, especially to students who come from fields that are taught in L1. This is presumably "not only because different languages seem to have different ways of organizing ideas and structuring arguments but because students' prior writing experiences in the home, school or elsewhere do not prepare them for the literacy expectations of their university or professional workplace" (Hyland, 2013, p. 95). In our study, we analyze 36 argumentative essays written by students of Political Science and International Relations in an English for Social Sciences (ESP-adapted) course taught at the West University of Timisoara in Romania. The essays are written in English and the students' L1 is Romanian. The aim of the study is to find out to what extent argumentative structures in English are influenced by Romanian academic writing genre norms. For our analysis, we use corpus linguistics methods, looking at frequencies and phraseology patterns as well as prominent rhetoric features related to argumentation. We argue that translations of Romanian structures feature prominently when descriptive moves (description, definition, enumeration) are employed.

Keywords: ESP, corpus linguistics, argumentation, English for Social Sciences, Academic Writing in Romania

1. Introduction

ESP classes within higher education have the purpose of equipping students with English skills necessary for their future careers. As such, they tend to focus more on teaching specialized lexis and rhetorical moves to be used in discipline-specific oral communication and functional writing, and less on academic writing. The students themselves are less motivated to focus on academic writing because they often misjudge which skills will be useful in their career. In reality, many of them go on to pursue graduate courses, often in English, and have trouble adapting Romanian academic writing genre norms to the Anglo-American style. This

paper stems from our desire to bridge the gap between these two writing cultures by discussing which moves to differ and will need to be adapted by students accordingly.

In the first part of this paper, we discuss academic writing cultures in Eastern Europe in general, with special focus on Romania so to offer a context for our research and the assumptions underpinning it in lieu of a tentative literature review. In the second part of the study, we analyze our students' essays, focusing on interlanguage Romanian-English translation, argumentative structures, and rhetorical patterns related to authorial responsibility. We argue that translations of Romanian phrases feature prominently when certain descriptive moves are employed. Finally, make some practical recommendations to be implemented in ESP class.

2. Literature review

2.1 Academic Writing in Eastern Europe

Writing, as a part of university curricula, and connected subjects such as composition or rhetoric, is a tradition associated with the United States, and later with the United Kingdom. Research in the field of academic writing in Central and Eastern Europe, as well as writing support for students and faculty, however, has only recently become a point of interest. The reasons for this are varied and have as much to do with the historical development of higher education institutions in the region as with contemporary European and international politics.

What we refer to here as Eastern Europe are the countries that not only belong to the geographical region eastwards of Germany and Austria, but that share common historical, social and economic traits. Generally, these countries are understood in opposition to Western Europe and are ones that were part of the Soviet sphere of influence during the Cold War. As far back as the 18th Century, Eastern Europe was seen as the so-called "oriental" part of Europe, "left behind" by the industrialized West (Armour as cited in Chitez et. All, 2018, p. 3). This perception of the region continued up until the fall of communist regimes in the area, aided in part by the economic failures of those centralized economies and partly by soft power strategies of the actors of the post-World War II political scene.

Since the fall of the communist regimes in Eastern Europe, the discussion has centered on bridging the gap between the West and the East, not the least through the inclusion of Eastern European countries into the European Union, which brought about economic, legislative and socio-political reforms. As such, Eastern European countries share a number of features, such as the diversity that comes from always being at the meeting point of several political power blocks, and that can be seen in the organization of their relatively young modern institutions, which are the product of these different traditions, struggling to adapt to the pressure of changes

that are often imposed top-down. While they do share these general characteristics, Eastern European countries have each pursued and achieved institutional modernization at their own pace, with Romania often lagging behind.

Universities, from this perspective, are no different from other institutions in Eastern Europe. The oldest universities in the region, with some notable exceptions, were established in the nineteenth century following the Humboldtian model in its Austro-Hungarian version and adapting it to local needs (cf. Charle, 2004). After 1945, most Eastern European universities underwent a process of Sovietization, which subordinated tertiary educational institutions to the state and the needs of the economy. According to Neave (2011), this led to economy-oriented specializations, such as technical, medical, or agricultural studies, and separation between teaching and research, the latter being relegated to different institutions like academies or institutes. Most universities and research institutes in Eastern Europe were established during this period, following the Soviet model.

Academic writing practices in the region today need to be understood in the context described above. While writing is the primary means of assessing student knowledge, it is generally not taught at university and little research on academic and student writing is conducted. Since the adoption of the Bologna Process, at many European universities, including the ones in Eastern Europe, students have to write a thesis to complete each of the three university cycles (B.A., M.A., and PhD). In spite of this, according to Chitez et al., "the ability to produce written text [is] generally considered to be a matter of talent and intuitive assimilation of models rather than a skill that can be taught" (2018, p. 6). As a consequence, most students get little practice writing as a means of disseminating research before they write their, B.A. thesis, learning as they write, on their own or from their advisor's notes, with the exception of writing courses in English departments.

Over the past decades, globalization has pushed English to become the lingua franca in the academia, which has led to the leveling of academic genre norms, mostly borrowed from research written in English in the Anglo-American tradition. Countries in Western Europe were the first to borrow methods for the study and teaching of academic writing, but Eastern European countries are also starting to follow suit. Harbord (2018) shows that the American tradition, which was born at Harvard at the end of the nineteenth century, has its roots in the Enlightenment ideal of liberal education, i.e. the educated citizen, capable of lucid argumentation. In the United Kingdom, the lucrative influx of international students into British universities in the 1980s have created the need for the establishment of the discipline English for Academic Purposes, or EAP, aimed at foreign students desiring to become

integrated into British universities (cf. Harbord, 2018). Both the American and the British model for teaching and tutoring writing were popularized in continental Europe by hegemonic endeavors to gain cultural and political influence, especially in Eastern Europe, by American university branches abroad and the work of the British Council. Universities in Eastern Europe are under the additional pressure of European integration, which here is synonymous with progress.

2.2 Academic Writing in Romania

Romanian universities have followed the same general trajectory of other Eastern European universities. Before 1945, they were organized according to the nineteenth-century German, and especially French (Napoleonian) model due to an affinity felt by Romanians towards French culture as speakers of a Romance language (cf. Charle, 2004). After World War II, Romanian universities were reorganized according to the Soviet model like many universities in the region (cf. Rüegg & Sadlak, 2011). The past 25 have been marked by numerous reforms, "as well as an increasing impact of UK and US models, due to factors such as the internationalization of higher education, the widespread use of English in scientific and professional communities, and, since 2007, EU accession and the increased mobility of academics, researchers, and students" (Borchin & Doroholschi, 2016, p. 179).

Even though Romanian higher education has adhered to the Bologna Process and by law No. 288/ 2004 students are expected to write theses to graduate from each of the three university cycles, academic writing teaching in Romania is not guided by educational policy and writing support is provided according to each university's internal policies. As Borchin and Doroholschi (2016) report, writing centers do not have a traditional role within universities. University students in Romania are expected to have learned academic, as well as professional writing, in high school. Borchin and Doroholschi (2016) have shown that the genres learned in high school do not correlate with academic genres students are expected to produce during their tertiary studies, or as members of the research community of which they might become a part. The students' learning curve is highly dependent on individual circumstances, such as their institution's offer of compulsory or elective writing courses, the approach their thesis advisers take to writing, or very infrequently the presence of a writing center within their institution. According to Borchin and Doroholschi, the "small number of existing academic writing guides and textbooks usually unsystematically follow the international literature in the field (predominantly French or Anglo-Saxon), and they tend to create a hybrid between the structures and norms recommended by these sources and those traditional in Romanian academic writing" (Borchin & Doroholschi, 2016, p. 181).

Recently, several comprehensive attempts to deal with these issues have been made in the form of large-scale Europe-wide projects, such as those undertaken by the West University of Timisoara's Modern Languages and Literatures Department's two projects funded by the Swiss National Science Foundation. Literacy development in the humanities: creating Competence Centres for the Enhancement of Reading and Writing Skills as Part of University Teaching / LIDHUM (2011-2014), documented in Chitez et al. (2018), is an institutional cooperation project in which faculty members of the partner universities (from Switzerland, Romania, Ukraine and the Republic of Macedonia) were involved. LIDHUM focused on current issues in the teaching of writing and the uses of writing in teaching. It has resulted in many new writing courses (both in English and the national languages) as well as some new writing centers at the participating universities. In fact, the first academic writing centre (Centrul de scriere academică și profesională / CSAP) was set up at the West University of Timisoara as a result of the project and it still functions for academic writing course provision at the university. The second project, SCOPES Valorization Grant, financed the organization of the first academic writing conference in Romania in 2013.

Another former project at the West University of Timisoara concerned with academic writing is the EU COST Action IS0703 The European Research Network on Learning to Write Effectively (2008-2012) which has led to a strengthening of European writing research (Torrance et al., 2012). The main objective of the project was to improve our understanding of how written production is mastered and how this learning process can be made more effective for each and every European citizen, especially children at school and adults in the workplace. Currently, the university is also involved in the follow-up COST Action IS1401 - Strengthening Europeans' Capabilities by Establishing the European Literacy Network (ELN) (2014-2018).

While all these projects were essential for the diagnosis of academic writing challenges faced by Romania and other European countries, it is the project *Academic genres at the crossroads of tradition and internationalization: Corpus-based interlanguage research on genre use in student writing at Romanian universities* (ROGER) that focuses specifically on Romanian higher education. The aim of the ROGER project is to develop a methodology for the analysis of academic writing genres at Romanian universities from a contrastive perspective: genres written in Romanian versus genres written in English. This will contribute to understanding what and how students write at a university level in both English and Romanian by contrasting writing in the native tongue with writing in a foreign language. One of the project's main components is a searchable corpus which will be used for ROGER and further research. The objectives in the project are the identification, analysis, measurement and

evaluation of the relevant rhetorical and linguistic features of the same genres written in either of the two languages (native Romanian, L2 English) in order to determine the degree of similarity or divergence from similar writings of native English speakers (L1 English). The preliminary results of a survey analysis conducted as part of a study confirm the lack of systematic teaching of the genre at university level which results in the conflation of several academic genres (e.g. essay and research paper) under all-encompassing terms, such as *referat,* which favor the Romanian academic writing tradition and style.

2.3 The Main Features of Romanian Student Writing

To date, three studies have focused on the university writing of Romanian students. Băniceru et al. (2012) showed that "[t]he 'traditional' Romanian practice of writing can be characterized as implicit, 'author oriented', 'concerned with style', lacking theoretical reflection and an appropriate methodological approach" (p. 321). Of late, the study seeks to prove, the influence of Anglo-American models has enacted subtle but undeniable changes in Romanian research writing. Analyzing the introductions of B.A. theses in English and Romanian, the authors point out that an incomplete and mechanical adoption of the Anglo-American model characterizes student writing, identifying "7 moves most typically used in the corpus of diploma paper introductions, and concluded that the "descriptive" moves and steps (introducing the topic, presenting the structure of the paper) prevailed over the more "reflective" moves (summarising previous research, indicating a gap in previous research)" (Băniceru et al., 2012, p. 320).

Linguistically, the study identifies the influence of the Romanian academic style on student writing in English in the use of personal deictics. Romanian academic writing norms advise against the use of the first person singular, and this is evident in the analysis of Băniceru et al. (2012), who note the sporadic occurrences of the forms of the first person in Romanian texts (eu (I) and noi (we) or first person verbs) and the very frequent use thereof in texts written in English. They conclude that

> Romanian authors choose to "de-personalize" their voice, transferring all merits to the paper itself. This difference speaks about the two still distinct "traditions" of academic writing, since all students writing a diploma paper were free to choose between the two solutions, namely pointing to the author or pointing to the paper itself. (Băniceru et al., 2012, p. 331)

Băniceru and Tucan's study (2018) reveals similar perceptions about academic writing from the part of students. Noting that more often than not, academic writing in Romania is not taught explicitly but by encouraging students to emulate good writing and sometimes correcting their

failure to comply with implicit writing practices, the authors seek to find out what the faculty and the students of the West University of Timisoara see as successful writing. Their statistical analysis of the questionnaire reveals that students assume that "good writing" should be defined by terminological accuracy, the use of figurative language and avoiding *I,* and less by convincing arguments and critical thinking (B). The authors explain the importance attributed to figurative language to preconceived ideas about writing and style, through which academic writing is associated with "elegant, even bombastic language, with elaborate sentences and sometimes even with high-flown style and excessive use of verbal ornamentation" (Băniceru & Tucan, 2018, p. 107). While the study does not address this issue, we assume that the important attribute to terminological accuracy might be a result of writing being used in examinations which encourage reproduction of course notes.

Chitez' *Corpus Linguistics Meets Academic Writing: Examples and Applications in the Romanian EFL Context* (2018) provides additional insight into linguistics features of writing in English done by students whose L1 is Romanian. Chitez (2018) calculated frequency rates for part-of-speech categories such as nouns, verbs and prepositions. Data indicates that "top-ten most frequent nouns coincide with the most used nouns by native speakers" (Chitez, 2018, p. 205) whereas, in the case of verbs, the most used tokens are different in English L2 compared to Romanian. Among the nouns that tend to be overused by the Romanian L2 users are "life", "world", "way", "society", "man", "fact"," person", "death", "problem" and "child". A number of verbs are also used more frequently by the Romanian students than by native speakers (e.g. "think", "want", "know" and "say") but there are also verbs which are exclusively prominent in the L2 writing while rather unused in the native-English texts: "cause", "choose", "commit", "exist", "feel", "forget", "go", "help", "hope", "kill", "love", "start", "suffer" or "work". Among prepositions which shape the lexical profile of the Romanian student ESP text, due to overuse, Chitez (2018) mentions "from", "about", "like" and "between" for simple prepositions, and "in front of", "in spite of", "by means of" and "except for", from the category of complex prepositions. The study emphasizes the lexical preferences of the ESP students compared to the lexical preferences of the L1 students. A comparison with the ESP students' L1, i.e. Romanian, which the present study investigates, offers, therefore, the missing perspective regarding the cause for overuse or underuse of certain linguistic elements, which might be related to the interference with the mother tongue.

3. Methodology

The second part of the present paper will perform a quantitative analysis of frequency and phraseology patterns in 36 argumentative essays written by undergraduate students of Political

Science and International Relations who were attending an English for Social Sciences course (ESP-adapted) as part of the compulsory curriculum, and whose L1 is Romanian. We contrast this corpus, which we have named RISEESP and which is made up of 19.225 words, to an expert corpus we compiled (RISEexpert). While RISEESP is composed of student texts written in English, RISEexpert is a corpus we created from political editorials, blog and journal articles in Romanian. RISEexpert contains 50 texts and a total of 54.119 words.

We proceed from the assumption that since they are receiving relatively little instruction in English academic writing which is not a priority in their studies, the subject being worth only 2 credits, our students resort to emulating models they come across or transfer their knowledge of Romanian academic writing into English. For the analysis, we used Words, Whelk, Ngrams tools of the programs LancsBox (Brezina, McEnery & Wattam, 2015) and WordSmith (Scott & Stroud, 2016).

3.1 Purpose of the Study

While our students were already taking an academic writing class in Romanian, they were unfamiliar with English academic writing genre norms, which are quite different. What is more, many of them still have problems with successful argumentative essay writing in general for cultural reasons. The aim of this study was, thus, to see where the academic-writing-oriented tasks in our class failed to register with our students in order to develop more focused tasks that would coordinate better with the academic writing training they are already receiving, focusing on frequencies and phraseology patterns, and prominent rhetoric features related to argumentation as well as Anglo-American academic writing genre norms.

3.2 Participants and Setting

In Romania, and consequently at the West University of Timisoara, it is mandatory for undergraduate students to take four semesters of Language for Specific Purposes, with the students being able to choose whichever language their university has on offer. Popular choices are English, Spanish, German, French, or Italian, but sometimes students choose languages that are not taught in schools in Romania, such as Portuguese, Chinese, Russian, Korean or Arabic. By the end of four semesters of study, the students are required to have reached at least level B2 in the language they choose. The majority of students choose to study English for Specific Purposes because many of them learn English in high school and already have a good command of the language. As a result, the groups are quite large (around 30 students) and heterogeneous, the participants' language level varying from A1 to C1.

In our case, the focus group is undergraduate students in their first and second year of study. They study Political Science and International Relations and, after completing a placement test,

they were assigned to the more advanced group of two in their year, their language level being B2. When they first enroll in their program of study, most of them aspire to become diplomatic or other political aides and are often more motivated to learn vocabulary related to their field and practice reading (especially legal documents, newspaper articles on current affairs) and speaking (speeches, debates on political topics). However, most students enrolled in this program eventually follow a research track, enrolling in a master's program offered by the same department and taught in English. Additionally, many of them spend one or two semesters abroad as exchange students at more research-oriented universities. Most of the students will eventually be expected to produce research papers in English.

4. Results

The basic frequency analysis shows that in the RISEexpert corpus the ten most frequently used words in Romanian in this case are: *de, si, in, a, ca, sa, la, o, nu, care* (EN: *of, and, in, to, to, to, a, no, which/that*). In the student corpus in English (RISEESP), the most frequent tokens are: *the, to, of, and, a, in, is, that, it, are*. Considering that the definite article *the* does not exist as a separate token in the Romanian language and that *a, ca, sa* are all to be translated as *to*, the same words appear in a similar number of instances, with the exception of *nu* (EN: no/not) and *are*. While this alone does not suggest an interference of Romanian in English student writing, it has been noted before that, when learner corpora of Romanian students writing in English are compared to native corpora, a higher frequency of the definite article *the* and of the preposition *of* is evident (cf. Bercuci & Chitez, 2019).

Figure 1 contrasts percentages of the most frequently used words in Romanian and in English. The high frequency of *de*, *se* and *a* suggests a tendency to use reflexive voice (with a passive meaning) rather than the active voice in Romanian. The high frequency of *este* together with *o/un* and *care* suggests a proclivity for description or definition in Romanian. The use of *si* suggests a preference for enumeration or simultaneity, while only *ca* and *sa* point to the move towards stating a purpose or explaining a cause-effect relation in Romanian.
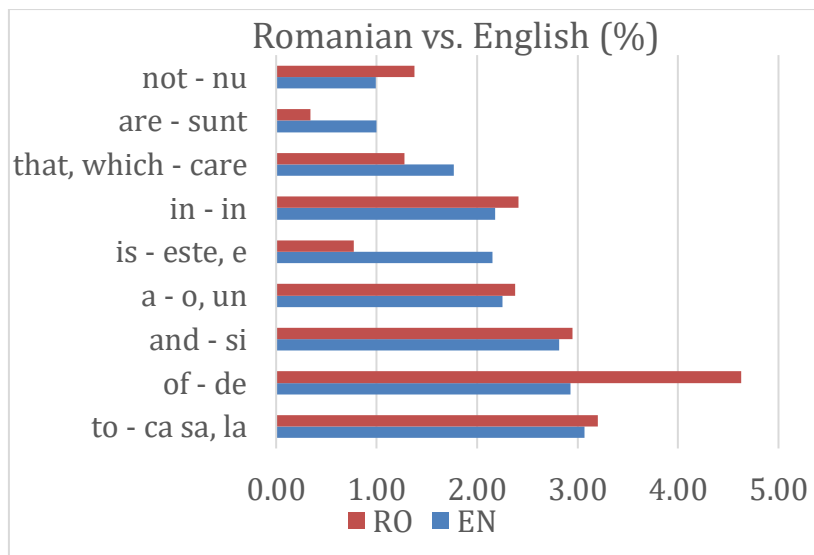
Figure 1: Comparable high-frequency words in Romanian and in English

In English, students use the verb *to be* and relative pronouns, such as *that/which*, even more than in Romanian, showing a preference for definition as well. Words that typically introduce or support arguments appear in the student texts with low frequency: *because (0.52%), influence (0.23%), example (0.18%), why (0.06%), reason (0.03%), effect (0.02%).*

The analysis of three-word NGrams shows some interference from the Romanian language. The Romanian expert corpus exhibits repetition and lexical simplification (*punct de vedere*), along with frequent orality markers (*pur si simplu)* and a hedging tendency (*ca ar fi, ar fi fost).* In the RISEESP corpus, the most frequent three-word NGrams are patterns of organization (*first of all, on the other hand, in conclusion, one the one hand*), argumentative patterns (*in order to*), and patterns used to express opinion similar to those in the Romanian corpus (*I believe that, point of view, in my opinion).*

Interference from the Romanian language is apparent in the use of some phrases, such as *point of view (*RO*: din punct de vedere), when it comes to (*RO: *in cee ace priveste),* which are used with high frequency. A close reading of the text excerpts where these phrases occur revealed unidiomatic usage in most cases. Consider the following sentence:

Point of view: "From the point of view of politics" (RO: *din punct de vedere politic*)

The following Ngrams appear with high frequency in both corpora: *first of all, when it comes to, on the other hand, point of view.* Comparing the frequency with which these phrases appear in both corpora (Figure 2), we discovered that students tend to overuse the same phrases meant to organize a text. All are typical linkers in both Romanian and English. Their higher frequency in English shows a tendency to resort to formulaic structures taught in class, which are also

part of the marking rubric. The use of these structures, however, does not always or necessarily mean the essays in which they appear use them effectively.
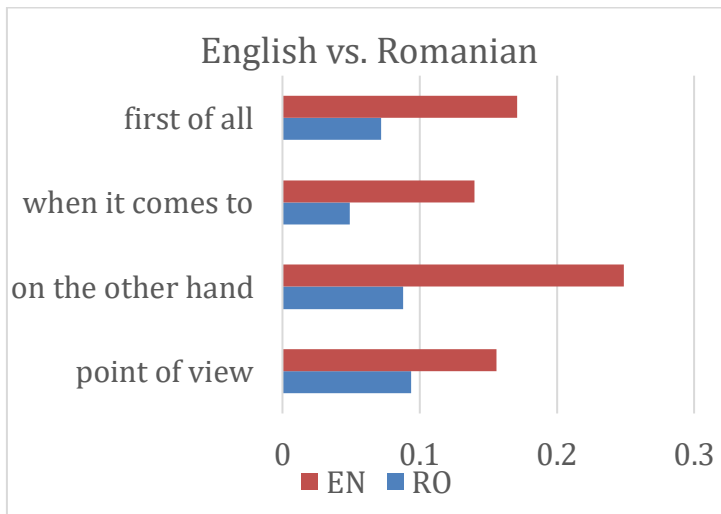

Figure 2: NGrams in English and Romanian

Next, we performed a Welk analysis of the use of *I* in the learner corpus, RISEESP, to gauge the extent to which the authors of the papers are willing to take responsibility for the positions expressed in their argumentative essays. The analysis revealed that 26 of the 36 texts take the first-person perspective, i.e. 72.2%. Figure 3 shows 15 instances in which *I* is used.

Figure 3. Use of I

This suggests that the point of view in Romanian does not affect use in English. There is recurrent use of personal pronouns (*we, I*): *the way we, I believe that*. The use in these pronouns in ESP writing is perceived differently as in L1. That this is so is unusual in relation to other published analyses of learner corpora of English texts written by students who have Romanian as their L1. There are two possible explanations for this.

The first reason why the students could be comfortable using the first person in their argumentative essays is that being at the beginning of their academic journey, they have not yet internalized the Romanian academic register which requires them to depersonalize their writing. Additionally, they often feel very passionately about the topics of their essays, taking very personal stances and often not being able to keep their intellectual distance for the topic at hand.

The second possibility is that the students have successfully gauged the difference between the two writing cultures and have internalized English academic writing norms related to authorial responsibility. Informal interviews with some of the students suggested the same. The second-year undergraduates, who by the time they were assigned these essays had already completed their Romanian academic writing course, were aware of some of the differences between the two writing cultures. The first-year students, however, used the first person instinctively, as they would in informal writing or in-class debates.

5. Discussion

The results of our study reinforce several conclusions to which other works on Romanian academic writing came. The writing of our focus group students showcased some of the same interference from Romanian that previous studies have noted: the overuse of *the* and *of,* the takeover of some structures typical of Romanian (*point of view*, *when it comes to),* used unidiomatically, and, most importantly structures used to signal descriptive moves.

Unlike previous studies, our students were not averse to taking authorial responsibility for their arguments. However, it was not clear if this was a result of understanding the difference between Anglo-American and Romanian writing cultures or slips in the use of formal register. Noting this limitation to our study, we would suggest that other similar studies include informal interviews with the students as well as a more careful correlation between their learning progress and the use of first-person point of view.

All in all, through the identified examples, our study primarily highlighted two avenues where further research is required: (a) consistent studies (e.g. corpus-based) in the area of Romanian-English interlanguage research, so that an inventory of lexical-grammatical features transferred from Romanian into L2 English can be drawn up and pedagogically exploited; (b) corpus-informed contrastive rhetoric studies related to the use of ESP by Romanian speakers, so that specifics can be identified and, as above, included in teaching materials.

5.1 Implications for education and teaching

In light of our results, we recommend that ESP classes approach academic writing by stressing the problem areas mentioned above: the overuse of *the* and *of,* the takeover of some

structures typical of Romanian (*point of view*, *when it comes to),* used unidiomatically, and, most importantly structures used to signal descriptive moves. To address these issues, we recommend corpus-consultation exercises, such as the following:

Expert Corpus as Support for Academic Writing in L2

Students can be asked to compile and expert corpus of research articles written in English in their field.

Corpora Can Facilitate Induced-Learning Writing-Related Tasks

Students can be asked to analyze corpora in L2 or to perform contrastive analyses between Romanian and English expert corpora in their field to discover salient features of academic writing in both languages.

Corpora as Control for Reference Instruments

Students can be given the task of checking their writing in terms of phraseology and vocabulary against expert corpora and adapt it according to the results of the analysis.

Corpora as Support for Academic Writing Tools

Students can be given access to a specialized corpus as part of an academic writing tool that can offer them real-time support in their writing process.

6. Conclusions

The contrastive interlanguage analysis of the self-compiled corpora (corpus of student learner Romanian ESP versus expert L1 Romanian) indicates that, as emphasized in the introductory part of the article, the Romanian academic writing norms represent a mixture of features which reflect the tendencies of the whole educational system: the shift towards internationalization. This is especially prominent when interpreting the results of the authorial responsibility argument markers, the students showing authorial responsibility by using the 1_{st} person, fact which is not specific to the Romanian academic writing. The switch to the informal register, in some cases when students use the 1_{st} person, demonstrates, at the same time, the confusion generated by norm mixing.

The set of argumentation-relevant constructs in RISEESP, i.e. most frequent discipline-specific tokens and Ngrams, can be divided into three two groups: (a) argumentation patterns based on similar grammatical key elements in both varieties (e.g. prepositions *in*, *to*); (b) overuse in ESP (e.g. definition patterns using the verbs to be or the relative pronouns *that*, *which*); underuse in ESP (e.g. negation or preposition *of*).

As for argumentative patterns, we have shown that the students used Romanian-influenced phrases that introduce arguments (e.g. *first of all*, *on the other hand*), but were rather inclined

to use typical linkers taught in class and present in the marking rubric. They were, however, sometimes used mechanically and incorrectly.

Our analysis also showed that, in terms of interference from L1, i.e. Romanian, the essays transferred by direct translation certain phrases and rhetorical patterns typical of their mother tongue into their ESP writing. For example, phrases such as *point of view* (RO: *punct de vedere*) and *when it comes to (*RO: *în ceea ce privește)* appear frequently in Romanian ESP texts and they are used unidiomatically.

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UNDERSTANDING LANGUAGE TEACHER AUTONOMY: A CRITICAL REALIST PERSPECTIVE ON EFL SETTINGS IN TURKEY

Research Article

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UNDERSTANDING LANGUAGE TEACHER AUTONOMY: A CRITICAL REALIST PERSPECTIVE ON EFL SETTINGS IN TURKEY

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Abstract

This study examined the understandings and exercise of teacher autonomy and aimed to uncover the deep structure that might shape these in the EFL context in Turkey. The study relied on a range of data sources including documents, a questionnaire, observations and interviews with Turkish teachers of English, headteachers and educational administrators. Our findings highlight a complex interplay between structure and agency that underpins the emergence of teacher autonomy. We conclude that we need to extend our understanding of language teacher autonomy and identify the underlying mechanisms that shape the development and exercise of teacher autonomy within a particular context.

Keywords: teacher autonomy, teaching and assessment, school management, professional development, and curriculum development

1. Introduction

The concept of teacher autonomy is a topic of increasing interest to educational policymakers internationally and it has also been a topic of major concern in the field of applied linguistics for language learning and teaching since the 1970s. In many parts of the world (e.g. most of the European countries), the discussions around teacher autonomy have gained momentum as a result of decentralisation trends (Eurydice, 2008, Lundström, 2015). Teachers have been assigned new responsibilities and have become actively involved in decisions in their work contexts. This can be considered as a natural consequence of the decentralisation processes. However, this does not necessarily mean that teachers are fully autonomous. In the United States, Sparks and Malkus (2015), for the National Centre for Education Statistics, report that today's teachers are less likely to feel that they have a great deal of autonomy than they have been in the past. At the same time, they note that 'teachers who perceive that they have less autonomy are more likely to leave their positions … or leav[e] the profession altogether' (p. 2). Teacher autonomy, they conclude, is closely related to teacher satisfaction and teacher attrition rates.

In Europe too, teacher autonomy is seen as playing an important role in improving the quality of education. Focusing on changes in the teaching profession in recent years, research conducted by the Eurydice European Unit (Eurydice, 2008) provides a comparative analysis of teacher autonomy and the educational responsibilities of teachers in European countries. According to Eurydice (2008), the autonomy of individual teachers is ever more limited by the dominance of team-based approaches to curriculum and assessment and by a growing reliance

on school leadership as a driver of change. While this is the case in decentralised education systems, the questions of what teacher autonomy means to teachers, schools or to top-level authorities in centralised and authoritarian education structures and whether or how it is implemented in these structures makes Turkey an interesting research context for an enquiry into teacher autonomy. Researching centralised education systems and the place of teacher autonomy within them contributes to gaining a complete and richer understanding of the concept of teacher autonomy across different educational structures. In fact, no education system or individual school is fully autonomous. Consequently, insights into how teachers exercise autonomy in centralised systems can be of equal help to those working in decentralised education systems. Our work offers insights to inform practice in a range of contexts.

The article first discusses Turkey's centralised education structure and some of the key changes it has undergone in recent years. Next, it explores the theoretical foundations of teacher autonomy by drawing on previous research in applied linguistics for language learning and teaching and introduces the approach to teacher autonomy taken in this study. The article then proceeds to present the methodology that has been devised to understand the exercise of teacher autonomy in the Turkish context. Lastly, it presents the key findings and concludes with an account of both the strengths and the limitations of this research study, before offering recommendations for further research.

1.1. The Turkish Education System

Turkey has a centralised educational structure which originated in 1924 (OECD, 2013). The Ministry of National Education (MoNE) is responsible for all educational activities for each school in the system on behalf of the state, and the general directorates and their units are responsible for different aspects of education and policy compliance (MoNE, 2005a). The education system, nevertheless, espouses democratic principles such as equality, the right to education, the needs of individuals and society, and cooperation between school and family as its base (MoNE, 2001; MoNE, 2005a). In recent years, many curricular and structural changes have taken place in the Turkish education system. One such initiative is the 2023 Vision Strategy.

One of the aims of the 2023 Vision Strategy of Turkish Republic is to improve the quality of education particularly by promoting the idea of people-oriented management in schools, which values a participatory approach. This undoubtedly implies more autonomy for schools and teachers. Since the announcement of the 2023 Vision Strategy, a number of changes have taken place in the education system. These include the implementation of the 12 years compulsory education programme, award ceremonies for innovation in education, the introduction and subsequent abandonment of a new centralised assessment system, TEOG[1], for lower secondary schools which pupils attend in Years 5, 6, 7 and 8 (ages 9-12), the announcement of a democratisation package and the implementation of a quality management system. Despite these changes however, the level of English language proficiency remains very low in Turkey (EF English Proficiency Index, 2018).

2. Theoretical background

2.1 Language teacher autonomy

A predominant thread in discussions about teacher autonomy in the field of applied linguistics for language teaching and learning is the idea that teachers who themselves are autonomous may have a positive influence on the development of autonomy in their students (Little, 1995, 2000; Balçıkanlı, 2009; Lamb and Reinders, 2008; Al-Asmari, 2013). In these

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1 A new system has been introduced in 2018: Transferring to Secondary Schools.

studies, the notion of teacher autonomy usually designates a professional capacity, which is acquired through self-directed professional development and this is linked to a commitment on the part of teachers to foster learner autonomy in their classrooms (Benson and Huang, 2008). In other words, the extent to which teachers are able to foster learner autonomy in their classrooms is regarded as an indicator of their own autonomy.

There have also been those in the field who conceptualised teacher autonomy slightly differently (e.g. McGrath, 2000; Wilches, 2007; Smith and Erdoğan, 2008; La Ganza, 2008; Huang, 2013; Raya and Vieira, 2015). According to McGrath (2000), for instance, teacher autonomy should not only been seen as a prerequisite for learner autonomy but as an important element in teacher professionalism. Smith and Erdoğan (2008) also argue that we must go beyond our own discourse community, if we want our views on learner and teacher autonomy to be taken seriously. Smith and Erdoğan (2008) define teacher autonomy as 'the ability to develop appropriate skills, knowledge and attitudes for oneself as a teacher, in cooperation with others' (p. 83).

Whilst maintaining a strong focus on the interdependence of learner autonomy and teacher autonomy, La Ganza (2008) examines teacher autonomy in terms of teachers' relationships with others. She recognises that teachers' professional relationships with other individuals within the educational or bureaucratic institution might have an influence on the teaching process, on the teacher's freedom to be creative, on developing and practicing ideas and pursuing his or her ideals. According to La Ganza (2008), teacher autonomy is an 'interrelational construct created within four main kinds of relations' (pp. 72-77): teacher-internal teacher relationships, teacher and learner relationships; teacher and institutional relationships; and teacher and bureaucracy relationships. Raya and Vieira (2015, p. 23), on the other hand, propose that teacher autonomy is about 'being willing and able to challenge non-democratic traditions […] and this entails the ability to question reality as we believe *it is* and explore possibilities that make it closer to what we believe it *should be* [original emphasis].'

To conclude, within writings on teacher autonomy in ELT, a tendency is noticeable towards seeing the concept of teacher autonomy as a necessary condition for developing learner autonomy and as a concept that is restricted to the classroom or language-related issues. However, our investigation convinces us that scrutiny of the exercise of autonomy by language teachers needs to be extended, to encompass not only their classroom practice but also the wider organizational roles that they are called on to play.

2.2 Towards a new conceptualization of language teacher autonomy

Autonomy is a psychological need. When it is undermined, a decline in performance is inevitable (Ryan and Deci, 2006; Deci and Ryan, 2012). When people's autonomy is supported, this strengthens their attachment to their work and improves their well-being. Thus, autonomy is important for promoting better work performance and better adjustment (Deci and Ryan, 2014). Much of the literature on teacher autonomy (e.g. Friedman, 1999; Öztürk, 2011) suggests that it is important to enhance the autonomy of teachers because enfranchising them improves the quality of their teaching and helps them cope with changes in the education system.

A growing body of research recognises the fact that teachers take on a number of roles outside the classroom and fulfill a variety of tasks as professionals within their working contexts (Biddle et al., 1997; Katzenmeyer and Moller, 2001; Frost, 2012; Kelchtermans, 2013). They are assigned a number of curricular and non-curricular tasks such as 'maintaining order, protecting the school environment, holding meetings with parents, leading extra-curricular events, attending outreach activities in the community, and the like' (Biddle et al.,

1997, p. 2). However, this should not lead us to view teachers as unquestioningly applying institutional rules or performing assigned tasks in their working contexts. Instructional norms, rules, acting in conformity with others can be vital in the teaching profession but teachers are actors with private wants and beliefs that influence their intentions and attitudes (Lindblad, 1997). Teachers as members of a profession can still act autonomously and obeying instructions does not mean that one is not acting autonomously (Tietjens-Meyers, 1987, Davis, 1996). Autonomy for teachers is not utopian, but it is something that they need to claim or create spaces for (Anderson, 1987).

Friedman (1999) offers a more active image of the teacher by dividing teacher task areas into pedagogical and organizational activities. Friedman identifies four areas of teacher functioning: Student teaching and assessment; school mode of operating; staff development; and curriculum development. By drawing on these areas, this study attempts to expand our understanding of language teacher autonomy by considering the concept within and outside the classroom. In this study, teacher autonomy is described as a workplace construct in which teachers reflectively create spaces for collaboration, taking initiatives and responsibility, using discretion and participating in decision-making in relation to (a) teaching and assessment, (b) school management, (c) professional development, and (d) curriculum development.

When researching teacher autonomy, this study draws on the critical realist understanding of the relationship between agency and [social] structure, developed by Roy Bhaskar. According to critical realism, social structures already exist for every individual. Individuals do not create society out of nothing, but instead they modify it self-consciously by reproducing or transforming it 'so as to maximise the possibilities for the development and spontaneous exercise of their natural (species) powers' (Bhaskar, 1998, p. 217). Thus, this study considers teachers as active agents with emergent powers. This suggests that teachers are not powerless. By finding a way to deal with the constraints generated by social structures (e.g. the classroom, the school and the educational system as a whole), teachers can change things. This is how autonomy is seen to emerge in this study and it is at this level that teachers take steps to create spaces for autonomous actions. It is also acknowledged in this study that teachers do not simply react to the enablements and constraints of social structures like 'billiard balls' that are hit (Astbury and Leeuw, 2010, p. 370) and that their behaviour is not entirely determined by the school organisation or their role specification (Elder-Vass, 2010). Hence, we should not assume that teachers behave autonomously when there are enabling conditions but are unable to do so when there are constraining conditions. They can behave autonomously if they choose to do so and are subject to the right conditions to enable them to do so or they can choose to create their own opportunities for autonomy by critically evaluating the social structures in which they are operating. Accordingly, the research reported in this paper addresses three questions:

1. How is teacher autonomy understood in EFL context at lower secondary state schools in Turkey?

2. According to Turkish teachers of English, headteachers and educational administrators, how does teacher autonomy emerge in these schools, in relation to:

   a) Teaching and assessment;

   b) School management;

   c) Professional development;

   d) Curriculum development?

3. What are the mechanisms that shape the understandings and the practices of teacher autonomy with reference to English Language Teaching?

3.Methods

Taking a mixed methods approach, the research involved collecting and interrogating a range of data, including documents, online survey responses, on-site observation notes, and interviews with Turkish teachers of English, head teachers and educational administrators. A number of documents (e.g MoNE, 1995; 2008; 2009; 2013; Doğan, 2012; Türkiye-Eğitim. 2013) were used in this study. The selection and collection of these documents began in the very early phases of research and lasted until data analysis was completed. Documents provided information on the Turkish education system, the roles of teachers, and the way schools operate. They also guided the later stages of the study and provided a means of tracking changes within the Turkish education system.

In designing the survey questionnaire, Friedman's (1999) Teacher Work-Autonomy Scale was adapted in which teacher autonomy is regarded as an empowering construct according to which teachers can create their own spaces within the constraints present in their working contexts. The total number of English teachers surveyed was 88. The final section of the survey invited respondents to participate further in the study. Among those who expressed their willingness to participate further, three were chosen for the observation study.

The observation study participants, Mehmet, Özlem, Sema[2] taught English in a central Anatolian province. The length of observation was 17 hours 40 minutes. Each teacher was observed both in the classroom and in the wider school environment. Informal conversations were recorded. All three schools were state-run lower secondary schools and had students from mixed social backgrounds.

This study takes into account the different perspectives of stakeholders and listens to the voices of diverse participants in order to understand the deeper structures inherent in the education system in relation to teacher autonomy. Thus, five English teachers (Mehmet, Derya, Sema, Gizem, Özlem), three headteachers (Ali, Serkan, Hüseyin) and six educational administrators from three different provincial and district directorates (Hakan, Ünal, Deniz, Ahmet, Emre, Ediz) were interviewed. English teachers were selected for an interview among those who completed the questionnaire survey and stated their willingness to participate further. Three of these interview informants had previously been observed. The headteachers and educational administrators were approached in person. All interviews were digitally recorded and transcribed as soon as possible afterwards. The data obtained from documents, questionnaire responses, field notes and interview transcripts were analysed separately. Prior to data collection, ethical approval was gained from [the university's name is concealed] Human Participants and Materials Ethics Committee. This research was conducted in Turkey with the permission of the MoNE's General Directorate of Innovation and Educational Technologies.

4.Main findings and discussion

4.1 Understandings of teacher autonomy

An initial objective of this research was to explore understandings of teacher autonomy in the context of Turkish state lower secondary schools with a focus on English language teaching. By means of documentary analysis, it was possible to gain a good understanding of the Turkish education system and the place of teacher autonomy within it. The survey questionnaire, observations and the interviews conducted with Turkish teachers of English,

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[2] All names in this article are pseudonyms.

headteachers and educational administrators provided evidence uncovering how teacher autonomy was understood by those involved at different levels of the education system. In the early stages of data collection it turned out that this was a question with no simple answer.

The analysis of documents demonstrated that the term 'teacher autonomy' was not present in any of the educational policy documents despite the frequent use of the related expression 'learner autonomy.' Nevertheless, there was evidence in the data that the Turkish education system was familiar with the idea of teacher autonomy. The idea manifested itself in a variety of ways in the policy documents. Teachers, for example, were encouraged to take initiatives, to exercise discretion in order to meet students' needs, to work collaboratively within schools, to participate in decision-making processes, and to take responsibility for their own professional development (MoNE, 2005b; 2005c; 2012; 2014). As a result of the recent changes introduced to the education system, teachers were also given more of a voice in identifying their professional developmental needs, in evaluating the performance of their school head teachers once a year, in taking active roles in school related issues or participating in textbook selection panels. These panels are responsible for reviewing textbooks before the final decision is made and they are distributed nationwide. The panels comprise eight people, of whom four are subject teachers. For reviewing English textbooks, for instance, four English teachers are required to contribute.

The analysis of interview data demonstrated a high degree of commonality in the views of the participants. This gave detailed insights into the interview participants' actual understanding of teacher autonomy and its nature. Almost all the participants regardless of their positions within the education system were in support of teacher autonomy, but acknowledged the constraints of the education system. For many, going beyond the limits meant exercising full freedom and independence and this, for some, was deemed to be a threat to the unity of the Turkish education system. For Gizem, an English teacher, for instance, autonomy meant freedom, being free from constraint, using her full capacity for the benefit of the school and her students. Derya, another English teacher, said she was autonomous as long as she did not go beyond the boundaries and added: 'I don't know how it would work if we all claimed autonomy […]. What sort of chaos would there be?' Hüseyin, a headteacher, repeated several times that teachers used their discretion and expertise in their classrooms but he later added that the reality of the Turkish educational system may make this difficult to achieve. The participants' view of autonomy within the confines of the education system suggests that it is possible for teachers to act autonomously without having control over the basic direction of their professional lives (Tietjens-Meyers, 1987). This acknowledges that teachers' behaviour is determined not only by their work contexts but also by their causal power as active agents (Davis, 1996; Elder-Vass, 2010).

Furthermore, the emphasis in the interview data on the limits of the education system indicated that the participants were aware of the factors that may influence the exercise of autonomy by teachers. Awareness of the social context and its limits is important for the exercise of autonomy (Deci and Ryan, 2012). When teachers have a good understanding of their social environments and what is happening around them, they will be able to avoid or resist the potentially negative effects of any factors that constrain their autonomy in their work contexts (Deci and Ryan, 2012). Overall, the data signifies that teacher autonomy was a meaningful concept among those working in the education system and the participants agreed that the exercise of autonomy by teachers is necessary on condition that the limits of the education system are not overstepped.

4.2 Emergence of teacher autonomy

One of the aims of this study was to explore the emergence of teacher autonomy in the Turkish lower secondary school context. The rest of this section responds to the second research question, which aimed to understand the extent to which teacher autonomy was exercised by the Turkish teachers of English in relation to teaching and assessment, school management, professional development and curriculum development.

4.2.1   Teaching and assessment

The analysis of survey data showed that the teachers in the sample generally enjoyed autonomy in the area of teaching and assessment. 71.6% of respondents, for instance, said they were frequently or always free to select teaching methods and strategies other than those suggested by MoNE and 78.4% of the respondents always or frequently determined the amount of homework to be assigned. A split in opinion was apparent in the data in relation to assessment activities. 47.7% of respondents indicated that they were frequently or always free to use their own assessment techniques in their classes, independent of those suggested by MoNE. 44.3%, on the other hand, said they used their own assessment techniques in their classes only occasionally or not at all. The interview and observation data, on the other hand, showed that:

- Through their recognition of students' needs and the use of their problem solving skills, the teachers in the sample were able to make adjustments to their lessons and design assessment activities appropriately, but this also depended on the interplay between agency and social structures;

- Teacher autonomy may take different forms (including deviant ones) depending on the context of study.

First, the significance of meeting the needs of students is emphasised both in the 2023 Vision Strategy and in the English teaching curriculum. This means that, in principle, the education system allows teachers to use discretion in the classroom to design their lessons around the local context in which they are working to meet individual student needs. Similarly, for almost all the teachers in the interview sample, it was very important to respond to the needs of their students. This was usually reflected in their responses to the question of what a good English teacher was. Mehmet, a Turkish teacher of English, for example, talked about how his students' psychological or emotional conditions on the day when they were being taught guided him with respect to which part of the curriculum he needed to focus on. Gizem, another teacher, also mentioned that the students had particular needs in the local context where she was working, and her priority was to broaden their horizons. These teachers were able to tailor their lessons to the needs of their students, preparing relevant assessment activities and taking action for the benefit of students, evaluating the emerging demands, dilemmas and ambiguities of the classroom.

Second, according to the regulation of Primary Education Institutions, students in lower secondary schools take two exams from subjects with three or less than three weekly teaching hours; and three exams from those subjects with more than three weekly teaching hours. The subject teachers set these exams. Furthermore, students also take three exams in Year 8 in lower secondary schools. The subject teacher sets the first and second exams and the third is the centralised TEOG examination that is set by MoNE. The students' overall results then determine the types of high school, they can gain admission to. Neither the English language teaching curriculum nor any other policy documents contain any information limiting teachers' use of assessment activities in the classroom. This suggests that teachers of English are relatively free in relation to the in-class assessment choices they make.

Teacher testimony revealed that this freedom might lead to the emergence of what can only be considered distorted forms of teacher autonomy. Some of the teachers in the interview sample reported that they inflated exam results in order to boost students' centralised exam results and to increase their overall school success. They stated that they were experiencing a great deal of pressure from parents and school management due to the centralised exam. One of the teachers [anonymised for the purposes of additional confidentiality] confessed that 'I set an exam the other day. All my students did really badly so I threw the papers in the bin. Normally I am not allowed to do this, but they needed to do better.' This teacher insisted that her/his students did not have access to the same opportunities as those elsewhere in the country. As Raya and Vieira (2015) suggest, what these teachers are doing is questioning reality as they believe it to be, and exploring possibilities that make it closer to what they believe it should be. In isolation, this may have suggested that this distorted version of autonomy is a by-product of individual teacher behaviour, beliefs and values. However, the data shows that it is derived from the nexus between teacher actors, including their beliefs and values, and parents and headteachers who, pressured, then pressure teachers to guarantee success in the centralised exam.

4.2.2 School management

The survey showed that respondents' views in relation to school management were generally negative, but most of them stated that they felt a great sense of involvement in and ownership of what was happening in the school (54.6%). Indeed, the analysis of interview and observation data showed that teachers were able to get involved in the decisions relating to their weekly timetabling and, in some cases, relating to the choice of year groups and classes. Sema, a Turkish teacher of English, for instance, said some of her colleagues preferred not to teach in the mornings, but she chose to do the morning teaching so that she could have the rest of the day for herself. According to the data from this study, the relationship with headteachers, with other teachers and the needs and willingness of teachers themselves were the main determinants of the extent to which they were involved in decisions in the area of school management. Mehmet, for example, needed to keep Fridays free in order to take care of his parents. To guarantee this, he needed to enter into negotiations with the headteacher or the deputy headteachers. During the first hours of the observation at Mehmet's school, how this was negotiated was witnessed. The following dialogue was recorded between the deputy headteacher and Mehmet:

Mehmet: Can't we change the timetable again?

Deputy headteacher: No, that would not be possible; but I can change the day of your school guard work.

Mehmet: But…

Deputy head teacher: [Silence]

Mehmet: Ok, sort this out in one way or another, please.

Deputy headteacher: Your school guard duty will be on Mondays, done?

A few hours later, at the end of another class, Mehmet was ready to leave. He came across the deputy headteacher in front of the classroom and as Mehmet asked if the problem was sorted out now, the headteacher grabbed his arm and came up to him, pretending to punch Mehmet. He was certainly joking, and it was not clear to the researcher if this was something that happened often. Mehmet, however, seemed very embarrassed. As he smoked another cigarette outside the school, he talked about the incident very briefly: 'I have to take things easy so that they will spare me Fridays.'

The analysis of documents and interviews with the headteachers and educational administrators provided supplementary insights into teacher involvement in school management. According to the participants, teacher involvement in school management was generally achieved through teacher participation in the Board of Teachers, school teams and committees, and by carrying out teacher guard duty. When defining autonomy as the essential condition of self-government, Feinberg (1989) suggests that a person may have the capacity for, and the right to self-government, but this is not sufficient. A person also needs an opportunity to exercise this right and capacity. However, the findings of this study show that the existence of opportunities, together with individual capacity, does not necessarily result in the emergence of autonomy and that the particular school context as well as the individual working relationships within it matter to a great extent.

4.2.3 Professional development

A majority of survey respondents stated that they were able to identify professional development targets (46.6%), engage in action research (51.2%), help less experienced teachers (73.8%), and take risks (67%). However, survey respondents did not feel it was possible to inform MoNE about their professional development needs (62.5%), or to influence the appointment of the instructors of in-service training seminars (64.8%). Overall, there was little evidence in the analysis of interview and observation data that teachers felt able to exercise autonomy in relation to their professional development. The responses of the teacher interviewees were dominated by complaints about the scarcity and poor quality of the development programmes organized by MoNE. They were critical of these training programmes, but had a passive and acquiescent attitude towards taking action to change (or attempt to change) the current situation.

In relation to MoNE-organised training, it seems at first sight that a lack of teacher agency impeded the emergence of autonomy in relation to professional development. Analysis of interviews with the educational administrators suggested the same. They believed teachers were reluctant to get involved in or create spaces for autonomy in professional development. Hakan, an educational administrator, for instance, mentioned that he was willing to organise specialised local training seminars at the request of teachers. Ediz, another educational administrator, talked about the online training available to teachers. These educational administrators also criticised the L2 competence levels of English teachers: 'there are many English teachers who cannot speak in English with a tourist. There are many things they can do to improve their professional skills' (Hakan). The analysis of interviews with teachers, however, showed that these teachers were not aware that they could contact the provincial and/or district national directorates to communicate their training needs. Similarly, no indication of awareness of online courses was found in the interview data. This suggests that lack of communication between MoNE and teachers coupled with teachers' lack of agency negatively determines the extent to which teacher autonomy is exercised in the area of professional development.

Awareness of the social context and its limits is important for the exercise of autonomy (Deci and Ryan, 2012). However, as demonstrated in the data, awareness of the constraints on one's exercise of autonomy is not sufficient. It is essential to have an awareness of the opportunities for teacher autonomy that exist in the education system and to be able to create spaces for the exercise of autonomy, whether individually or collectively. Each person has some capacities and teachers are not powerless, but it is necessary for teachers to see that they have power and that they can play a role in improving the present conditions (Bhaskar, 1998). However, the achievement of agentic capacities depends on the interaction of these capacities and available structures (Danermark, 2012). As the data from this study shows, a lack of

communication between MoNE and teachers about the opportunities available for professional development and the lack of intention to take action on the part of teachers appear to co-determine the extent to which teachers exercised autonomy in the area of professional development.

4.2.4 Curriculum development

The generic teacher competencies published by MoNE (2008) indicate that monitoring, evaluating and developing the curriculum programme are among the competencies teachers must possess. Teachers are expected to make suggestions on the curriculum development process in the light of problems experienced during implementation. Analysis of the data showed that this was generally carried out through teacher focus group meetings and the reports submitted to the relevant district directorates of MoNE. Focus group meetings are held twice a year by subject teachers (e.g. English teachers) working in the same school. These teachers produce a report at the end of each meeting, which addresses the concerns discussed, and makes suggestions for better practice. Each English teachers' focus group in schools chooses a chair at the beginning of the term. The chair is responsible for writing the report. In addition to this, the chair of the focus group meets other chairs from a number of different schools within the same district once a year. This suggests that, despite its centralised structure, MoNE values teacher feedback in curriculum development and involves teachers in this process, albeit rather obliquely. However, the data from the interviews undertaken with teachers tell a different story.

For the teachers who participated in the interviews, the focus group meetings were 'so-called meetings'. Derya's comments were particularly noteworthy, as she said that she and her colleagues envisaged these meetings primarily as social get-togethers. Despite the presence of a structure, which enables teachers to exercise agency in curriculum development and develop autonomy, teachers' attitudes towards focus group meetings appear to be characterised by their lack of agency. However, the analysis of data suggested that although MoNE gives teachers the opportunity to get engaged in curriculum development through focus group meetings, the teachers in the interview sample were convinced that their views were not taken into account and all agreed that their reports were not read by MoNE officials, since no feedback was provided to them. As a result, they were convinced that their views and expertise did not matter to MoNE.

The comments of the educational administrators about teacher focus group meeting reports, however, showed that despite the centralised structure of MoNe, its institutional culture may vary widely. Hakan answered without any hesitation: 'Of course these [focus group meeting reports] are all read.' Ünal, however, claimed the opposite: 'The files gather dust on the shelves unless MoNE [Ankara office] orders us to look them up and find out if there are any interesting ideas.' Deniz and Ahmet commented that the reports were read partly or fully, but because they could not take any action in relation to the concerns expressed in them, there would be no response to the teachers. Finally, Emre hinted that the way district and provincial directorates dealt with these reports might differ from one directorate to another: 'In this district directorate, we try to read meeting reports as much as we can'

These findings raise many questions about the centralised structure of MoNE, the roles and responsibilities of provincial and district directorates and the spaces they afford for autonomous action. They also suggest that, as well as MoNE being a large centralised organisation, its parts may have causal powers in their own right. Elder-Vass (2010) explains this by attributing a laminated view to social structure and arguing that we sometimes need to treat a structure quite explicitly as a stratified ensemble. In the case of teacher involvement in curriculum development, while MoNE at national level aims to engage teachers in the evaluation of the curriculum through teacher focus group meetings, the strategies adopted by provincial and

district directorates for dealing with these meeting reports may act as an obstacle to genuine engagement and constrain teachers' causal powers to exercise autonomy. In other words, the different layers within MoNE (national, provincial and district directorates) can easily work against each other.

4.3 Underlying mechanisms

Geopolitical context and trust were identified as two of the mechanisms that shape understandings and the exercise of teacher autonomy in the context of Turkey.

4.3.1 Geopolitical context

Within the geopolitical context of the Republic of Turkey, unity stands as a fundamental and paramount notion. The data from this study, for instance, suggest that the principle of unity plays a role in shaping how the participants understand teacher autonomy in the Turkish context. Participants were concerned by threats to educational unity and a potential source of chaos in schools. It was apparent from the views of these informants that autonomy was seen as such a threat to unity and that they felt that the inability to unite would result in disorder and confusion. Enabling autonomy, however, meets a basic human need (Ryan and Deci, 2006). This then may assure social harmony, a well-functioning civil society and high social capital (Sahlberg, 2007), which are effective means of fostering unity.

The Turkish education system has embarked on many wide-ranging changes. A particular desire on the part of MoNE to generate engagement on the part of teachers with issues relating to teaching and assessment, school management, professional development and curriculum development is apparent. The data in this study suggest that in many cases these changes are promising in terms of teacher autonomy, but there appear to be problems stemming from a clash of messages about the opportunities available to teachers. Teachers, for instance, are asked to take part in the textbook selection panels, but only a very limited number of teachers are involved in the process and their role is confined to reviewing and choosing from a list predetermined by MoNE. Nevertheless, recent initiatives are providing opportunities for the exercise of autonomy by teachers outside the classroom and the 2023 Vision Strategy suggests that the focus will be widened in the near future. However, the findings of this study raise some questions about the readiness and willingness of teachers and head teachers to welcome these new roles and embrace change and this has implications for in-service and teacher education programmes in the country.

4.3.2 Trust

The testimony collected for this study suggests that there is an issue of trust within and around the Turkish education system, in relation to English language teaching. The educational administrators, for instance, made severe criticisms of Turkish teachers of English. Almost all the educational administrators questioned the English teachers' L2 competence and quite explicitly expressed lack of trust in their expertise or their willingness to develop themselves professionally. Trust issues were also apparent in the analysis of survey and teacher interview data. The findings indicated that some of the teachers had little trust in MoNE. They did not believe MoNE valued them. They also did not believe that MoNE was aware of local students' needs and levels and were convinced that the reports of their views from the focus group meetings were not even read by MoNE officials. Some of the survey respondents thought MoNE did not take their opinions and experiences into account and even if they had the opportunity to make their voice heard, this would not make any difference. The lack of trust these teachers have in MoNE appears to affect their agential powers in a negative way, thus eliminating the spaces they might potentially create for autonomy. Lundström (2015) argues

that distrust has further consequences for teachers such as a loss in their commitment to the profession, job motivation, morale and eventually autonomy.

Admittedly, building a culture of trust is important in an education system and that eventually contributes to improving the quality of education (Sahlberg, 2007). We acknowledge that this can be a slow process and requires particular commitment from MoNE. The initial step seems to be the realisation of the erosion of trust in teachers and in teachers' trust in MoNE, and an acknowledgement of trust as valuable social capital. Sahlberg (2007), when defining the culture of trust, emphasises the importance of a recognition on the part of authorities and political leaders that teachers together with head teachers, parents and their local communities know how to provide the best possible education for students. The data in this study indicates that within the current structure of the Turkish education system, there may well be scope to build a culture of trust (e.g. by providing feedback to the teachers about their meeting reports). Creating an autonomy-supportive environment in which teachers can find ways to satisfy their need for competence and relatedness, as Deci and Ryan argue (2014), can be the first path towards a culture of trust. This makes trust both a mechanism that shapes the exercise of autonomy and a consequence of an autonomy-supportive culture.

5.Conclusion

By considering teacher autonomy as a workplace construct within and outside the classroom and English teachers as members of large social organisations who fulfil a number of other duties and responsibilities within schools and by drawing on critical realism, this study contributes to the field of applied linguistics for language learning and teaching by providing an alternative approach to teacher autonomy and extending our understanding of it. The findings of this study can be used to help open up new opportunities to re-examine the quality of English teaching by shifting the focus to Turkish teachers of English and their professional lives.

One of the key strengths of the current study is that it explored the understandings and exercise of teacher autonomy not only from the perspective of Turkish teachers of English, but also through the perceptions of headteachers and educational administrators. The inclusion of diverse participants working at various levels of the education system provided a more complete picture of the concept of teacher autonomy in the country. However, the observation and interview study were carried out in a single province. An observation/interview study undertaken with participants from different provinces might have generated further examples of the exercise of autonomy by teachers. In order to extend our knowledge of teacher autonomy, more research is needed with a critical realist focus. This type of research will not only provide further insights into the mechanisms influencing teacher autonomy, but also into how these mechanisms interact with each other. Such an approach also has the potential to uncover the processes leading to the development and exercise of teacher autonomy.

Funding Statement

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STUDENT TEACHERS' PERCEPTIONS OF REFLECTIVE PRACTICE
Research Article

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STUDENT TEACHERS' PERCEPTIONS OF REFLECTIVE PRACTICE

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Abstract

The present study aims at engaging ELT student teachers in reflective teaching practice through the use of reflective diary during their school internship and finding out their perceptions about this reflective teaching practice that they were engaged in. The data were collected through the qualitative research instrument. After the student teachers were involved in reflective practice through the reflective tool, they were asked to keep reflective diaries during the twelve weeks school internship to learn their perceptions of reflective practice. The data obtained from the qualitative data were analyzed through thematic analysis. The results of the study put forward that the student teachers benefited much from the current study and were pleased with having participated in this reflective teaching practice by means of reflective diary. Engaging in reflective practice was found as an important opportunity for gaining awareness about teaching skills and practices, increasing self-evaluation and professional growth. The student teachers also stated that reflective diary use fostered the growth of reflective practice by encouraging them to engage in examining what was being done in the classroom. This process persuaded the individual to look for strengths and weaknesses and thus actively seek improvement in recognized areas. Though the growth of reflection and reflective practice, the student teachers used personal experiences and connection with classroom theory to grow and develop as professionals.

Keywords: Reflective teaching, reflective diary, self-evaluation, professional development.

1. Introduction

Language Teacher Education (LTE) has been perceived as fundamental in academic and non-academic researchers at different dimensions. As outlined in an ongoing survey (Borg, 2011), LTE has been portrayed by teacher knowledge base, teacher cognition, teacher knowledge of the language, teacher-researcher, teacher educator development, teacher reflective practice, novice teachers, teacher expertise, and the practicum. Accordingly, numerous studies have been made to consolidate the accompanying topics into the field's researching agenda around the world (e.g.Bigelow & Ranney,2005; Farrell,2011;Gebhard,2009;Yuan & Lee,2014).

Along with this query, we study reflective practice, as one of the most widely promoted features in LTE literature (Kullman,1998), by assessing the perceptions English teachers in Kazakhstan hold about reflection and the way how they use it in practice. The emphasis on the study of reflective practice in this paper is stimulated by the fact that reflection has proved to be an important instrument for professional development of teachers. In addition, studies state that reflective learning has a beneficial effect on teacher knowledge and attitudes (Kabilan, 2007).

Many studies have been conducted on reflection practice. The earliest scholar on reflection theory is John Dewey. Dewey (1910) was among the first to advance reflection as a way of professional development as in teaching. Dewey suggested that when teachers reason, speculate and reflect, using responsibility, sincerity, and open-mindedness, they will not base their actions on tradition, motivation, or others; rather, teachers will act with planning and foresight.

Schön (1983), expanding upon Dewey, proposed that one's capacity to reflect on actions is a defining feature of professional practice. In this way, Schön (1987), characterized reflection practice as a basic procedure in enhancing one's masterfulness or specialty in particular. Taking three ideal models of learning into consideration, Van Manen (1995) identified three levels of reflection as experimental diagnostic; hermeneutic-phenomenological, and basic persuasive. As indicated by this, the observational explanatory position is installed in a specialized instrumental comprehension of instruction and educational plan. Here, the accentuation is on viability, effectiveness, and efficiency. Thus, in teacher education, the focus is on enabling the teacher to "learn to apply a variety of techniques to the curriculum and the teaching-learning process, so that a predetermined set of objectives can be realized most efficiently and most effectively" (p. 210). For instance, Choy and Oo (2012) investigated reflective thinking and teaching practices. In this investigation, 60 participants responded to the survey to determine the level of their own pedagogical practice as their indicator of critical thinking. It was founded that most of the teachers did not reflect on their pedagogical practice. It seems that they have not used the four learning processes: contextual awareness, imaginative speculation, assumption analysis, and reflective incredulity which were indicative of reflection.

Fatemipour (2013) studied the efficiently of the tools used for reflective teaching in ESL contexts. 10 teachers and 234 students ESL in Iran participated in the study. Analyzing the results obtained from the data, the researcher concluded that the most productive reflective tool was the teacher diary. The correlation coefficient between the data obtained from this tool and the average value of all data is 0.84.

Azizah, Nurkamto, Drajati, and Tosriadi (2018) had the descriptive-qualitative method study in which the data were gained through survey and interview to an in-service EFL teacher of Junior High School in Indonesia. The aim of the study was to examine teacher's perceptions about the teacher's journals. The findings of the study revealed that the teacher's diary or teacher's journal has a great benefaction for the teacher of English to be more skilled and professionally prepared to teach. The contribution of this study might assist in raising awareness of student teachers of the significance of reflection in instructing English. In particular, it might be beneficial among student teachers in terms of professional development through thinking about those perspectives which are straightforwardly identified with efficient instructing.

2. The study

2.1. The Aim of the Study

The purpose of this study was to engage ELT student teachers in reflective teaching practice through the use of reflective diary during their school internship and finding out their perceptions about this reflective teaching practice that they were engaged in. In this study, the following research question was addressed:

What are the perceptions of ELT student teachers about the reflective practice they are engaged in through the use of reflective diary?

2.2. Participants

The study was conducted at the English Philology Department at Faculty of Philology, Khoja Ahkmet Yassawi International Kazakh-Turkish University, Kazakhstan. 35 (5 males and 30 females) fourth year ELT students were involved into the study. Mean age of the participants is 22.

2.3. Data Collection Instrument

In this study, the reflective diary was employed in order to explore and understand the topic that is studied. Writing a reflective diary is an ongoing process of keeping written records of teacher's thoughts, experience, and observations. Trop (1995) stated that diary writing is an explanatory can of writing that can help student teachers to mirror their attempt, distinguish their responsibilities, analyze choices, and develop an exceptionally customized sort of new information.

The participants in the study were asked to keep a regular reflective diary about a lesson that he taught. Through the use of a reflective diary, participants were engaged in reflective practice by looking back and thinking about their teaching experience. They were instructed to write diaries after each lesson they taught during a twelve-week period. More specifically, reflective diaries were used in the present study for the following purposes:

- To assist participants to critically reflect upon their teaching experiences, record reflections on what went good and what did not.
- To assist participants to rethink their teaching styles, beliefs, decisions.
- To assist participants to analyze their strengths and weaknesses.
- To assist participants to identify the effectiveness of their classroom materials and feelings about their teaching performance.

2.4.Data Analysis

The opinions of the participants were organized in accordance with emerging themes that were developed after an inductive approach as part of a thematic analysis of qualitative research. These themes are: teaching experience, the relationship between theory and practice, future training, constructive feedback, and classroom management. It should be noted that during the analysis all these topics turned out to be interconnected, and not a single category was independent of the other.

3. Findings and Discussion

The findings of the study stated that the participants perceived the reflection diary as a tool for teaching experience, theory-practice connection, future preparation, constructive feedback, and classroom management. Throughout the practice at school, the participants were involved in a variety of teaching-related experiences such as classroom observations and peer feedback. The analysis revealed that they stated that these experiences as effective and useful for their professional development. Overall, they expressed that they were exposed to a different teaching-related experiences, and they found these experiences relevant to their professional preparation in this course. It turned out that this course helped them to expand their training repertoire and prepare for the future. For example, the following excerpt is a good illustration of how participants expressed how reflective diary helped them in teaching experience.

(1). "The reflective diary writing helped me a lot to evaluate myself in details as a teacher. I could find out that the materials I am using are enough or not enough. I could take my time thinking about how I teach, what I should do and what I should not do. (P7)

(2). "[…] reflective diary writing helped because I evaluated myself, and the way of teaching step by step. I described what happened in the lesson and what the important points (P3)

(3). "reflective diary writing allowed me to revise my teaching methods […] I could review my teaching methods and materials". (P8)

The participants perceived the reflection diary as the theory-practice connection. They argue that participation in various experiences helped them to combine their knowledge of the instructional concepts with their experiences. This process was useful for their development. For example, in the following excerpts, participants emphasized that reflection practice they could combine theory and practice.

(4). "I feel I understand new ways to go, new methods to implement in language teaching. Reflective teaching practices showed me how to use theory in practice".(P4)

(5). "I dealt with some issues more effectively. For instance, my two students had an argument during their presentation but due to my interference and advice, the matter as settled […] I"ve become more tolerant and observant and I am using the theory which we taught in practice. (P6)

(6). "Seeing things clearly enabled me to improve my skills and methods. I reflected on the materials I applied when I encountered some events in the classroom. I saw how I handled the issues and how I should and how I shouldn't". (P1).

The abovementioned extracts indicate that in the reflective practice, participants have been given the opportunity to apply their knowledge of teaching. At the same time, their self-knowledge has increased, and has contributed to the future teaching profession.

Along with it, the participants perceived reflection diary as a tool for future preparation. They regarded that engagement in various authentic experiences in this course helped them prepare for their profession. In other words, they perceived that these experiences represented their future experiences in teaching; therefore, they viewed the exposure to various teaching experiences as a way of preparation for the future. For example,

(7). "To my mind, keeping a diary is a great way of improving oneself. It helps a person become more disciplined and focused on what is happening around him. It also helps to build a strong character in a person especially when self-reflecting is a gateway to self-development. (P21)

(8). "In my point of view, reflective practice is a process which enables to achieve a better understanding of yourself. It is a way of studying your own experiences to improve the way you work". (P11)

(9). "After writing the diary, I began to think about how effective I was and what to do to be more effective…It was an opportunity to strengthen myself […] I questioned myself and that helped me improve my qualities". (P33)

It also assesses the constructive feedback and has contributed to self-development. For example, some participants paid special attention to the impact of feedback from in-blog tutorials on their self-development. Some of the participants explained their comments during the daily writing. The pre-service teacher says that feedback is useful for her:

(10) ". . . because if I do not get feedback, I can not see my strengths and weaknesses and can not write effective journal"(P30).

(11) "Yes, I consider the feedback that I received in my journals were very productive. The teacher explains us that we don't only keep a journal to just to write our experiences that we get from both in-class discussions and in observations. ((P9)

In terms of feedback, pre-service teachers focused primarily on overcoming their weaknesses.

(12). "By using reflective diary, I could have the chance of seeing and correcting my mistakes". (P28)

(13). "Being engaged in a reflective practice, I found my strengths and weaknesses". (P17)

(14). "It is not always possible to realize what is going on during teaching, so with the help of diary I was able to see my weak sides". (T4-Reflection on keeping a diary)

This applies to the instructor and the peers. As for the study, the participants believe that they felt comfortable about writing the journal, and the reflection of their diaries has contributed to their own development. The participants focused on classroom management, and they elaborated on learners' misbehavior and how they were treated. Obviously, they placed importance on establishing control and discipline over the class. Participants were deeply concerned about the behavior of the class that they had noticed and explained the behavior of the students and their attitude towards the teacher and the lesson. In different situations, they explained that they did not have interest in the topic and were loud in the lessons they observed. The pupils reported that they did not pay enough attention to the subject and talked to their neighbors or that they were going through various reasons.

That is, the reflective practice through reflective diaries affected their self and professional development positively. All the participants mentioned that diary writing led to positive changes in their characters and behaviors, and teaching actions and skills. Hence, the participants emphasized that writing a reflective diary was a demanding and tiring process. The following excerpt is an example of this negative opinion:

(15) "First, thinking about diary was tired for me. I had to spend a lot of time. I had to make observations in the classrooms". (P15)

(16). "This is the most subjective way to evaluate your teaching process. Taking simple notes or just writing down your feelings about the class is a good way to remember […],but still, it remains subjective because it mostly includes teachers" self-opinions and feelings". (P20)

Based on the two excerpts on the challenges of diary use above, it is significant to note that the participants in the current study always stated positive views on the use of reflective diary even when they were mentioning the challenges of engaging in reflective practice through the diary.

The results of the research showed the advantages of using different reflection practices in terms of professional development, improvement of teaching practice, classroom management and improvement of constructive feedback. Also, the literature suggests relevant results in reflection practice, and reflection practice implies many advantages that help teachers gain better insight into the practice of teaching. The results of the study are considered to be an important tool of thinking of past experiences and are similar to those of Choi and Oo (2012), Fatemipour (2013), Azizah, Nurkamto, Drajati and Tosriadi (2018) studies. This effect reflects the practical and living characteristics of diaries to make it easier to look when needed. Similarly, Rezaeyen and Nikopour (2013) pointed out that keeping a diary is considered as a way of presenting a record of the important learning and teaching events and going back to these recorded experiences later. Thus, the present study provided a positive effect of reflective diary on self-evaluation.

4. Conclusion and implications

This research is aimed at attracting students' teachers to reflective practice and their understanding of reflection practice through a reflection diary. This study enabled the use of reflexive experience effectively, taking into account its advantages. The results of this study are incorporated into contemporary literature emphasizing systematic and implementation of reflective practice to increase awareness of the reflection in teaching. This reflection method has allowed student teachers to learn about the diversity of reflective teaching.

Throughout this study, participants had the opportunity to participate in the systematic reflection. This enabled the participants to find out about the diversity of the reflective diary and the effectiveness of the tool that contributes to the teacher's development. That is, the research was a great opportunity to see students' different ways to effectively depict their actions, beliefs and feelings. Viewing and testing such reflective approaches or tools allowed the participants to understand that they can make changes in teaching through different ways of reflexive learning.

In the light of participants recognitions on the positive effects of reflective practice, present study offers certain implications for advancing other student teachers and teachers' reflective practices and professional development.

Firstly, self-reflective implementations could be considered as a component that may encourage learner autonomy (Arslan, 2018). Secondly, educational organizations may provide in-service opportunities to help student teachers and teachers become aware of the ways of being reflective. Finally, other reflective tools such as teaching portfolio (Khan and Begum, 2012) and European Portfolio for Student Teachers of Languages (Yüce,2019) can be introduced for further reflective practices.

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MEASURING SPOKEN VOCABULARY LOAD ON MEDICAL ENGLISH STUDENTS: A LEARNER CORPUS EVALUATION

Research Article

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MEASURING SPOKEN VOCABULARY LOAD ON MEDICAL ENGLISH STUDENTS: A LEARNER CORPUS EVALUATION

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Abstract

English for Specific Purposes (ESP) teaching urges the students to have a deep understanding of specific vocabularies. Specifically, in medical English class, spoken diagnosis explanation involves specific vocabularies. This corpus study was aimed to reflect the students' achievement of spoken vocabulary during speaking practice on explaining the diagnosis. Computer software was utilized to calculate frequency and range of words. The students' vocabularies were compared with listening tapescript corpora from a medical English textbook to evaluate vocabulary pattern. Additionally, the students' spoken corpora were contrasted with 2000 high-frequency words and other three word lists to assess word distribution. This study revealed that medical students used few specialized vocabularies in order to deliver their explicable message to the patient. The analysis of students' vocabulary can be used as a reference to contemplate the success of language instruction and future betterment, particularly spoken diagnosis explanation at medical English program.

Keywords: corpus; ESP; evaluation; medical English; spoken diagnosis

1. Introduction

Medical English is one of English for Specific Purposes (ESP) branches that has its own needs on the teaching instruction and materials. Richards (2017) argues that some practical concerns should be considered in designing ESP program, one of them is material preparation. Further, he recommends vocabulary selection as the basis for expressing meaning in a language. One of the best ways to do vocabulary selection for language teaching is corpus analysis. He explains that corpus analysis can select the highest frequency words that are considered most useful aspect in the instruction.

In line with Richards, Nation (2001) states that the breadth or size of vocabulary knowledge is the number of words of learners. He also agrees that vocabulary acquisition is crucial since it is considered as the basic yet important component in language learning. The nation also divides the vocabulary into four levels, namely high-frequency words, academic vocabulary, technical vocabulary, and low-frequency words. The division clarifies that certain words need more attention as they may function for different purposes.

For a long time, English Language Teaching (ELT) has considered vocabulary as an important part. As O'Keeffee, McCarthy and Carter (2007) state that one of the efficient procedures to observe vocabulary is through the corpus. They explain that corpus can provide not only linguistic phenomena but also pedagogical implication. Before instruction, the material can be designed by analyzing needed language features while at the end of the process, the corpus can be a reflective instrument to evaluate achievement.

In addition, Knight (1994) mentions that vocabulary knowledge is the most important facet of the second language (L2) learning. Vocabulary target is set at the initial time of material design. In the process of teaching and learning, teachers can start their activities with vocabulary understanding first. At the end of the session, vocabulary is commonly used as a standard to evaluate students' achievement. Thus, this study tried to shed light on the assessment of vocabulary load of medical students as part of teaching evaluation.

Research to evaluate lexical coverage and spoken medical English class is considered to be great importance, especially related to the students' medical professionalism in the future. Applying corpus, this study tries to investigate vocabulary coverage in a classroom context. Textbook vocabularies and four-word lists were set as the threshold to count vocabularies load of the students. Thus, the researchers formulated the research questions as follows:

- What are the words in the textbook which students are likely to use?
- How many of 2000 high-frequency words found on students' speaking during explaining diagnosis?
- How many words are produced by the students does not belong to 2000 high-frequency words?

2. Theoretical Framework

2.1 Vocabulary Thresholds

West (1953) creates General Service List (GSL) containing 2000 most common English vocabularies that can help learners to communicate comprehensively. This list has been widely used by many countries as a framework to develop good teaching material in English (Richards, 2017). Later, GSL is revised by the NGSL (Browne, 2013) which is claimed as a better word list with bigger coverage, mainly because NGSL was created with advanced corpus device and big size data. Unfortunately, NGSL has not been built in the computer software used in the present research. As a consequence, GSL becomes the standard of this study since it has been set as a base word list at the computer in this study.

In ELT curriculum and material development, corpus studies have been used to measure vocabulary load as a success indicator of textbook creation. Mukundan and Aziz (2009) compared words occurrence in five Malaysian English textbooks used in schools and GSL by West (1953). They found that, out of five, there is no single book that fully applies the whole 2000 most frequent words. 71.9% of words are overused in the textbooks as indicated by seven times and more repetition. These findings can be a reflection for the material designer to revise the textbooks to meet the entire GSL.

In accordance with the previous research, Zarifi and Mukundan (2015) evaluated one of the linguistic aspects presented in Malaysian English as Second Language (ESL) secondary school textbook. By utilizing Wordsmith software and Oxford Dictionary of Phrasal Verbs, they tried to contrast phrasal verbs found in the textbooks and what are presented on the dictionary. Their

research becomes a recommendation for future material designer in developing an ideal textbook since some phrasal verbs such as *take away* is overlooked. They regret that *take away* is not elaborated well in the textbook meanwhile it is very sensible in daily use of language such as in fast food restaurant.

Recently, corpora basis can be used to assess standardized test items. Beng and Keong (2017) examined lexical bundles in an English reading test for varsity. They investigate lexical bundles in reading test for five disciplines; applied science, pure science, business, humanities and social sciences. They found that different lexical bundles are employed in different disciplines and genres, for instance, research-oriented bundles tend to appear more on applied science while social sciences have a more dependent clause. For consideration, teaching students to familiar with subject-related element can help the development of better tests.

As an addition, Zorluel Özer and Okan (2018) contrast discourse markers produced by English teachers. They compared two Turkish teachers and two native teachers to find that Turkish teachers used fewer discourse markers than native teachers. They argued that the Turkish teacher did not use some important discourse markers in which the native teachers utilized them frequently. As an implication, they suggested the nonnative teachers exposed with discourse markers to gain authentic language use. The training and understanding of the importance of discourse markers can be begun from the level of the pre-service teacher. The last, exposing teaching material with a discourse marker can benefit nonnative teacher to be common with discourse marker.

Students' work corpora for evaluating learning achievement have been built by Khojasteh, Shokrpour and Torabiardakani (2017). They try to overview English modals use among 136 advanced Iranian learners. The students' narrative writings from six English institutions are gathered. They calculate 429 times modals occurrences. It is surprising that one of the modals, *shall*, did not appear (0%) in the corpus. In other hand, some dominating modals such as *can*, *will* and *could* are overused by students. The phenomena bring them to a conclusion that students employe avoiding strategy during writing in order to conceal their incompetence of modals use. They conclude that the use of modals in the students' writing do not show their language use in natural English. Accordingly, teaching various modal types with numerous samples and repetition is highly recommended.

As the emergence of English as an academic language, Coxhead (2000) tries to bring a solution by proposing Academic Word List (AWL). She classified 570 most frequent academic words taken from the various academic text. In practice, AWL assists students in university-level to understand academic text like journal and textbook. Moreover, English for Academic Purposes (EAP) programs are benefited by AWL in designing their material.

To ease the writing process of students from Hotel and Management Faculty in Malaysia, M.Nordin, Stapa and Darus (2013) built specialized word list related to the culinary course. They compiled 116 lecturing PowerPoint materials to result 3,698 running words. They employed RANGE and FREQUENCY software (Heatley, Nation and Coxhead, 2002) in finding 113 selected vocabularies for food writing. These specific vocabularies benefit ESP teachers in designing teaching materials because the objective of writing instruction is concentrated on subject-related words.

In the other fields of ESP, such as engineering, agriculture and business, word list becomes a serious concern. Martinez, Beck and Panza (2009) initiated agriculture academic domain.

Konstantakis (2007) and Hsu (2011) work for English for Business Purposes (EBP). Coxhead and Hirsh (2007) presented their Science-specific Word List. In Engineering, Hsu (2014) developed English Engineering Word List (EEWL) with the assistance of corpus software.

In English for Medical Purposes (EMP), word lists are developed extensively. Medical Academic Word List (MAWL) is developed by Wang, Liang and Ge (2008). They identified 623 medical words which used in several journals. These words are very valuable for medical learners who want to read and write academic papers. Afterward, Lei and Liu (2016) revised it into New Medical Academic Word List (NMAWL) which is created from bigger corpora and listed in the lemma. Lei and Liu (2016) presented their NMAWL together with part of speech symbols like *a* for adjective and *v* for the verb.

It is, therefore, very important to identify specific word list for specific learners, as ESP learners need to focus on their subject which is different from general English learners. A certain field of a study sometimes contains the very wide specific subject. As suggested by Lei and Liu (2016) related to medical English, EMP consists of very broad knowledge in one subject, designing more specific word list areas will help medical learners deepen their interest. In the Medical English class, students are trained to have good performance in speaking skills. One of the speaking components, vocabulary, is used as a good communication indicator. Lexical coverage of the students should be evaluated in order to understand the success of Medical English program.

This study was done in the Indonesian context where English is considered as Foreign Language (FL). Medical English (ME) program is taught in the university level to prepare medical students to be capable of communicating through spoken and written English with foreign patients. As the program run in Malahayati University-Bandar Lampung, ME is done for two semesters with two credits each. Spoken skills that must be mastered by medical students include taking history, examining patient, giving reference, making diagnosis and giving treatment (Glendinning and Holmstrom, 2001).

3. Method

3.1. Participants

This study was done on an intensive class which consisting of nine female students. They took intensive class of Medical English because they did not meet the regular schedule offered by Language Center (LC) of Malahayati University, Bandar Lampung. They were medical students on sixth semester taking Medical English (ME) Level Two. One of the focuses in the instruction was explaining diagnosis both in spoken and written.

Those students had followed general English training in the same institution in the previous semesters, from first until the fourth semester. On the semester five, they took ME level one with concentration on taking history and patient examination. Both levels tried to integrate three English skills; listening, speaking, and reading, the writing was limited. In this study, language background of students, mother language (L1) or local language was denied since they used Indonesian language for daily conversation in the class.

Before this study done, the students had gotten some training about explaining a diagnosis which involves listening activity, role play, and reading materials. Explaining diagnosis belonged to last section of the textbook together with treatment part because it follows the structure of general practitioners daily chores, started with interviewing patient and ended with medication.

By this situation, it can be inferred that students had adequate EMP exposure and practice especially explaining diagnosis orally based on guidelines in the textbook.

3.2. Data Elicitation

The students were asked to prepare their diagnosis based on medical case in their textbook page 65 to 75 (Glendinning and Holmstrom, 2001). The students were allowed to choose any medical case they were familiar with. This democratic assignment was done in order to trigger students' speaking performance. They chose an easy topic they would be cope with vocabulary. As a consequence, there were varieties of topics explained by the students.

The students were provided forty-five minutes to design their individual speaking performance. After that, they were asked to do a role play with the teacher. The teacher acted as patient and the students were doctors. During their speaking practice the students were requested to speak close to voice recorder. Each student was allowed to speak for one until five minutes time allocation. Then, their voices were carefully transcribed for further data processing, non-distinguish sounds were not proceeded. Meanwhile, tapescripts from textbook were retyped.

3.3. Learner Corpus

In term of data size, O'Keeffe et al (2007) categorize small and large corpus. A written corpus is considered as quite small when it contains below five million words. On the contrary, the spoken corpus is categorized as large with more than a million words. This study contains more than a thousand words of students' spoken corpora because it was done only in a classroom setting. Hence, it can be said this is a mini corpus yet worth to bring factual image concerning vocabulary achievement.

The researchers created simple corpus to contrast students' corpora and textbook corpora. The students' corpora contained 1,505 running words which proportion is elaborated on Table 1. On the other hand, the textbook corpora was made of 954 running words which was taken from tape scripts especially about explaining diagnosis on textbook from page 106 – 108 (Glendinning and Holmstrom, 2001). Both corpora were not combined in order to distinguish students' creation and textbook.

Table 1. *Number of Words Produced by Medical English Students*

Students	Excerpt	Running Words
1	…it is possible Mr X suffering vascular dementia…	115
2	…It can be investigated such as cholesterol LDL…	67
3	..You might not know you have it until you…	108
4	…And now I want to tell you about my diagnosis…	120
5	…you had complained that you got headache on…	162
6	Good evening Mr. Hudson my name is Dewi….	257
7	… Okay you never go to doctor before…	188
8	…You must take rest okay?...	143
9	… Hundred ninety per one hundred ten mmHg…	345
Total		1,505

All corpora were processed by using RANGE and FREQUENCY Programs created by Heatley et al (2002). The software proceeds vocabulary in *txt* file format. RANGE was used to

compare vocabulary up to 32 different texts at the same time. It provides a range or distribution figure, headword frequency figure, family frequency figure, and frequency figure for each of the texts the word occurs in. The program has 2000 high-frequency words (West, 1953) and 570 AWL (Coxhead, 2000) features. Those word lists were set as base words that can be used as comparison standard.

FREQUENCY program analyzes word occurrence based on its hit on the text. It can only run one text at a time. The output can be listed in alphabetical or frequency order. The txt output file presents rank of the words, raw frequency and cumulative percentage frequency. A side by side frequency tables can be contrasted by utilizing FREQUENCY output.

Ahead of RANGE analysis, some words from students' transcription were eliminated. The elimination was done on name, both doctor and patient name. Numbers, such as age, time and single numbers, were retyped in English. The selected words were saved in txt format. The reduction is called stop list.

3.4. Data Processing and Analysis

In order to evaluate vocabularies that have been achieved by students after learning process, the contrasting process was done on corpora of students and textbook through FREQUENCY program. The contrasting process was done by creating frequency list on both corpora. The frequency lists were contrasted side by side to find students' words that occur in the textbook. Words were categorized into content and function words (Gerot and Wignell, 1995). The division comes out with assumption that function word which is close to grammatical aspect had been covered when the students in general English class (in semester one to four). Therefore, content word was focused in this study.

From the frequency contrast, the researchers found some words that should not be analyzed further. The words are authentically related to local context such as name of students or patients, name of hospital, name of city, borrowing, and coinage words. Names which were not included in analysis were *Putri, Nicol, Hudson, Jameson and Wulandari*. Hospital name is *Bintang Amin*. The area names were *Bandar Lampung* and *Kemiling*. The rests were *UGD, khas, formly, anamnetion* and *obstained*. In the RANGE program those fifteen words were set as stop list words, which meant not counted in analysis.

On the other hand, words that relate to medical terms, disease and abbreviation were allowed. The examples are *thrombocyte, aedes aegypti, osteoporosis, hypothyroidism, MRI (Magnetic Resonance Imaging), X-Ray, CT Scan*, etc. Those words were included in RANGE analysis because the students have been common with them either in EMP class or in other lecture classes.

Subsequently, knowing the distribution of student words in the textbook, students' words were contrasted with GSL (West, 1953). The contrast was aimed to see coverage of their vocabularies in the 2000 high frequency words. Subsequently, the words that did not belong to GSL were contrasted to 570 AWL (Coxhead, 2000). On the final stage, words that did not belong to either GSL or AWL were matched with MAWL (Wang et al, 2008) and NMAWL (Lei and Liu, 2016) word lists. The GSL and AWL contrast was done in once by using RANGE. While matching non GSL and AWL words with MAWL and NMAWL was done by searching the words manually with find menu on txt file.

4. Results

4.1. Classroom Spoken Diagnosis Word List

The mini corpus from spoken diagnosis done by ME students results 396 word types. The word *you* places the highest position with 83 frequency and word *yes* on the last list with only one frequency as mentioned on Appendices 1 and 2. On the other hand, corpora from tape script generates 378 word types with words *the* and *yourself* place the top and bottom rank, 46 and 1 frequency respectively. The word types from student source vary more than from tape script. The twenty most frequent words can be seen on Table 2:

Table 2. *First Twenty Words List of Textbook and Student*

Textbook			Student		
Word Form	Rank	Frequency	Word Form	Rank	Frequency
THE	1	46	YOU	1	83
AND	2	33	AND	2	63
A	3	28	YOUR	3	46
YOUR	4	28	IS	4	39
TO	5	24	THE	5	38
OF	6	23	TO	6	31
IS	7	21	OF	7	30
IT	8	20	A	8	23
YOU	9	20	HAVE	9	23
IN	10	16	I	10	21
I	11	15	NOT	11	21
NOT	12	11	THAT	12	20
THIS	13	11	OKAY	13	19
WITH	14	11	HEADACHE	14	17
THAT	15	9	THIS	15	17
CONDITION	16	8	DO	16	16
WHEN	17	8	IT	17	14
WHICH	18	8	MIGRAINE	18	14

AN	19	7	ALSO	19	13
HIS	20	7	ARE	20	13

The above table shows that there were thirteen words that occur as similar words, even though they had different frequency on each list. The similar words were *a, and, I, is, it, not, of, that, the, this, to, you* and *your*. Those thirteen words were commonly uttered both by tapescript and students. However, the domain rank of the two lists do not show identical position, except the word *and*. With lower running words number on textbook list, and occurred thirty-three times compared with sixty three times occurrence on students' spoken diagnosis. It shows that *and* is significant on both word lists.

Dissimilar words on both lists were *an condition*, *his*, *in*, *when*, *which* and *with* from tape script corpora. Whilst, the students' spoken diagnosis has *also*, *are*, *do*, *have*, *headache*, *migraine* and *okay*. In these differences, it can be seen that the symptoms or diseases that are commonly mentioned during explaining diagnosis are *headache* and *migraine*. Those two words listed in the most twenty words uttered by the students because some students use similar medical case. It is confirmed by the name of patient they stated.

Further, the frequency list from students and textbook were contrasted. The process was done with side by side analysis, the frequency tables were put together in one page. The contrasting shows that there were 126 word types that identically appeared on both tables as can be seen on Appendix 1. The frequency of words available on both columns were 768 (51% of total student words) and 573 (58% from text book).

Among the list of words, there appear on student and textbook, they had 35 similar function word types; *A, an, can, I, is, me*, etc. In the list of words appear on students and textbook, the frequency of function words were 538 (70%) and 373 (65%), consecutively. While the content words from students were 230 (30%) and 200 (35%) from textbook. It was too hurry if we conclude function words dominate students and textbook corpora by denying the words that do not have similar appearance on the frequency.

Moving to the list of dissimilar words on students and textbook, it can be seen that there were 271-word types from students and 251 types from the textbook. Among the number, there were only six-word types (2%) containing function words in students' corpora. While the textbook had only four (1.5%) word types of function words. It seems that content words dominate list of dissimilar words from students and textbook corpora.

4.2. Students Words vs. Established Word Lists

In order to find a better comparison, the students' spoken vocabularies were compared with well-constructed word lists; GSL, AWL, MAWL and NMAWL. The comparison of the first two word lists was done by using RANGE program. 2000 high-frequency words were the first analysis stage. The words that did not appear on GSL were moved to next contrast stage, matched with AWL. The final comparison, the words that did match neither GSL nor AWL, will be looked up on MAWL and NMAWL. By doing so, the words produced by students can be assessed on coverage.

The result of RANGE analysis showed that among 1,505 running words; 1,294 words occur in GSL (86%), 23 (1.5%) words in AWL, and 188 (12.5%) words not found in those three lists. The following table depicts RANGE analysis output.

Table 3. *Students Words Found in GSL and AWL*

Word List	Token (%)	Type (%)
GSL	1,294 (86%)	301 (76.2%)
AWL	23 (1.5%)	14 (4.3%)
Not in GSL and AWL	188 (12.5%)	17 (19.5%)
Total	1,505	395

Word types created by students are 395. They occur in GSL and AWL for 301 (76.2%) and 14 (4.3%) types respectively. Meanwhile, out of 188 words which were not categorized in GSL and AWL formed 17 (19.5%) word types. Later, the 17 word types will be matched with MAWL and NMAWL.

The coverage of students' words towards 2000 high-frequency words only 301 (15%) types. It is very far from the expected numbers as mentioned by Nation (1990) in Mukundan and Aziz (2009) that the GSL covers 87% vocabulary in a text. Comparing 15% and 87% seems the students are not successful.

The second comparison was students' corpus and AWL. There are only 23 out of 1,505 words (1.5%) produced in academic way. The actual word type was only 17 out of 395 (4.3%) shown by Table 4. The small number of flowery words created by students indicates that they prefer high-frequency words to scholarly stylistic words.

Table 4. *Words Found in AWL*

NO	TYPE	RANGE	FREQ	F1
1	ACCOMPANIED	1	1	1
2	CONDUCT	1	1	1
3	DATA	1	1	1
4	DEPRESSION	1	1	1
5	FUNCTION	1	2	2
6	INVESTIGATED	1	1	1
7	INVESTIGATION	1	2	2
8	MINIMAL	1	1	1
9	NORMAL	1	5	5
10	OCCUR	1	1	1

11	PHYSICAL	1	1	1
12	PLUS	1	1	1
13	SECTION	1	1	1
14	STABLE	1	1	1
15	STYLE	1	1	1
16	TRIGGER	1	1	1
17	TRIGGERED	1	1	1

The last comparison was done at words which were not found in GSL and AWL. There were 188 words which distributed into 77 words types. Due to the elimination of fifteen words which is mentioned on previous part, the word types which were put on not found neither in GSL nor AWL were only 62 as presented on Appendix 3.

Scanning the table in Appendix 3, it is obvious that, the words which were not found neither in GSL nor AWL were dominated by medical terms. The words such as *Aedes aegypti*, *densitometer*, *extremities*, *hypertension* and *osteocalcium* are the words which are familiar in medical world. Those words relate to health examination and diseases. Medical students are skillful to talk and read about these terminologies in their lecturing or every day conversation. Even though the words were not found both neither in GSL nor AWL, the students are proficient to use them. This fact leads the researchers to compare the 62 word types with MAWL and NMAWL which are well known as established medical word lists.

In accordance to MAWL which consists of 623 words, the researchers found only fourteen words consisting twelve equal words and two derivational words. The twelve duplicate words from Appendix 3 are *alcohol*, *calcium*, *density*, *diagnose*, *diet*, *hypertension*, *protein*, *routine*, *scan*, *symptom*, *vascular* and *vital*. While two other words are in the form of singular and verb presented in MAWL but they are presented in plural and noun on students corpora, *drug* to be *drugs* and *prescribe* to be *prescription*.

There is a slight difference when 62 words were contrasted with NMAWL. With 16 words (15 identical and 1 derivational) found in NMAWL list, this comparison falls in very short apart. The fifteen similar words are *density*, *diabetes*, *diagnose*, *diagnosis*, *diet*, *hypertension*, *nerve*, *prescription*, *protein*, *scan*, *symptom*, *urine*, *vascular* and *vitamin*. The only one derivational is drug which is presented in NMAWL as plural word, drugs.

5. Discussion

To get general insight, we can see total frequency combination of content and function words from both similar and dissimilar words from students and textbook. In the textbook word list, there were 385 function words (39.5%) and 591 content words (60.5%). The textbook was out-numbered by content words. Meanwhile, students word list, out of 1,505 running words, there are 564 function words and 941 content words. With 62% proportion, content words were prominent on student's corpora. The student's corpus agrees with textbooks, the content words

were higher than function words. As a final decision on evaluation by considering the similarities, students were successful in achieving vocabulary target.

Related to low coverage of students on 2000 high-frequency words, Richards (2008) argues that one of the spoken language characters is repetition. It is acceptable that the students, the candidate of medical doctors, use similar words during spoken communication. They performed fixed procedure or pattern on explaining the diagnosis. Even though they create 1,294 words in GSL the students tend to utter similar words with high frequency, see Appendix 1. Repetition of usual words happens on spoken diagnosis.

Richards (2008) states that spoken language tends to use generic words, it is supported by Fauziati (2016) who indicates participants of a discourse influence the language use. That medical English students prefer daily lexical in explaining diagnosis is an attempt to bring understanding to the patient. They avoid misinterpretation by leaving difficult words.

It is very understandable that non GSL and AWL words from students were very rare in MAWL and NMAWL because MAWL and NMAWL are deal with reading and writing academic article (Wang et al, 2008; Lei and Liu, 2016). Moreover, in the process of constructing both list Wang et al and Lei and Liu eliminated several words from GSL and AWL.

Nonetheless, Mukundan and Aziz (2009) set seven times word repetition as the standard of good frequency words in a textbook. Applying the use of seven times occurrence in students speaking, though it is not proper, there are only three words out of 62 (4.8%) that meet the criteria. The words are *headache* 17 times, *migraine* 14 times and *okay* 19 times.

Both *headache* and *migraine*, with total 31 frequency, denoted common symptoms that met in daily. While Okay, with the highest frequency of the all 62 words, commonly used in spoken language to show agreement or back channels as indicated by Gerot and Wignell (1995). Medical students who pretend as real medical doctor tried to ask confirmation to patient to agree with or an effort for doctor to start new topic. Thus, the word is used frequently in conversation.

Heng and Abdullah (2013) emphasize that "who speaks what language to whom and when" are the keys of language use. The medical students who chose to use more common words than sophisticated words try to get successful explanation during informing diagnosis. Patients are people who have less knowledge on medical terms or scholarly medical words, doctors need to prefer tranquil lexical to contribute understandable diagnosis.

6. Conclusions

Using corpus software analysis on evaluating spoken language in EMP classroom brings better insight on vocabularies load as part of assessing performance skill. The composition spoken diagnosis words on medical English students are not outlying from what the textbook has as shown by similarities on students and textbook corpora. Both students and tape script textbook are dominated by content words in numbers. However, the words produced by students mostly fall into 2000 high frequency words characterized by big repetition on some word types. Interestingly, students do not use sophisticated language in explaining their diagnosis to the patient. Students of medical English program tend to avoid academic words to get a straightforward understanding for patients. Looking at medical specific words, there are few medical terms that they use during speaking to patient. Students, as candidate of medical doctors overuse common words and exclamation to have smooth conversation with patients. Overall,

general English words benefit patient and doctor communication for the sake of comprehension of the messages.

The small number of data size becomes flaw on this corpus study. The small number of word types found on 2000 high frequency words can be caused by lack of data number. The future researchers are suggested to use bigger running words to get reflection of medical spoken phenomena. Nevertheless, generalization of this study can be used as foundation to measure success of EMP program related to vocabulary coverage.

Teachers of English program, especially medical English, are suggested to calculate vocabulary load among their students in order to identify classroom strength and weakness, vocabulary achievement. After knowing condition of students' corpora, teachers can design viable strategies and materials for successful instruction. It is recommended that medical students are exposed with GSL words that represent characteristic of spoken language. Explaining diagnosis that needs more daily vocabularies should be supported with vocabulary training. One of teaching technique that can be utilized is repetition of words as suggested by experts, at least seven times repetition.

Acknowledgements

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CONTENT ANALYSES ON THE USE OF TECHNOLOGY IN DYSLEXIA: THE ARTICLES IN THE WEB OF SCIENCE DATA BASE

Research Article

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CONTENT ANALYSES ON THE USE OF TECHNOLOGY IN DYSLEXIA: THE ARTICLES IN THE WEB OF SCIENCE DATA BASE

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Abstract

Articles published in the Web of Science database between 2014 and 2019 (March) were screened in this research. This is because of its respected position in the field of technology and the peer-reviewed secured structure of this database. From a total of 56 articles within the scope of the screening, 46 articles were included in the study. As a result of this research, particularly children and students were selected as the sample group of the researches. It has emerged that questionnaires were predominantly used as the research instrument. Quantitative data collection tools were used most frequently as the means of data collection medicals area as the research fields through traditional teaching methods. It was observed that assistive technology is the most widely used field in technology for dyslexia. It is seen that optometric neuropsychological assessments, digital tools and adaptive mobile learning as devices were used the most in research. The lecture-based method is seen to be the most used teaching method in the present study.

Keywords: Technology, Dyslexia, Assistive Technology and Web of Science.

1. Introduction

The number of people with disabilities around the world is increasing exponentially, and the World Health Organisation (WHO) estimated that around 10% of the global population has been identified with some kind of disability. According to predictions for Europe, at least 18% of the population will have a disability during the next 20 years.

Custom curricula are focused on people with special needs, which incorporate learning difficulties, mental clutters, physical or formative capacities, and adopt learning strategies that are tailored to address individual students' needs.

In many nations, state primary schools pursue a strategy of incorporation, where children with special needs can study alongside different students (Maham & Gulnaz, 2019). According to the International Dyslexia Association (2002), dyslexia as a specific learning disability is a neurobiological disorder that comprises difficulties in learning, such as the accurate or fluent recognition of words, poor spelling, and problems in decoding information.

These difficulties are based on the phonological deficits within language and other consequences of this disorder include difficulty in comprehension while reading, and general difficulties in reading which can negatively impact the development of vocabulary and general background information.

Dyslexia is one such Specific learning disability (SpLD) that involves challenges with reading, and is the most common and widely researched learning disability.

Dyslexia is a neurological and lifetime condition that is often inherited. One out of ten people have some or the other traits of dyslexia and because of this, around 20% face difficulties in reading and writing. Appropriate guidance provided to students with dyslexia at an early age can drastically reduce the problems they face. Currently, available web page accessibility guidelines focus more on reading and writing, with inadequate attention for other aspects of online learning such as computer-mediated communication.

According to Gupta (2019), with massive strides in technology, a digital solution to this problem can prove to be more effective and efficient. Formative phonological dyslexia is a neuro-psychological confusion depicted as a difficulty in gaining reading abilities, in spite of satisfactory knowledge and sufficient perusing openings.

Dyslexia has a solid hereditary premise that is reflected in regions of the genome, primarily on chromosomes 6 and 18, which may contain inherited variations that cause reading inability (Leah & Heads, 2018). Learning is not limited to conventional classroom settings with the execution of web-based learning. Website page accessibility is one of the achievement factors for actualizing web-based learning, other than student's cooperation, the intelligence of a learning situation, content introduction and structure (Loren & Chen Jen, 2018). The neurological learning disability defined as Dyslexia is characterized by difficulties in various aspects of writing skills, making individuals unable to develop age-appropriate and ability-appropriate functional skills, there is also exist noticeable affordance and accessibility issues concerning the remedial help and assistive technology adoption (Tariq & Latif, 2016).

Dyslexia is one of the most common learning disabilities. It is described as a disorder manifested by difficulty in learning to read despite conventional instruction, adequate intelligence, and sociocultural opportunities. It affects approximately 7–10 % of the population across most languages and cultures (Fatima Ezzahra, 2016).

Although dyslexia occurs independently of intelligence, it cannot be cured, which means the problem faced will continue to occur throughout the life span (British Dyslexia Association 2007).

1.1. Aim

The purpose of this study is to identify the trends in the articles related to the field of technology usage in dyslexia published in the Web of Science database between 2014 to March 2019. The results showed that most studies in the field of technology usage in dyslexia were carried out in 2018 according to the years. Most studies were published in the United States of America (USA), United Kingdom (UK), France and Spain. The reason for choosing this database was its open and easy access for users. Additionally, it is peer-reviewed and has a respected position in the academic environment. The additional objectives of this study are as follows

1. What is the number of publications by year of study?
2. What is the number of publications according to the countries?
3. How is the distribution of studies in terms of sample groups?
4. What research models were used?
5. Which teaching methods were used in the studies?
6. What data collections tools were used in the studies?

7. What is the research field?

1.2 Dyslexia

The word dyslexia comes from Greek words: "dys", which means "difficulty", and "lexis", which refers to "language or words". This is a type of learning disability, a language processing disorder, and this term is used when people have difficulties in learning to read and write, although it is not associated with a low level of intelligence. As research in this area has developed, there has been significant debate regarding the term itself, the definition and the criteria used to classify it. Dyslexia is a general term for disorders that involve difficulties in learning to read or interpret words, letters, and other symbols, but that does not affect general intelligence. Dyslexia is also known as a reading disorder and is characterized by trouble with reading despite normal intelligence. Different people are affected to varying degrees.

Dyslexia is a specific learning disability in terms of reading; children with dyslexia have trouble reading accurately and fluently and they may also have trouble with reading comprehension, spelling, and writing. According to the Oxford Advanced American Dictionary, dyslexia is a slight disorder of the brain that causes difficulty in reading and spelling, for example, but does not affect intelligence see related entries: Mental and emotional problems Word Origin. According to Tariq and Latif (2016), dyslexia is a learning disability that makes individuals unable to develop the age and ability, appropriate reading and writing skills often negatively affecting both their academic achievements and self-image.

According to Jenjekwa, Rutoro, and Runyowa (2013), dyslexia is any individuals with disabilities or are all learners with visual impairments including blindness, intellectual disabilities, hearing impairments including deafness, speech or language impairments, orthopedic impairments, traumatic brain injuries, health impairments, autism, emotional disturbances, and specific learning disabilities. Dyslexia is a disorder related to problems with the visual notation of speech and with alphabet writing systems that have phonetic construction (Siegel, 2006). Many definitions have emerged over time as a result of various research methods. However, one that has been widely accepted by the scientific community has been proposed by the World Federation of Neurology, in Cruz (2009), and by The International Dyslexia Association (2002), which defines dyslexia as a language learning disorder, regardless of the intellectual capacities of the dyslexic and that endures over time.

2. Methodology
2.1 Research method

This is a qualitative research study that uses the content analysis method. The aim is to determine and evaluate the usage of new technology in relation to dyslexia. The Web of Science database has been selected and the year limit has been set between 2014 to March 2019 for this research. The Keyword "Technology usage in Dyslexia" was written in the search engine during the scanning process. All the articles that contained "Technology in Dyslexia" as a keyword were included in this research.

2.2 Data Collection Tools

This involved the design of an Excel table using the following headings: Title, year, country, example group, research method, data collection method, working subject area, application tools used, devices used, method of teaching, and results are the classification for each journal as headings to analyse the journals on dyslexia.

2.3. Data Analysis

All the data were accumulated for each article in Microsoft word Excel package program formed according to content analysis criteria. Subsequently, the data reports were classified and frequencies were taken according to the stated criteria by using filter characteristics.

3. Findings
3.1. Distribution of Articles According to Publication Years

Table1. *Number of Articles According to Publication Years*

Year of publication	Frequency	Percentage %
2018	18	39.1
2019	08	17..4
2016	06	13.0
2014	06	13.0
2017	05	10.9
2015	03	6.5

As can be seen in Table 1, the highest number of research publications on technology usage in relation to dyslexia was in the year 2018 (f=18) and the lowest was in the year 2015 (f=3). Even though the research time of year 2019 is limited until March, the number of articles published in 2019 also has respectable results. Therefore it can be predicted that that the publication number will increase in 2019 after March. In addition, this result showed us that the number of articles will be increased by the year 2019 since March is one quarter of the year.

3.2. Distribution of Articles According to Countries

Table2. *Number of Articles According to Countries*

Countries	Frequency	Percentage%
USA	08	17.4
UK	05	10.9
Spain	04	8.7
France	04	8.7
Pakistan (Karachi)	03	6.5
Canada	03	6.5
China	02	4.3
Malaysia	02	4.3
Qatar	01	2.2
Norway	01	2.2
Morocco	01	2.2
Jamaica	01	2.2
India	01	2.2
Zimbabwe	01	2.2
Japanese	01	2.2
Brazil	01	2.2

Hongkong	01	2.2
Slovenia	01	2.2
Israel	01	2.2
Croatia	01	2.2
Italy	01	2.2
Czech Republic	01	2.2
Indonesia	01	2.2

As it can be seen in Table 2, the highest number of publications on Technology usage in Dyslexia was in the United States of America USA (f=08), the United Kingdom (UK) (f=05), Spain and France (f=04) and 16 other countries had less with (f=01).

3.3. Sample Group

Table 3. *Sample Groups of Articles*

Sample Groups	Frequency	Percentage%
Children	15	32.6
Students	13	28.3
Adults	05	10.9
Secondary school students	04	8.7
Teachers	02	4.3
Higher student	02	4.3
Learners	01	2.2
College students	01	2.2
Young people	01	2.2
Young adults	01	2.2
University students	01	2.2

According to Table 3, the most used sample group was children (f=15). Following this, the second highest sample group was students (f=13) and the third highest was adults (f=05). The lowest sample groups were five different groups (learners, college students, young people, young adults and university students (f=1).

3.4. Distribution of Articles According to Research Methods

Table 4. *Researching Method in Articles*

Research Methods	Frequency	Percentage%
Practical	06	37.5
Experimental	04	25.0
Student focused	03	18.8
Observation	02	12.5
discussion	01	6.2

The majority of the studies adopted Practical (f=06) research methods, as can be seen in Table 4. The second highest result was experimental (f=06), followed by

student focused (f=04) and as the other results included observation (f=02), discussion (f=01), which is the least.

3.5 Teaching Methods Used in the Articles

Table 5. *Teaching Methods Used in Articles*

Method of teaching	frequency	Percentage %
Traditional teaching method	07	36.8
e-learning	05	26.3
Mobile assisted learning	04	21.1
Problem-based learning	02	10.5
Coaching	01	5.3

Traditional teaching method had the highest frequency (f=07) based on the studies in the articles, followed by e-learning with a frequency of (f=05), followed by mobile-assisted learning with a frequency of (f=04), while problem-based learning has a frequency of (f=02), and coaching, which has the lowest frequency in terms of the teaching methods used in the articles in this study.

3.6. Used Data Collecting Tools in Articles

Table 6. *Data Collecting Tools Used in Articles*

Data Collecting Tools	Frequency	Percentage%
Quantitative	21	60
Qualitative	11	31.4
Mixed (quantitative-qualitativee)	03	8.6

Most of the data collection tools of studies are seen to be quantitative (f=21) in Table 5. Following this, the second-highest result is seen as qualitative (f=11) and the least is the mixed method (quantitative and qualitative) (f=03).

3.7 Research Fields

Table 7. *Subject Fields of Articles*

Subject Areas	frequency	Percentage %
Medical	09	25.0
Information technology	09	25.0
Foreign language	07	19.4
Special education	05	13.9
Lifelong learning	04	11.1
Engineering	02	5.6

As can be seen in Table 7, medical and information technology used in various fields of education has the highest frequency (f=09), followed by foreign language

(f=07), special education (f=05), lifelong learning (f=04) and engineering (f=02) education.

8. Table of Results

s/no	Criterion	Subject Areas	Frequency	Percentage %
1	Year	2018	18	39.1
2	Country	USA	08	17.4
3	Sample Group	Children	15	32.6
4	Research Methods	Practical	06	37.5
5	Teaching method	Traditional teaching method	07	36.8
6	Data Collecting Tools	Quantitative	21	60
7	Research Fields	Medical	09	25.0

As can be seen in Table 8, among used articles publish in 2018 is the highest (f=18), among the most publish country is USA with (f=08) children are mostly preferred sample group for the study (f=15) through practical as research methods with (f=06), as teaching method is the traditional teaching method with (f=07), while quantitative data tools is the most used in the study (f=21), medical research fields is more useful with (f=09) in education.

4. Conclusion and Discussion

According to the investigation on the search engines including the years between 2014 and 2019 (March), it can be seen that a large number of studies have been conducted on technology usage in dyslexia; the year 2018 has the highest studies on dyslexia, most of the studies were conducted in the United States of America (USA) and they were carried out with children using quantitative method of data collection through questionnaires and traditional teaching methods. Most of the research fields are medicals and research method are through practical, Assistive technology interventions can be helpful for adolescents and adults with learning disabilities, but interventions need to be carefully compared and customized to the individuals. Assistive technology provides students with learning disabilities opportunities to perform better in academic environments. Technology can often provide assistance for these students in unique ways that help them overcome their learning difficulties. As technology becomes ubiquitous in the classroom, it is consistently transforming educational opportunities for students with learning disabilities (Dyslexia's). Strengths associated with dyslexia and argue that a shift in mindset from the deficit view toward the neurodiversity view is required to build the capacity of students with dyslexia to thrive in learning and life.

The findings here suggest that in future evolutions-using assistive technologies available today-parallel neurological pathways for language processing can be exploited to optimize reading for those impaired. The increased amount of time spent using electronic devices is associated with a higher risk of dyslexia and hard to evaluate due to recall bias (Adkins & Turman, 2018). This application which is called Disability Learning Tool, Brushing Teeth Using Music for Autism has been tested to a group of autism children with mild cases and has shown positive result. It can be seen that the independence of children with autism is gradually increased. Assistive technology Results support the phonological model, with phonological skills on the pathway to word reading and serve as a sensitive tool to measure changes in autism symptomatology. According to Loren and Chen Jen, (2018) assistive technology the incompetence of lecturers in inclusive education, lack of provision of handouts and notes prior to presentation of lectures, inflexibility in assignments and examination, focus on disabilities rather than abilities, and patronizing behavior are barriers preventing the participation of students with disabilities in learning. Furthermore, results show that large scale simulations with a developmentally plausible computational assistive technology model of reading acquisition allow us to predict learning outcomes for individuals either children, students, adults and university students reading profiles with dyslexia on the basis of performance. According to Adkins and Turman (2018), student academic growth for all three methods of coaching; however, coaching via technology, a more efficient, less time-consuming method of giving teachers ongoing professional development, produced larger statistically significant Cohen's d effect sizes than the other two forms of coaching ranging from 0.22 to 1.01 in areas of phonemic awareness, decoding, comprehension, fluency, writing, and spelling. Tariq (2016) have identified the trends took place in the field of educational technology educational implications of implementing coaching via technology are also included based on the analysis of the conversation among students and teachers to identify problems in the learning process and enhance the student's skills, with dyslexia compensated for their processing deficits by relying on learning strategies and help seeking. As the results demonstrated, the use of technology was shown suitable to their needs, allowing dyslexics to achieve similar results to regular readers.

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PSYCHOLOGICAL WELL-BEING OF PROSPECTIVE TEACHERS: THE CASE OF PEDAGOGICAL FORMATION STUDENTS

Research Article

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Abstract

In addition to the undergraduate programs provided by faculties of education, in Turkey, Pedagogical Formation Education Certificate Programs are also provided by these faculties. Graduates of such programs are positioned as teachers in Turkey, the same as the graduates of faculties of education. Individual differences of teachers are of great importance in terms of closeness and determination toward students. In addition to personality, psychological features are also closely related to their professional competence and success, quality of education in general, and –maybe more importantly- the safety of the students. In this study, it was aimed to provide insight about the individual differences of students who attend pedagogical formation training by investigating the psychological status of those students through the analysis of the relationship between depression, anxiety, stress, coping by humor levels, humor types and their type of personality. It was observed that 40.2% of participants were in mild depression while 25.9% of them were in moderate to severe levels. Associations were investigated by point bi-serial correlation technique and it was found that those participants with Type A personality had higher levels of depression, stress, anxiety, and self-defeating humor style.

Keywords: Teacher Training, Pedagogical Formation, A and B Type Personality, Depression, Anxiety.

1. Introduction

The teacher education system in Turkey follows a binary route. While undergraduate programs of faculties of education are the primary path to becoming a teacher, pedagogical formation training (PFT) programs offered by the same institutions serve as the secondary route for receiving teacher credentials. Teacher training task was considered as a matter of higher education and assigned to universities by Higher Education Law No 2547 which was effectuated in 1982 (Akyüz, 2006). All teacher training programs in Turkish universities were rearranged as 4-year B.Sc. programs in 1989. In order to meet the increased need for teachers, starting from 1997, compact teacher training programs were created in addition to the standard teacher training programs of the higher education institutions. However, the quality of those short-term teacher training programs is a hotly debated topic (Çocuk, Yokuş, & Tanrıseven, 2015; Eraslan, & Çakıcı, 2011; Kızılçaoğlu, 2006).

Instead of a full-fledged teacher training, PFT program provides students with a limited instruction but with full teacher credentials. Teacher credentials seem to not have a significant

predictive value in identifying competence of teachers (Hanushek, & Rivkin, 2004; Ripski, LoCasale-Crouch, & Decker, 2011). PFT programs enable those who don't hold a degree from a faculty of education to become a teacher. Despite not experiencing a formal higher education training, faculty of open university graduates are also entitled to receive teacher credentials by completing the aforementioned programs. What elevates the importance of the issue is the fact that those programs in question pave the way of being a teacher for anyone who wants to be one (Azar, 2011) over a period of time measured in months. The ability to earn full teacher credentials by a limited teacher training in a relatively short period of time is an important obstacle to training of qualified teachers (Köse, 2017).

PFT process has undergone many changes. The education in question which was applied in the form of a master's without thesis was started to be given through a "certificate education" after 2010-2011 academic year (Kartal & Afacan, 2013). In addition to the changes in the structure and contents of the program, PFT programs have been reinstated by the Council of Higher Education, despite being abolished many times due to lack of quality (Çocuk, Yokuş, & Tanrıseven, 2015). The fact that these programs have always been reopened in spite of being closed many times indicates that PFT practice will remain in effect for a while. Considering that the teacher is the most important element of the education system (Şişman, 2007); scientific examination of the PFT process which is the secondary route of the teacher training system and the persons who have the right to become teachers with PFT certificates will be useful for obtaining prior knowledge about the future structure of the Turkish education system.

It is considered as a serious problem by faculty members in these programs that candidates are not being tested for their personality and psychological status (Köse, 2017). Since their attitudes, behaviors and emotional reactions can affect the student from a young age, teachers should be competent in terms of all qualifications (Varış, 1988). In the process of the evaluation, selection, and training of the students who want to participate in the PFT certificate program, the personal characteristics of the candidate are important in terms of the competence, qualifications, and professional success of the trainee, and even of the quality of the education service in general (Süral, & Sarıtaş, 2015). Teachers' involvement with their students affects not only their school achievement but also their personality (Küçükahmet, 2005). Considering teachers' effects on and their capacities to reach the students, the safety of the students should not be overlooked as well.

The fact that teachers are very close to and have crucial effects on children from early ages on makes the individual characteristics of the teachers important as well as their professional competence. Characteristics that dispose a person towards certain behaviors, choices, and experiences such as personality traits and emotional states may play important roles in a teacher's ability to interact in meaningful, engaging, and effective ways with students (Ripski, LoCasale-Crouch, & Decker, 2011). Özdemir and Polat (2016) stated that teachers should have a "solid and balanced personality" because of their effects on the lives of students. Arı (2015) argues that, in addition to qualifications specific to teaching profession, certain personality characteristics must be found in teacher candidates. Ripski, LoCasale-Crouch, and Decker (2011) state that "personality traits, separate from their educational training, are useful in predicting attitudes, behaviors, performance, and outcomes in organizational setting" (p. 77).

Considering that they are role models for students; besides their professional qualifications and personalities, the psychological status of teachers can also influence the psychological states of the students (Özdemir & Polat, 2016). Mentally and psychologically healthy teachers are needed to guide the students (Evers, Tomic, & Brouwers, 2004). Studies have indicated that teachers' performance in the classroom is linked to emotional states such as depression, anxiety, and stress levels (Hamre & Pianta, 2004; Ripski, LoCasale-Crouch, & Decker, 2011;

Uzman & Telef, 2015). Depression, anxiety and stress are the most common psychological and / or psychiatric health problems teachers experience (Uzman & Telef, 2015). Moreover; Haslam, Atkinson, Brown, & Haslam (2005) report that depression and anxiety have been shown to impair work performance and safety.

Ripski, LoCasale-Crouch, and Decker (2011) reported that the levels of depression, anxiety, and stress were lower for prospective teachers when compared to non-teacher peers. In the same study; it has been reported that teacher candidates, who had higher levels of depression, anxiety, and stress when they start teaching education, have implemented a less qualified teaching in the following years when they interact with students. Finally, Evers, Tomic, and Brouwers (2004) argue that mental issues may give way to teacher burnout which they describe as "emotional exhaustion, depersonalization and a reduced sense of personal accomplishment". They argue that teacher burnout negatively affects teachers, their students, and the educational system. Since perceived personal accomplishment is a factor in the teachers' strategies for coping with job stressors, psychological problems such as depression, anxiety, and stress weaken individual's ability to cope with those problems by reducing their sense of personal accomplishment through burnout. Moreover, interventions that reduce levels of anxiety and depression improve work performance (Ripski, LoCasale-Crouch, & Decker, 2011). Dumont and Provost (1999) conclude that social support doesn't necessarily help individuals with stress and depression. They argue that self-esteem, problem-solving and coping strategies, and positive social relationships are better protective factors.

Ripski, LoCasale-Crouch, and Decker (2011) stated that teacher's disposition and emotional state –particularly depression and stress- are related to his performance in the classroom and that this effectiveness is measured by the interaction between teachers and students. High negative emotions are predictive of poorer interactions between children and teachers (Hamre & Pianta, 2004). In addition to contributing to interaction between teachers and students, Chauvet and Hofmeyer (2007) state that humor is beneficial to both psychological well-being as well as a learning experience. They emphasized in their work that humor is a useful "coping strategy" in relation to psychological health. Özdemir, Sezgin, Kaya, and Recepoğlu (2011) emphasized that humor is a way of coping that enhances social relations, promotes interpersonal communication and relationship, and is useful for psychological health. Previous research indicate that humor is a natural and effective strategy for coping with stressors and negative emotional states (Brcic, Suedfeld, Johnson, Huynh, & Gushin, 2018; Eisenbarth, 2019; Lin, Li, & Han, 2018; Tagalidou, Loderer, Distlberger, & Laireiter, 2018; Tripathy, Tripathy, Gupta, & Kar, 2019). Hence, coping by humor is a strategy closely related to the psychological state of the individual and influences the interaction of the teacher with his / her students and therefore is closely related to the professionalism of the teacher.

Teacher burnout is associated with psychological status including psychosomatic symptoms (Sakharov & Farber, 1983) and mental health (Brenner & Bartell, 1984). Jepson and Forrest (2006) argue that, in addition to the environmental stressors and factors intrinsic to the teaching profession, personality may be another main contributory factor to teacher stress and burnout which is significantly related to teacher retention, turnover, and quality in teaching. They argue that individuals with Type A personality would show more pronounced physiological and emotional reactivity compared to Type B individuals and Type A behavior appears to mediate the existing effects of environmental stressors. It is necessary to develop and promote the use of instruments to accurately measure teacher burnout. Shedding light on the relationship between Type A personality and emotional states such as depression, anxiety, and stress may help develop a deeper understanding of individual differences required to better identify teachers and teacher candidates who are prone to such threats. It will also help develop better

coping strategies and methods which are especially useful for most vulnerable teachers and teacher candidates.

It should also be noted that, according to a study conducted on individuals between the ages 18 and 65 years in Oslo, capital of Norway, 13.4% of the population suffers from personality disorders (Torgersen, Kringlen, & Cramer, 2001). Jepson and Forrest (2006) state that personality trait appears to mediate the existing effects of environmental stressors. They argue that personality and individual differences are pivotal to understanding why some people suffer work-related stress.

Moreover, Arsenault and Dolan (1983) state that tolerance of stressors such as working conditions depends on individual characteristics such as Type A personality and "interaction between stressors and individual characteristics results in either 'fit' or 'misfit' which can be measured by the presence or absence of various signs and symptoms of strain". They classify these signs and symptoms as "physiological (i.e. blood pressure, cholesterol, serum uric acid, etc.); psychological (i.e. depression, anxiety, job dissatisfaction, etc.); and behavioral (i.e. performance, absenteeism, sexual problems, drinking, excessive eating, etc.)". Jepson and Forrest (2006) report that Type A behavior significantly predicts perceived stress and Type A personality shows more pronounced physiological and emotional reactivity compared to Type B. Thus, profession, personality traits, and physiological states have a dynamic relationship in which Type A personality seems to be a predictor.

Type A and B personality theory was first described by Meyer Friedman and Ray Rosenman in 1950s while researching the risk of developing coronary heart disease. Type A personality is characterized by time urgency, impatience, and hostility and traditionally reported to be associated with coronary heart disease (Hisam, Rahman, Mashhadi, & Raza, 2014). Friedman (1996) suggests that Type A behavior is expressed through three major symptoms: (1) free-floating hostility, which can be triggered by even minor incidents; (2) time urgency and impatience, which causes irritation and exasperation usually described as being "short-fused"; and (3) a competitive drive, which causes stress and an achievement-driven mentality. They are often described as impatient, hasty, impulsive, ambitious, hyperalert, proactive, anxious, hostile, angry, workaholic, and overly concerned with time management. Friedman (1996) describes Type B personality as the contrast to those of Type A. They are often described as comparatively more tolerant, more relaxed, less competitive, more patient, and easy-going. People with Type B personality tend to experience lower levels of anxiety and display a higher level of imagination and creativity (McLeod, 2017).

With the light of the research above, it seems that a teacher's psychological well-being is a crucial factor both for their own and students' further developmental process. In order to be more specific, those questions should be answered: What is the prevalence of depression, anxiety, and stress among students attending the PFT program at Akdeniz University? To what extent do those students use humor as a coping strategy and which humor styles are employed? How do such negative emotional states, coping by humor, and humor styles relate to Type A personality?

In this study; it was aimed to investigate the psychological status of the students who attend the pedagogical formation education certificate program by examining the relationship between depression, anxiety, stress, coping by humor, humor types, and personality.

2. Method

Throughout the study, the ethical rules set by Akdeniz University have been observed and only consenting individuals have participated in the research.

2.1. Research design

The correlational research method was utilized in the research. There are a total of nine variables in the study. "Type A and B Personality" is the independent variable of the research. It is a dichotomous nominal variable and can only have values of 0 (Type B Personality) and 1 (Type A Personality). The other eight variables are continuous and used as dependent variables. Dependent variables of the study are: Severity of Depression, Trait Anxiety, Perceived Stress, Affiliative Humor Type, Self-Enhancing Humor Type, Aggressive Humor Type, Self-Destructive Humor Type, and Coping by Humor.

2.2. Participants

The data were collected through questionnaires from prospective teachers who were attending the pedagogical formation education certificate program at Akdeniz University Faculty of Education. A total of 111 teacher candidates from the certificate program participated in the study. While 69 (61.6%) of the participants were female students, 42 (37.8) were male. Participants were between 20-46 years of age and 74% were in 20-25 years age range. Of the students who participated in the survey, 51 (45.5%) –who are almost half of the participants- graduated from Turkish Language and Literature department.

2.3. Data collection tools

A demographics questionnaire was developed by the researchers and used to collect demographic data of the respondents. In addition to the demographics questionnaire, a total of six scales were used. Type A and B Personality Scale was used for determining whether the respondent is more likely to be Type A or B in terms of his or her personality. Beck's Depression Inventory was used for measuring severity of depression of the participants. Trait Anxiety Inventory was utilized for measuring trait anxiety. For measuring stress, Perceived Stress Scale was employed. Coping by Humor Scale was utilized to measure the degree to which respondents make use of humor in coping with stress. Finally, in order to assess four dimensions relating to individual differences in uses of humor, Humor Styles Questionnaire was used. Principal component analysis with varimax rotation was used to get the factors from the scales. Table 1 depicts the factors extracted from questionnaires.

Table 1. *Factors extracted from questionnaires.*

Variable	Number of Items	Loading Range	Eigenvalue	% of (Total) Variance
Depression	21	0.686 - 0.237	5.119	24.378
Trait Anxiety	20	0.812 - 0.182	6.622	33.109
Perceived Stress	10	0.802 - 0.536	4.471	44.714
A and B Type Personality	25	0.741 – 0.014	5.420	21.681
Coping by Humor	7	0.792 - 0.187	2.842	40.601
Humor Types				(43.300)
Affiliative	8	0.743 - 0.595	3.738	46.730
Self-Enhancing	8	0.752 - 0.280	3.262	40.771
Aggressive	8	0.643 - 0.278	2.263	28.285
Self-Defeating	8	0.757 - 0.159	2.834	35.422

All variables were constructed as interval variables. A new dichotomous variable for Type A and B Personality was formed, and those scoring above 73.14, which is the average of this scale, were evaluated as type A person (1) and those scoring below 73.14 were evaluated as type B person (0). Results of the reliability analyses in terms of Cronbach's alpha value are shown in Table 2.

Table 2. *Results of reliability analysis for scales and subscales.*

Scale	Variable	Cronbach's α
Beck's Depression Inventory	Depression	0.828
Trait Anxiety Inventory	Trait Anxiety	0.881
Perceived Stress Scale	Perceived Stress	0.860
Coping by Humor Scale	Coping by Humor	0.716
Type A and B Personality Scale	Type A and B Personality	0.815
Humor Styles Questionnaire	Affiliative Humor Style	0.830
	Self-Enhancing Humor Style	0.780
	Aggressive Humor Style	0.629
	Self-Defeating Humor Style	0.715

2.3.1. Type A and B Personality Scale

The scale was developed by Rathus and Nevid (1989) based on the work of Friedman and Rosenman (1974) to determine whether individuals have type A or type B personality traits. It was adapted for Turkish by Batıgün and Şahin (2006). The Turkish version of the scale (A ve B Tipi Kişilik Ölçeği) is a 5 point Likert type scale consisting of 25 items. Score range is 25-125 and higher scores indicate the intensity of type A personality traits in individuals. The scale is: 1=Certainly not appropriate for me, 2=Not appropriate for me, 3=Occasionally appropriate for me, 4=Comparatively appropriate for me, 5=Certainly appropriate for me. In this research, Cronbach's alpha value of the scale is 0.815.

2.3.2. Beck's Depression Inventory

The inventory was developed by Beck, Ward, Mendelson, Mock, and Erbaugh (1961) for measuring the severity of depression. It was adapted for Turkish by Hisli (1988). Turkish version of the scale (Beck Depresyon Envanteri) is a 4 point Likert type scale consisting of 21 items. Score range is 0-63 and higher scores indicate more severe depressive symptoms. The scale is: 0=I do not feel sad, 1=I feel sad, 2=I am sad all the time and I can't snap out of it, 3= I am so sad or unhappy that I can't stand it. The standard cut-off scores are: 0–9: minimal depression, 10–18: mild depression, 19–29: moderate depression, 30–63: severe depression. In this research, Cronbach's alpha value of the scale is 0.828.

2.3.3. Trait Anxiety Inventory

The inventory was developed by Spielberger, Gorsuch, and Lushene (1970) to diagnose trait anxiety and to distinguish it from depressive syndromes. It was adapted for Turkish by Öner and Le Compte (1983). The Turkish version of the scale (Sürekli Kaygı Envanteri) is a 4 point Likert type scale consisting of 20 items. Score range is 20-80 and higher scores indicate greater anxiety. The scale is: 1=Almost never, 2=Sometimes, 3=Often, 4=Almost always. In this research, Cronbach's alpha value of the scale is 0.881.

2.3.4. Perceived Stress Scale

The scale was developed by Cohen, Kamarck, and Mermelstein (1983) to measure the degree to which situations in one's life are appraised as stressful. It was adapted for Turkish by Yerlikaya and İnanç (2007). The Turkish version of the scale (Algılanan Stres Ölçeği) is a 5 point Likert type scale consisting of 10 items. Score range is 0-40 and higher scores indicate more perceived stress. The scale is: 0=None, 1=Almost none, 2=Sometimes, 3=Often, 4=Very Often. In this research, Cronbach's alpha value of the scale is 0.86.

2.3.5. Coping by Humor Scale

The scale was developed by Martin and Leftcourt (1983) to measure the use of humor in coping with stress and the association between sense of humor and mental health. It was adapted for Turkish by Yerlikaya (2009). The Turkish version of the scale (Mizah Yoluyla Başa Çıkma Ölçeği) is a 4 point Likert type scale consisting of 7 items. Score range is 7-28 and higher scores indicate greater frequency of mirthful behaviors. The scale is: 1=Strongly disagree, 2=Disagree, 3=Agree, 4=Strongly Agree. In this research, Cronbach's alpha value of the scale is 0.716.

2.3.6. Humor Styles Questionnaire

The questionnaire was developed by Martin, Puhlic-Doris, Larsen, Gray and Weir (2003) to assess four dimensions relating to individual differences in uses of humor: affiliative, self-enhancing, aggressive, and self-defeating. It was adapted for Turkish by Yerlikaya (2003). The Turkish version of the scale (Mizah Tarzları Ölçeği) is a 7 point Likert type scale consisting of 32 items. The scale is: 1=Strongly disagree, 2=Disagree, 3=Somewhat disagree, 4= Indecisive, 5=Somewhat agree, 6=Agree, 7=Strongly agree. In this research, Cronbach's alpha values for affiliative, self-enhancing, aggressive, and self-defeating humor styles are respectively: 0.83, 0.78, 0.629, and 0.715.

2.4. Data analysis

The data was transferred to the computer by the researchers. The scores of the latent variables were calculated by summation of the numerical values of the participants' responses. Data analysis was carried out by statistical measures. SPSS software was used for the general arrangement and analysis of the data, and evaluation of the results (IBM SPSS Statistics Version 22). Since the independent variable was dichotomous and dependent variables were continuous, relationships between variables were measured by point bi-serial correlation technique.

3. Findings

A Type Personality was the sole independent variable. Eight latent variables calculated from other scales served as dependent variables. Results of the descriptive analysis of the variables are shown in Table 3.

It was observed that, 51 (45.5%) of the participants were Type A, and the remaining 60 (53.6%) was Type B. While 59 (52.7%) of the participants were high on stress, 53 (47.3%)

were low. Results showed that more than half of the participants were high on stress. While 51 (45.5%) of the participants had trait anxiety, 61 (54.5%) did not. Only 38 (33.9%) of the participants were in the minimal depression level which is the lowest one. Of the participants, 45 (40.2%) were in mild, 26 (23.2%) were in moderate, and 3 (2.7%) were in severe depression levels. Depression severity levels are shown in Table 4.

Table 3. *Descriptive results.*

	Min.	Max.	Mean	Standard Deviation	Variance
Perceived Stress	7	37	20.91	6.699	44.875
Severity of Depression	0	31	13.58	7.420	55.057
Depression Severity Level	1	4	1.95	0.826	0.682
Trait Anxiety	28	70	45.65	9.742	94.914
Coping by Humor	10	28	18.20	3.541	12.538
Affiliative Humor	15	56	42.18	8.792	77.301
Self-Enhancing Humor	8	53	35.35	8.698	75.652
Aggressive Humor	8	42	21.12	7.424	55.113
Self-Defeating Humor	9	52	27.04	8.588	73.755
Personality	43	106	73.14	12.787	163.500

Table 4. *Depression severity levels.*

	f	%
Minimal Depression	38	33.9
Mild Depression	45	40.2
Moderate Depression	26	23.2
Severe Depression	3	2.7

Note: "**f**" represents frequency while "**%**" stands for the percentage.

It was observed that; there was a positive and statistically significantly correlation between Type A Personality and Stress (r_{pb}=0.302, p<0.001), Depression (r_{pb}=0.327, p<0.001), Anxiety (r_{pb}=0.330, p<0.001), and Self-Defeating Humor (r_{pb}=0.282, p<0.01). Type A Personality did not correlate with Coping by Humor, Affiliative Humor Style, Self-Enhancing Humor Style, and Aggressive Humor Styles. Significant correlations between Type A personality and dependent variables are shown in Table 5.

Table 5. *Correlations with Type A personality.*

	r$_{pb}$	p
Perceived Stress	0.302	<0.001
Depression	0.327	<0.001
Trait Anxiety	0.330	<0.001
Self-Defeating Humor	0.282	<0.01

Note: "**r$_{pb}$**" represents point bi-serial correlation coefficient while "**p**" stands for the statistical significance.

4. Discussion

The purpose of the study was to investigate the psychological status of the students who attend the pedagogical formation education certificate program by examining the relationships between depression, anxiety, stress, coping by humor, humor types, and personality. The results indicated that almost half of the students fall into Type A personality category which is significantly associated with depression, anxiety, stress, and self-defeating humor. Results also indicated that proportion of individuals suffering from depression, anxiety, and stress are significantly higher than norm values.

Mean perceived stress level of PFT students (20.91) was lower than previously reported mean values. Güvendi and Hazar (2016) reported that mean perceived stress for students of physical education teaching, classroom teaching, and pre-school teaching departments were 27.7, 28.1, and 28.1, respectively. However, the proportion of students who have higher stress levels (52.7%) was greater than what Bayram and Bilgel (2008) reported as the proportion of university students who have stress levels of moderate severity or above (27%). Results indicate that stress is prevalent among PFT students but its severity seems to be lower than expected. The decrease in mean stress level may be a result of the new job opportunity that PFT certificate provides. Dumont and Provost (1999) state that self-esteem is the "prominent protective resource that youth can use against daily negative life events". They argue that a strong perception of control and confidence in abilities "guard against negative perceptions of daily stressful situations". It seems that PFT students may be feeling that PFT certificate is an instrument increasing their capacity to cope with unemployment. Thus, being a PFT student may result in a more positive personal perception and, as a consequence, higher self-esteem.

Mean trait anxiety (45.65) was higher than what Spielberger (2010) reported as norm mean values for working adults (34.89 for males, 34.79 for females) and college students (38.30 for males, 40.40 for females). In addition to the mean value, percentage of participants who had anxiety (45.5%) was also greater than what Uzman and Telef (2015) reported as the proportion of teachers who suffers from anxiety (%30.7). Results indicate that even though PFT students are better at coping with stress, their anxiety persists at higher levels. Teacher candidates who do not seek support from mother, father or siblings, who do not believe that they will be helped, who fear from being judged by others, and who have low self-confidence have higher levels of anxiety (Uzman & Telef, 2015). Haslam et al. (2005) report that high-anxiety individuals perceived a lack of understanding among their colleagues and managers about the nature of anxiety, felt that their managers offered little help, felt stigmatized, and "were reluctant to tell people at work about their illness". Students enroll in PFT programs because their current professions do not provide them with satisfactory job opportunities. It seems that PFT students perceive themselves to have lower social status because of their unserviceable profession. They

may be feeling that nobody can help them because of the nature of the economy and job market. PFT certificate program seems to lower their stress but their anxiety persists because of the uncertainty about their social and economic status due to the quality of the education provided by those programs.

Mean severity of depression (13.58) was higher than the norm mean value (9.14) reported by Whisman and Richardson (2015). They also reported that 74% of undergraduates had depression scores lesser than 13 and only 12% had depression scores higher than 19. Among teachers, Uzman and Telef (2015) reported as low as %5.5 as a proportion of individuals suffering from depression. In this study, PFT students who have moderate to severe depression levels (depression level>19) constitute 25.9% of all the participants. Results indicate that both mean levels and the proportion of participants who suffer from moderate to severe depression are considerably higher than norm levels and values reported in previous research. It seems that PFT students need serious help regarding this negative emotional state.

Herman-Stahl and Petersen (1996) state that ineffective coping is a risk factor for depression. They report that individuals with depressive symptoms have poorer coping skills, more negative self-efficacy expectations and outcome expectancies, and less satisfactory relations with family and peers. Dumont and Provost (1999) also highlight the negative relationship between coping skills, satisfactory relations with family and peers and depression. They also report that self-esteem and positive personal perception also correlate with depression. It seems that PFT students struggle with the social and economic consequences of having an unserviceable profession. While self-esteem, self-confidence, coping skills, and personal perception seem to be the intrinsic risk factors for depression; interpersonal relationships especially the ones with family and peers, and outcome expectancies may be extrinsic risk factors. Enrolling in a PFT program helps reduce perceived stress levels but more serious and deeper emotional states such as anxiety and depression seem to be persisting.

Among humor styles, 45.5% of the participants are inclined only to Self-Defeating Humor Style and they can't use humor even as a coping strategy. Humor is an important coping strategy and it is useful for coping with psychological health problems such as depression, anxiety, and stress. Humor also enhances social relations, promotes interpersonal communication, and influences the interaction between teacher and his / her students. Depression, anxiety, and stress reduce the ability of the individual to cope with stressors and weaken his or her social relationships. These individuals need to improve their coping techniques and be more socialized. The inability of most PFT students to use humor as a coping strategy is an indication that they need external help to improve their coping skills.

Fifty-one (45.5%) of the participants were observed to have A Type personality. The strong correlation of A Type personality with stress, anxiety, and depression indicates that almost half of pedagogical formation students appear to need psychological support. A Type personality is often associated with impatience, impulsiveness, stress, anxiety, hostility, and anger. Results of this study indicate that almost half of the PFT students are in an unsteady psychological state. These individuals may not be fully ready to display a behavioral pattern traditionally expected from a teacher because of their A Type behavioral pattern which seems to be associated with negative emotional states. Their current perturbed and unsteady mood may also stem from the fact that for a considerable part of these individuals, teacher credentials is an escape from their current problematic social and economic status. Some of those individuals may be viewing PFT certificate as a last chance for a better paying job.

5. Conclusion

Findings revealed that, even though mean perceived stress level of PFT students was lower than previously reported mean values, the proportion of students who have higher stress levels was greater than previously reported proportion for university students who have higher stress levels. Mean trait anxiety of PFT students was higher than previously reported norm mean values for working adults and college students. Percentage of participants who had anxiety was also greater than the previously reported proportion of teachers who suffers from anxiety. Similarly, mean severity of depression was higher than the norm mean value and proportion of PFT student suffering from moderate to severe depression was also greater than previously reported proportion of teachers suffering from moderate to severe depression. Hence, results indicate that (a) PFT students had higher mean values for both depression and anxiety compared to population means values and (b) proportion of individuals suffering from depression or anxiety were considerably higher than values reported in previous research. Moreover, among humor styles, almost half of the participants were inclined only to self-defeating humor style and they seemed to be unable to use humor even as a coping strategy.

Results indicate that stress is prevalent among PFT students but its severity seems to be lower than expected. The decrease in mean stress level may be a result of the new job opportunity that PFT certificate provides. Enrolling in a PFT program helps reduce perceived stress levels but more serious and deeper emotional states such as anxiety and depression seem to be persisting. Depression, anxiety, and stress reduce the ability of the individual to cope with stressors. The inability of most PFT students to use humor as a coping strategy is an indication that they need external help to improve their coping skills. It seems that PFT students need serious help regarding negative emotional states such as anxiety and depression. PFT certificate program seems to lower their stress but their anxiety persists because of the uncertainty about their social and economic status.

6. Recommendations

Depending on the findings of the study, teacher educators should have their eyes on possible signs of depression and consider intervention strategies for teacher candidates who might need them. It should be noted that those who suffer from such emotional states may not seek for help or even may not believe others can help them. Creating environments and opportunities for teacher candidates for socialization and attending social activities may also help. In addition to psychological help, students may be provided with help for learning coping strategies against stress, anxiety, and depression.

In addition to creating intervention and protection strategies for helping with stress, anxiety and depression, stakeholders should note that letting severely depressed individuals become teachers and start teaching in schools may be harmful to the students, colleagues and for the education service in general. A strategy is needed for detecting and rightfully managing individuals who want to enroll in teacher training programs and who are suffering from such severe levels of emotional states and mental illnesses.

Most of the PFT students seem to be unable to use humor as a coping strategy which is an indication that they need help to improve their coping skills. Students of PFT programs should be able to access resources that will help them improve their coping skills not only for their personal psychological problems but also for helping them improve their skills for interacting with their future students.

Policymakers should reconsider offering teacher credentials as a life jacket through PFT-like programs to those who are in a great need for a job. The teaching profession should not be viewed as a solution for unemployment. Instead, programs offered by higher education

institutions may be better planned so that individuals will be spared from earning degrees which will result in an unserviceable job. In addition to that, those individuals who want to enroll in a license or certificate program that will grant them teacher credentials should be assessed with a sound personality testing process. At least those individuals with personality disorders that might put students and colleagues at risk may be directed to institutional help that they themselves do not even know they need. Finally, it appears that a considerable part of those PFT students are susceptible to teacher burnout when they start working in schools. Results of this study reveal that there is a room for improvement regarding teacher burnout by developing measures to detect those who are prone to teacher burnout, enhancing the content of the PFT program in a way so that it provides teacher candidates with resources to cope with factors leading to teacher burnout.

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WHAT DO PRE-SERVICE PHYSICS TEACHERS THINK OF STUDY SHEETS?

Case Study

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Abstract

In this study, the aim is to take the views of pre-service teachers on study sheets and evaluate these views. Problem question of the study was determined to be "What are the views of pre-service physics teachers on study sheets?" In this study, which was realized in accordance with the aims of qualitative research, a case study model was utilized. The study group consists of 12 pre-service teachers who are seniors at the department of physics education at a state university during the spring semester. In the study, data were gathered via opinion forms and semi-constructed interviews. The obtained data were analyzed through content analysis. At the end of the study, the following themes came to the fore: "Appropriateness of study sheets for teaching," "The effect of study sheets on learning," "and "The applicability of the study sheets." It was determined that concerning study sheets, pre-service teachers think that study sheets can decrease misconceptions, enable meaningful learning, increase interest and attitude, determine the level of readiness, and can be used to relate topics with daily life. Moreover, pre-service teachers indicated that preparing study sheets and applying them takes too much time. At this point, it can be suggested that pre-service teachers make use of computer-aided study sheets to save time.

Keywords: Study sheet, pre-service physics teacher, teaching material.

1. Introduction

Contemporary life expects individuals to have the skills of identifying a problem, researching on and solving it. Instead of memorizing information, individuals today are required to reach information through appropriate means, to use this information, and to be able to provide different solutions to the problems they face (Karamustafaoğlu, 2006). It is why constructive learning is on the fore in the teaching programs that have been developed in the last decade. With the constructive learning approach, the aim is to enable individuals to construct their own knowledge and construct new knowledge by using their pre-existing knowledge. At this stage, it is believed that using different methods, strategies, and materials along with a constructivist approach would enrich the learning environments (Aydın & Balım, 2005). Using teaching materials specifically help students construct knowledge and it supports the realization of a meaningful learning, because teaching materials make it possible for abstract concepts to be concretized and for teaching to be realized more effectively (Gürbüz, 2007). Study sheets have become more important as a visual and written tool within the constructivist understanding. In addition to functioning as a guide during learning, they are also considered to be a material or evaluation tool that would enable active class participation, a guide through topics and concepts, and reveal previous knowledge (Yağdıran, 2005; Tan,

2008). When study sheets are prepared, three parts are taken into consideration (Çakır & Cerrah, 2006). In the first part, there are stimulants related to the topic or the concept such as a picture, a question or a caricature so that students may be steered towards the concept or the topic. In the second part, there are activities, and students are expected to work on a mental and physical level and arrange findings. Last part is the evaluation part, and there are evaluation questions related to the concept or the topic (Karamustafaoğlu, 2006). Students are asked to pass from one step to the other having comprehended each knowledge step with the study sheets. Thus, each part should be connected to one another. Therefore, students will be able to reach the solution by easily comprehending the problem they face (Bozdoğan, 2007). There are certain points to pay attention to when preparing study sheets. For instance, it is important to follow the regulations in the preparation phase, to use colors in content, to give succinct information, to provide proper space for students to do the exercise, and to take into consideration students' level. Verbal aspects, such as the font, size of letters, color of the writing, and the space between sentences or paragraphs, should be prepared diligently and they should be formally appropriate (Yanpar, 2005). Study sheets that are prepared in this respect are expected to enrich students' learning experience. When studies were examined, it was seen that they focus primarily on the process and outcome of the study sheets prepared by pre-service students. In this respect, study results indicate that study sheets have positive effect on success, meaningful learning, motivation, interest and attitude, they enable students to acquire necessary behaviors, they enable students to use their skills, and they can make class environment more fun (Çelikler, 2009; Coştu & Ünal, 2004; Dede, 2010). At the same time, some studies express that students' misconceptions can be eliminated by using study sheets (Demircioğlu, Demircioğlu & Ayas, 2004). In the field of physics education, Coştu, Karataş and Ayas (2003) made use of study sheets in the learning of the effect of pressure over boiling heat of liquids. Similarly, Atasoy (2008) used study sheets in the learning of Newton's laws of motion. Both studies reveal that study sheets that are prepared in accordance with constructivist learning theory are helpful in getting rid of misconceptions on a given topic. Scherr and Hammer (2009) decided to use pre-service physics teachers enrolled at a university as their study group, and they made use of study sheets within collaborative learning activities. It was revealed at the end of the study that students talked about study sheets as a tool that is helpful in their learning by doing and experiencing. Saka and Yilmaz (2005) also indicated that students' success increased when they developed study sheets on electrostatics. In light of these studies, it can be seen that study sheets can be used in every level of learning, and that they can be a guiding material for various topics. As was expressed in Şaşmaz Ören and Ormancı (2012), there are not enough studies in the literature on the views of pre-service teachers on study sheets who will be applying the constructivist approach in their professional lives. Thus, the aim of this study is to get pre-service physics teachers' views on study sheets and to evaluate them. It is believed that taking the views of pre-service teachers, who have received information about study sheets throughout the semester and who have used them in applications during this process, will contribute literature. To this end, the problem sentence of this study was determined as "What are the views of pre-service physics teachers on study sheets?".

2. Method

In this part of the study, information about the pattern of the study, study group, data collection and application, and data analysis are given.

2.1. The pattern of the Study

Aiming to collect pre-service physics teachers' views on study sheets, this study is qualitative research. Qualitative researches aim to directly represent the viewpoints of

participants and to have an inductive analysis by focusing on the process through rich descriptions (Büyüköztürk, Kılıç-Çakmak, Akgün, Karadeniz & Demirel, 2008). This study, too, was realized in accordance with the aims of qualitative research. Case study model was employed in this study. Case study model was defined as a survey model by Karasar (2009); however, the case study model provides more detailed information compared to general survey models. Yıldırım and Şimşek (2006) define a case study as a research method that enables a thorough examination of a phenomenon or event within the frame of "how" and "why." A case study is a strong research method that helps observe the effects of cause-effect along with the real context (Cohen, Manion & Marrison, 2007). Similarly, in this study case study was employed because the aim is to determine pre-service physics teachers' views on study sheets, to get collect qualitative data and to get thorough information in this respect.

2.2. Study Group

The study was realized with the participation of 12 pre-service teachers enrolled at the department of physics education at a state university in Ankara during the Spring semester. Pre-service teachers were selected based on criterion sampling, which is part of purposeful sampling. To this end, the criterion was determined to be pre-service teachers with some school experience who can prepare study sheets and those who have taken the teaching practice class because these are what are expected of pre-service teachers if their views on study sheets are to be collected.

2.3. Data Collection and Application

Pre-service teachers were given information about study sheets for a class hour before application, and then they were asked to prepare a sample study sheet. Pre-service teachers' views were collected through opinion forms and one-to-one interviews during the three-week process. Application of the opinion forms took 20-25 minutes, and the semi-constructed interviews took 20 minutes. Opinion form was completed during the class hour, and the semi-constructed interviews were realized during the time that was free both for the pre-service teacher and the researcher. This whole process was voluntarily. There were four questions on the opinion form which was used as the data collection tool in the study:

Do you think teaching that is realized by using study sheets can be appropriate for the topics of physics? Explain.

What could be the effects on the students of teaching that is realized by using study sheets?

What can you say about the applicability of study sheets taking into consideration the level of students and the classroom sizes?

At which stage of the course should the study sheets be used if they are going to be used in the teaching of a course? Explain.

Pre-service teachers were asked to answer the four questions given in the opinion form. These four questions also formed the basis for the semi-constructed interviews, and pre-service teachers were asked different questions related to the answers they have given. With the application of the opinion form and the following semi-constructed interviews, the aim was to present data that support one another (Yıldırım & Şimşek, 2006). It can be argued that collecting different data on the same thing can be said to indicate the correctness of the decisions.

2.4. Data Analysis

In the analysis of data obtained in the study, content analysis was used. The content analysis which is frequently used in qualitative studies enables categories to be developed and comparisons on the topic can be made (Büyüköztürk et al., 2008). In this study, the aim was to thoroughly examine the data obtained through content analysis. To this end, data were coded by the researchers. Then common traits of these coded were found, and codes were collected under themes. Codes collected under themes were turned into a table by indicating their frequency and percentages. Codes, themes, frequency, and percentages can be found in the findings section. To have reliability, consistency between coders was calculated. Conformity percentage formula of Miles and Huberman (1994) was used in the calculation of the consistency between the two researchers who have PhDs in the field. Data were analyzed separately by the researchers, and their conformity was calculated to be 0,84. Then, researchers came together and reached a consensus on the places were conformity is low. In this respect, codes and themes expressed in the findings came about, and data reached its final version.

3. Findings

Data obtained from the views of pre-service physics teachers on study sheets were examined in this study. Views of pre-service teachers were gathered under four themes. These four themes have 21 codes under them. Findings obtained through views of pre-service teachers are given in detail below (Table 1).

Table 1. *Views of pre-service physics teachers on study sheets (N=12)*

Themes		Codes	f	%
Appropriateness of study sheets for teaching		Appropriate for all topics of physics classes	11	91,66
		More appropriate for thermodynamics, electricity, mechanics, and optics	5	41,66
		Not appropriate for the topics of physics classes	1	8,33
Effect of study sheets on learning	*Positive expressions*	Decreases misconceptions	12	100
		Provides meaningful learning	10	83,33
		Increases success	9	75
		Increases interest	7	58,33
		Increases positive attitude	7	58,33
		Helps determine readiness	4	33,33

	Enables students to relate topics to daily life	3	25
	Provides diversity in teaching through group studies	1	8,33
	Increases critical thinking skills	1	8,33
Negative expressions	Takes too much time to prepare and apply	4	33,33
	Can cause misconceptions	1	8,33
	Decreases the development of abstract, creative, and critical thinking skills.	1	8,33
Applicability of study sheets	Can be applied more effectively at 9th and 10th grades	11	91,66
	Class size should be small	6	50
	Class size should be big	6	50
	Can be applied at every class level	1	8,33
Place of study sheets within the running of the class	At the end of the class	11	91,66
	At the beginning of the class	8	66,66

As can be seen in the Table, under the theme "Appropriateness of study sheets for teaching" are three codes, namely, "Appropriate for all topics of physics classes," "More appropriate for thermodynamics, electricity, mechanics, and optics," and "Not appropriate for Not appropriate for the topics of physics classes." Within the frame of the first theme, pre-service teachers, in general, think that study sheets can be appropriate for all topics of the physics class (11, 91,66%). However, 5 pre-service teachers (41,55%) express that using study sheets would be more appropriate for thermodynamics, electricity, mechanics, and optics. 1 pre-service teacher (8,33%) thinks that study sheets are not appropriate for topics such as modern physics as they include abstract concepts. Some of the explanations given by pre-service teachers on the first theme can be seen below:

Maria: Study sheets can be used for all topics of physics. However, they need to be adjusted for each topic. Study sheets have the quality to realize multi-faceted objectives.

Jack: I think study sheets are more appropriate for thermodynamics, electricity, mechanics, and optics. Misconceptions related to these topics can be eliminated by study sheets.

Henry: Visuality is on the fore with study sheets, and they would not have any effect on topics such as modern physics that include abstract concepts; on the contrary, they may cause misconceptions. Thus, I think they should not be applied to physics in general.

There are a total of 12 codes – three in negative expressions and nine in positive expressions – under the theme titled "Effect of study sheets on learning." Concerning the second theme, the majority of pre-service teachers think that study sheets have a positive effect on learning. The most frequently expressed positive opinion is that study sheets can decrease misconceptions (12, 100%), and this is followed by "ensures meaningful learning" (10, 83,33%), "increases success (9,75%), interest (7, 58,33%), and attitude (7, 58,33%); meanwhile, the pre-service teachers indicate as a negative opinion that preparing and applying study sheets take too long (4, 33,33%). Expressions of pre-service teachers are given below:

Susan: Visuals within the study sheets attract students' attention and they increase students' interest in the class. Moreover, students get to chance to explore an entertaining side of physics, thus their attitude as well as success increases. By checking the answers students give t study sheets, one can see their mistakes and deficiencies. Therefore, their misconceptions can easily be recognized, and this can direct us in how to eliminate such misconceptions. Likewise, study sheets used at the beginning of the class can be used to measure students' levels of readiness.

Archie: On a positive note, study sheets may enable students to better understand concepts, and ensure that they relate these concepts to daily life. I also think they can increase success as they can get students' attention. On a negative note, they may hinder the development of abstract, critical, and creative thinking as they concretize topics.

Chuck: I think they would increase student success. However, preparing study sheets takes time.

The theme "Applicability of study sheets" were expressed through four codes. Pre-service teachers indicated in the third theme that applying the study sheets at the 9th and 10th grades would be more effective (11, 91,66%) because it is said that learning at this level is realized more within the frame of concepts related to daily life than through mathematical operations. They claim that meaningful learning can be realized through teaching based on this because they think study sheets can easily be related to daily life. One pre-service teacher (8,33%) thinks that study sheets can be used at every level of education. Moreover, while pre-service teachers indicate that using study sheets in large classes can be helpful in order to reach every single student, to make learning environment fun, and to enable brainstorming in-class environment (6, 50%), they also think that the use of study sheets in small classes can make it possible for the teachers to pay attention to the students more (6, 50%). Views of pre-service teachers on the third theme are given below:

Veronica: It may be more appropriate to apply study sheets in the 9th and 10th grades because these classes are more about comprehension than about doing operations, and I think study sheets would be more effective at these levels. Moreover, through a lecturing with study sheets that are based on problems and visuals related to daily life, meaningful learning will take place. In large classes, it is difficult to reach each and every student, so study sheets play an important role for students to internalize the topic.

Cherly: They can be applied in large classes. Brainstorming can be done, and applying study sheets can make the class environment become more fun.

Betty: They can be applied in small classes so that one can have better control in class, and can pay attention to each and every one of students.

The last theme, "Place of study sheets within the running of the class," was explained through two codes. In this theme, pre-service teachers mostly think that study sheets should be used at the end of the class (11, 91,66%). They argue that by doing so they could note students' misconceptions and their level of learning. Pre-service teachers who think that they should be used at the beginning of the class (8, 66,66%) indicate that students' level of readiness can be determined by applying study sheets at the beginning of the class. Views of the pre-service teachers are given below:

Lili: They should be used at the end of the class so that we can determine to what extent students have learned the topic, and what they have not understood, and what their misconceptions are.

Casey: They should be used at the beginning of the class so that we can determine students' level of readiness.

4. Discussion, Result and Suggestions

As a result of the study, views of pre-service physics teachers on study sheets were examined under the following themes: "Appropriateness of study sheets for teaching," "Effect of study sheets on learning," "Applicability of study sheets," and "Place of study sheets within the running of the class." Looking at the expressions of pre-service teachers, it can be seen that their views are usually positive concerning study sheets. For instance, most of the pre-service teachers indicated that study sheets are appropriate for all topics of physics and that they are more effective in such topics as thermodynamics, electricity, mechanics, and optics. Pre-service teachers indicated that study sheets are not really appropriate for topics such as modern physics which contains abstract concepts. In Bozdoğan's (2007) study on study sheets, it was determined that the use of study sheets enabled students to actively participate in class and that students would answer questions more willingly with more motivation. Moreover, it was put forth that pre-service teachers gained experience by preparing study sheets on each and every topic and their proficiency on the topics increased as a result. Indeed, it is believed that pre-service teachers, who have enough experience with study sheets, would increase students' levels of readiness (Bozdoğan, 2007). Those pre-service teachers who think that study sheets are appropriate generally for each and every topic of physics also believe that they could increase their mastery on topics by preparing study sheets for the topics included in the physics education program, and that they could provide a more effective teaching. Meanwhile, it was determined that the pre-service teachers who think that study sheets have a positive effect on learning believe that study sheets decreases misconceptions, enables meaningful learning, increases success, attitude, and interest, determine students' levels of readiness, and can be used to relate topics with daily life. Moreover, it was voiced by the pre-service teachers that study sheets increase critical thinking skills, and provide diversity in teaching by encouraging group study. Indeed, it is known that study sheets are designed based on different teachings, approaches, methods, and techniques. Thus, it can be seen in literature that study sheets, which are designed as such within the frame of constructivist approach, provide positive improvement in students (Akgün, Gönen & Yılmaz, 2009; Burhan, 2008). Literature specifically puts forth that study sheets are effective in detecting students' previous knowledge, determine and eliminate their misconceptions (Akgün & Gönen, 2004; Coştu et al., 2003). In addition to talking about the positive aspects of study sheets, pre-service teachers also mentioned negative points about study sheets, namely, that they take too much time to prepare and to apply. At this point, it can be said that preparing study sheets is not easy and it takes time. However, it should be kept in mind that study sheets contribute to learning as they can strengthen students' knowledge of topics, teachers can give feedback to students thanks to them, and they can help summarize the topic (Kurt & Akdeniz, 2002). It can be suggested that teachers use computer-

aided study sheets in order to save time (Saka & Yılmaz, 2005). Here, a great responsibility befalls academic staff in introducing computer-aided study sheets and in helping pre-service teachers design them through applied examples. It is believed that the academic staff should have a specific focus on the preparation of study sheets in their teaching technologies and material design classes. Moreover, as a negative aspect of study sheets, pre-service teachers contend that study sheets can create misconceptions and can decrease students' abstract, creative, and critical thinking skills. However, as is known, study sheets help concretize abstract concepts and enable more effective learning to take place (Gürbüz, 2007). At this point, it can be suggested that pre-service teachers can be advised to pay attention to the content of the topic and to check at which part of the topic they can make use of study sheets. In terms of the applicability of study sheets, pre-service teachers indicated that study sheets are more effective on students if they are applied at 9th and 10th grades because pre-service teachers see that concepts related to daily life and visuality are more on the fore instead of mathematical operations in the 9th and 10th-grade curriculum. At this point, pre-service teachers contended that study sheets are more appropriate at these levels. Indeed, they expressed that meaningful learning would take place especially in the 9th and 10th graders and student-centered teaching can be realized as such (Demircioğlu & Atasoy, 2006). In addition to this, half of the pre-service teachers argued that study sheets would be more effective in small classes because teachers could be more attentive to every single student in a small class by using study sheets. This brings to mind as is also indicated by Demircioğlu and Atasoy (2006) that study sheets would be effective in students consolidating and constructing their knowledge. Pre-service teachers who argued that study sheets would be more effective in large classes indicate that using study sheets would enable them to reach more students, do brainstorming in class, and to turn the class environment into a more fun place. It can be argued that students' motivation towards the topic and their interest could be increased in large classes through the activities given at the introduction part of study sheets, which are designed to draw students' attention. Finally, pre-service teachers indicated that study sheets should be used at the end of the class. They argued that by doing so the teachers could detect what students did not understand, what their misconceptions are, and what their learning levels are. In literature, too, it is argued that study sheets are used as an evaluation tool at the end of the class. At this point, using study sheets at the end of the class as an evaluation tool is thought to stem from adopting a traditional teaching and evaluation approach. However, if seen in a positive light, as was also indicated by the pre-service teachers, study sheets used at the end of the class would reveal students level and learning (Bozdoğan, 2007). Pre-service teachers who expressed that study sheets should be used at the beginning of the class argued that by doing so students' level of readiness would be determined. Literature supports this assumption and shows that students' level of learning and their misconceptions can be detected as such (Şaşmaz Ören & Ormancı, 2012).

In light of all these, it can be argued that study sheets have a positive effect on students and that they provide a more successful result compared to traditional teaching methods. This study was limited to pre-service physics teachers, but future studies may select pre-service teachers from different fields as their study group. At the same time, study sheet design and application process of pre-service physics can be researched. It is believed that studies to be realized for pre-service teachers to prepare study sheets would contribute to the field in terms of designing and developing study sheets, because study sheets, which consist of three parts, enable students to see a subject in its totality and consolidate it, and they also make them realize their mistakes or misconceptions. From a broader perspective, a study that focuses on eliminating misconceptions by combining study sheets with different teaching methods and techniques can be suggested. Finally, it is thought that student engagement would be ensured with studies in which concept caricatures are used at the introduction part of study sheets, and also students' misconceptions can be easily detected, because it is believed that study sheets that are prepared

in accordance with constructivist learning approach would contribute to meaningful learning by enabling students to draw relations between concepts.

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DEVELOPING A FRAMEWORK FOR THE INTEGRATION OF 21ST CENTURY LEARNING AND INNOVATION SKILLS INTO PRE-SERVICE ELT TEACHERS' PRACTICUM

Research Article

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DEVELOPING A FRAMEWORK FOR THE INTEGRATION OF 21ST CENTURY LEARNING AND INNOVATION SKILLS INTO PRE-SERVICE ELT TEACHERS' PRACTICUM

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Abstract

Research has shown that teacher education programs are ineffective in preparing teachers for 21st century skills so there exists a need for professional development to improve teachers' knowledge and practices which improve student learning outcomes. Teachers' Professional Development (PD) has been intriguing researchers in the 21st first century more than the previous century since the skills students need to learn in preparation for further education are more sophisticated in this century. This paper aimed to develop a framework to integrate 21st century learning and innovation skills (4Cs) into pre-service ELT teacher education curriculum framework for 21st century learning and skills. The framework was developed through a full evaluation of the related research and analysis of a 12-week teaching practicum data. It was intended to be a guide for those who are developing professional development programs for 21st century skills. The developmental process revealed positive casual relations between the framework developed and the probability of having positive and significant results. Regarding the focus of the framework, we also observed more positive outcomes for the intervention of 21st century skills, mainly learning and innovation skills due to the active participation of the pre-service teachers.

Keywords: Pre-service teacher professional development, 21st century learning and Innovation Skills, 4Cs

1. Introduction

Education in the 21st century places much more emphasis on gaining the necessary skills to learn and sustain learning. This requires policymakers to develop education systems based on not to 'fill-up' students with particular kinds of existing knowledge, but to increase students' ability to learn by enabling them to gain such skills as critical and creative thinking, collaborate and communicate well with others (4Cs). The changes have also been felt in teaching and teacher education, and teachers are expected to be problem solvers and capable of recognizing and weighing diverse perspectives (Sprott, 2019). Many countries have reformed their education system and reconstructed their curriculum to change teachers' traditional pedagogic practices to those required for teaching and learning in the 21st century. Reform efforts in many instances focus on teaching, teacher preparation and teacher training since teachers' creativity for innovative pedagogical practice has become one of the teacher's fundamental competences. Teachers need to be experts in professional problem-solving, who are highly informed about such matters as subject knowledge and pedagogical knowledge (Ball et al., 2008).

It has become inevitable that 21st-century learners must be equipped with new knowledge and skills necessary throughout life for successful adaptation to a changing world. These skills are" critical, creative thinking, collaboration and communication skills" and can be accomplished by implementing a framework for curriculum aligned with the needs of

individuals living in a global society. The Partnership for 21st Century Skills (P21) (2008b) plays a vital role in promoting 21st-century competencies. They claim that in order to catch up with rapidly changing world students should have such skills as critical and creative thinking, collaboration and communication. They are often used to pave the way to profound understanding of 21st-century learning and innovation skills (Urbani et al. 2017). However, the implementation of these skills into actual classrooms is not certain due to the complexity of the definitions.

Table 1. *Definitions of 21st-century skills* (Michaels et al., 2015).

Critical Thinking	Critical thinking is the ability to effectively use higher-order thinking skills to plan, teach, and reflect on instructional practice while integrating and applying theories of teaching, learning, and development.
Creativity	Creativity is the ability to develop, choose, and integrate novel, unconventional, and innovative approaches to teaching and learning.
Communication	Communication is the ability to successfully use interpersonal skills and components of literacy (reading, writing, speaking, and listening) to contribute to teaching, learning, and development.
Collaboration	Collaboration is the ability to work productively and equitably while valuing others in diverse educational settings.

These are the skills most often cited when referred to as the 4Cs of 21st-century learning. They have rapidly been recognized as attributes that separate students who are prepared for more and more complex life and work environment in the 21st century, from those who are not. Taking into account the role of these skills in this age, the OECD Education 2030 (OECD, 2018) stakeholders have worked together to translate the transformative competencies and other key concepts into a set of specific constructs (e.g. creativity, critical thinking, responsibility, resilience, collaboration) so that teachers and school leaders can better incorporate them into curricula.

In recent years, a growing number of countries have reconstructed their national education curricula to accommodate 21st-century skills. Not many instructional strategies are explicitly offered teachers to adapt and develop their teaching for these skills though it is often suggested that pedagogical strategies such as collaboration and creativity can be embedded across the curriculum. However, keywords and concepts are often used to emphasize the need to "educate for new industry, commerce, technology and economic structures; the need for new social interaction and communication skills; the need for imagination, creativity and initiative; the need to learn and continue to learn throughout employment; the need to maintain national and cultural values; and the need to operate in an increasingly international and global environment" (Binkley et al. 2012, p. 34). As shown in Table 2, some of the countries have already developed frameworks and have directed their national educational goals or aims to 21st-century learning considering the need for additional resources, training and support to adapt to these new pedagogical approaches.

Table 2. *The most common frameworks for the 21st-century skills/competences*

Framework	Main focus	Countries involved
Partnership for 21st century skills	Identification and definition of 21st-century skills/competences	U.S.A
	Implementation issues	
	Considerations for assessment	
En Gauge	Identification and definition of 21st-century skills/competences	U.S.A
	Implementation issues	
Key competences for lifelong learning. European Reference Framework	Identification and definition of 21st-century skills/competences	European Union member states
New Millennium Learners: DeSeCo	Identification and definition of 21st century skills/competences	OECD countries
National Educational Technology Standards	Identification and definition of ICT competences	USA, Norway, Costa Rica, Malaysia, Japan, Australia, Philippines, Micronesia, Korea, Turkey and more
ICT competency Standards	Identification and definition of ICT competences	United Nations
Assessment and Teaching of 21st century skills	Considerations for assessment	Australia, Finland, Singapore, United States, Costa Rica, Netherlands and Russia

Source: Voogt, J., P., Roblin, P. N. (2012, p. 304). A comparative analysis of international frameworks for 21st-century competences: Implications for national curriculum policies.

Studies have revealed that the sustainability of these skills is questionable since the stakeholders involving policymakers, schools and teachers do not actively participate in an overall debate about these skills (Voogt & Pareja, 2012). The authors suggest the studies which shed light into a deeper understanding of whether or not these frameworks imposed any changes in curriculum policies and educational practices across various countries (p. 305). These are (a) 'Key competences in Europe. Opening doors for lifelong learners across the school curriculum and teacher education' (Gordon et al., 2009); (b) '21st century skills and competences for new millennium learners in OECD countries' (Ananiadou & Claro, 2009) and (c) the Second Information Technology in Education Study (SITES) (Kozma, 2003; Law et al., 2008).

2. Pre-service teacher professional development for the 21st-century skills

Teacher education and professional development (PD) can be defined as two faces on the same coin which means that professional development is a complimentary part of teacher education to ensure teachers are fitting in the targeted skills. Along with core courses in the program, effective professional development enables teacher candidates to improve their knowledge, skills and dispositions. Thus, pre-service teacher professional learning development has become a fundamental issue to support the increasingly complex skills students need to learn in preparation for an unknown future in the 21st century. To face the unknown future, pre-service teachers must not only develop their understanding of how particular approaches are used but they must also be resilient enough to adapt and apply them to different learning and teaching situations.

Educators have been looking into ways which can equip teachers with the necessary skills to help students compete in this global society. What knowledge is of most worth" (Spencer, 1884) for the teachers in the current century has been associated with learning and adapting 21st-century skills. The four most common skills within the scope of this study are creativity and innovation, critical thinking, collaboration, and communication. They are presented as "Meta Knowledge which is about knowledge of the process of working with foundational knowledge including Core content knowledge, ICT knowledge and Cross-disciplinary knowledge" (Kereluik et al 2013, p. 130).

Thus, the 21st century, pre-service teacher education programs should strongly consider 21st-century learning and innovation skills, namely 4Cs, which enable pre-service teachers to achieve basic competencies in their future teaching experience. There has been much effort in the teacher education field to reorient education towards 21st-century skills. However, many of these efforts have tended to engage with in-service teacher education, and they have not succeeded in reorienting initial teacher education or mainstreaming 21st-century skills across pre-service teacher education programmes.

3. Context of the Study

Turkey has been reconstructing the National Education Curriculum to improve teacher education. One of the largest projects of teacher education was developed with the collaboration of Council of Higher Education CoHE and Ministry of National Education MoNE and the Project was funded by the World Bank between 1994-1999 aimed to fill the theory-practice gap placing more emphasis on teaching methods. The reform movements planned and governed by (MoNE) in collaboration with (CoHE) in 1998, 2005 and 2017 pave ways for the profound changes in pre-service teacher education programs in Turkey. CoHE set the four quality standards which pre-service teachers must develop throughout their education: Content and pedagogic knowledge; Planning, teaching, classroom management and communication; Monitoring, assessment and reporting as well as such lifelong professional requirements as reflectivity, flexibility, objectivity.

Revising the previous standards, the MoNE introduced and implemented, the Teacher Generic Competencies in 2005, which met both the international expectations and provided a guideline for teachers in their subject area teaching. They consisted of six main areas of competency which must be developed by all teachers regardless of their department and 31 sub-competencies and 233 performance indicators. The six main generic competencies are Personal and Professional Values-Professional Development, Knowing the Student, Learning and Teaching Process, Monitoring and Evaluation of Learning and Development, School-Family and Society Relationships, and Knowledge of Curriculum. With the latest reconstruction, MoNE introduced professional knowledge and professional skills for all

content area teacher competencies. There have been a great number of studies on teacher competences with respect to studies in education, development of teacher education, and language teacher education in particular (Atmaca, 2017; Kök, Çiftci & Ayık, 2011; Kızılaslan, 2011; Seferoglu, 2007).

The current English language teacher education program is a restructured model of the previous ones. The instructional structures were grounded in an eclectic mix of instructional strategies so that learners could learn English as a medium of communication, rather than a school subject. The concepts related to 21st-century learning in the curriculum are "Critical thinking, Entrepreneurship, Problem-solving, Communication, Collaboration, Decision making, Innovative thinking, Doing Research, ICT" yet there are no assessment policies or teacher training programs specifically targeted to these skills (ELT Curriculum, 2017).

We designed a professional development course which aimed to help pre-service teachers. Reeves (2004) suggests that teachers transform educational accountability from "a destructive and unedifying force to a constructive and transformative force in education." (p. 6). Thus, we aimed to develop a comprehensible PD framework to provide pre-service teachers a context so that they could become aware of 4Cs, examine the logic behind them and integrate them into their classroom practices in the school-based practicum and the on-campus coursework during the 2017-2018 academic years. On-campus coursework activities were mainly on the sustainable theoretical background in learning and practicing the 4Cs. The extended content of practicum provided a variety of hands-on experiences where pre-service teachers can experience and apply the 4Cs into their classroom practices.

Course activities involved such approaches as inquiry-based, reflective learning, collaborative learning approaches to make them aware of the 21st-century learning and skills that should map out their future, lifelong teaching career. Richards (2015) points out that PD is "maintaining the interest, creativity, and enthusiasm of teachers in their profession" (p. 695).

We established enduring objectives to be able to develop a framework whereby pre-service teachers will be able to:

•raise their awareness of 21st-century learning and skills to enhance teaching and learning.

•to become aware of the role of 21st-century learning and skills on personal/professional productivity, and communication.

•combine pedagogical principles with the 4Cs to improve the learning experience for their students.

•develop a foundation to support the development of 4Cs skills to satisfy the requirements of society and life.

•to develop a set of instructional strategies that enables them to develop learning environments and experiences that support practicing the 4Cs for the diverse needs of students.

•to plan and design, and evaluate the lesson plans including the integration of the 4Cs

•to reflect on their teaching practices, and to share ideas, problem-solve, and build commitment to further use of the 4Cs with their peers.

•to develop assessment techniques (formative and summative) to gauge student understanding of 4Cs skills.

4. Methodology

A three-phased- sequential mixed methods action research study design was utilized in this study. The methods were integrated by first taking the evidence derived from quantitative data, secondly obtaining the reflections and actions of focus group and lastly peer observations of teaching practicum. The method helped the researcher develop the framework within pre-service teacher education context cycles of observations, interviews, reflection, planning and action. The quantitative data collected from 124 ELT pre-service teachers' shed light into the development of the framework (Creswell & Plano Clark, 2011).

The qualitative data provided the pre-service teachers' perceptions on 4Cs. The focus group with nine participants involved in the development of the framework. Interview questions and working materials used in each session were based on the development process of the framework and the feedback given at the previous meeting. The themes and how they were designed related to pre-service teacher professional development d be designed were developed in collaboration with the participants and documented during the group interview sessions.

4.1. The Participants

The participants were pre-service English language teachers from the Faculty of Education of a state university in Turkey. A total of 124 participated in the study for the needs analysis, 27 (21.77%) were male and 97 (78.23%) were female. The ages of the participants ranged between 22-24. Following the needs analysis study, nine pre-service teachers participated in the focus group. In line with previous research for pre-service teachers, females were overrepresented.

4.2. Data Collection and Analysis

Data were collected using a questionnaire including open-ended and closed-ended questions developed by reviewing published literature. With 11 closed-ended questions, the participants were asked to choose their preferences on a three-point Likert scale (Agree, Neither Agree or Disagree and Disagree) and 5 open-ended questions aimed to find out their ideas on the 4Cs. Borg (2006a) regards questionnaires and interviews among the most common methods for eliciting teachers' beliefs and attitudes. The questionnaire data provided a descriptive overview of the pre-service teachers' preferences and experiences with 21_{st}-century skills, which served a basis for policy and intervention of the 4Cs. The open-ended questions were used to collect information about their thoughts, beliefs and feelings about 4Cs. In addition, semi-structured interviews, observations, collection of lesson plans and written reflections were also conducted during the framework development process.

The quantitative data were analysed using SPSS 22,0 for the frequencies and percentages of the responses. The quantitative data analysis served as a needs analysis. All the interviews were videotaped and transcribed verbatim for qualitative analysis. Interview transcripts were first openly coded to identify relevant codes. Content analysis was used for the verbatim responses given to open-ended and interview questions. The qualitative codes and quotations were used to develop the framework.

4.2.1. Development of the Professional Development Framework for the 4Cs

The purpose of the framework was to serve as a guide for the systemic integration of the 4Cs into the curriculum (Table 3). It inspires creative problem-solving for the teacher candidate and develops effective curriculum and instructional methods that support intervention as well as enrichment opportunities for all students. It is a learner-centered framework based upon constructivist-developmental theories of cognitive development which asserts that teacher go through specific developmental stages. The developmental stages were

therefore grounded on the models of teacher education suggested by Michaels et al (2015) and Crandall & Miller (2014). The former consists of three phases: (a) personal development (pre-servicee teachers' capacity to understand and apply these skills in multiple contexts, not limited to educational settings), (b) applied development (continued building of individual capacity as preservice teachers, while facilitating the skill development within their students during supervised teaching fieldwork), and (c) PD (continued development of these skills with students, colleagues, parents, and administrators as in-service teachers) (as cited in Urbani et al, 2017, p. 29). The latter presents the five characteristics of effective teacher PD as stated by Crandall & Miller (2014, p. 632). The authors indicate that effective teacher PD "involves learning opportunities over an extended period of time; engages teachers in deepening and extending skills; challenges teachers' assumptions about learning; involves teachers in talking with one another; has administrative support."

The strategies in the framework were divided into 12 weeks, which aimed to provide pre-service teachers with the co-learning process to blend theory and practice: (1) needs analysis; (2) raising awareness on the 4Cs (3) expand knowledge of the 4Cs; (4) expand teaching skills of the 4Cs; (5) review and reflect on teaching; (6) get feedback from experts; (7) observe best practices; (8) collaborate with other teachers; (9) arrange for peer observation; (10) document the teaching; (11) develop assessment tools; (12) plan future experiences with the 4Cs. It is important that the teacher educator act as a facilitator coaching pre-service teachers to make decisions about their own PD (Richards, 2015). The centre of the framework was giving critical feedback on lesson plans observing and coaching them to improve their pedagogic practice on the 4Cs.

The purpose of the developmental stages was to engage pre-service teachers in learning experiences designed to expand their understanding of the 4Cs, pedagogical tools, and assessment necessary to successfully teach the integration of these skills into their actual teaching. The activities consisted of lectures, learning activities, developing/refining lesson plans, teaching experiences, reflections, and discussions. They, then, engaged in learning activities that were designed for them to apply their understanding of the 4Cs to authentic tasks (Collins, 2006).

A wide range of instruments was used to assess the pre-service teachers' performances during their practicum. The instruments are open-ended questions, performance assessment tasks, interviews, peer evaluation rubrics, and observation checklists:

Self-Evaluation: Pre-service teachers were asked to reflect on their progress and their strengths and weaknesses in embedding the 4Cs into their teaching.

Open-ended questions: Pre-service teachers were asked to write their perceptions on 21st-century learning and the 4Cs.

Performance Assessments: Performance assessments were administered when they were asked to develop lesson plans and to respond to a teaching scenario that involves the implementation of 4Cs skills.

S*emi-structured interviews:* Pre-service teachers were interviewed about the advantages/disadvantages of the tasks they were undertaking and the PD events they attended.

Observations: They were conducted to directly observe pre-service teachers' performance of using the 4Cs at a given time point and to track the development of them over time. They were conducted both in classrooms and during the sessions.

Table 3. A 12-Week Professional Development Framework for 4Cs

Week (W)	Procedures	Instruments and Tools Used
W1	Assessing pre-service teachers' current understanding and comfort with 4Cs.	Questionnaire with close- and open-ended questions
W1	Introductory meeting, explanation on the planned Research and the Presentation of concepts of 4Cs (Concept Training)	Lecture supported with Multimedia
W2	Class discussion of 4Cs	Observation
W2	Individual interviews on 4Cs	Semi-structured interviews
W3	Readings on 4Cs Inquiry based learning	Informal interviews
	Focus group discussions on the 4Cs presented in the first week and the interview questions. Development is more effective if the participants having similar aims to participate collectively	Observation
W3	Analyzing Progress in order to identify growth and pinpoint where additional development and training will be needed. Providing good examples of the integration frameworks of the 4Cs	Open-Ended Questions
W4	Development Projects: Developing Lesson plans for the application of the 4Cs. Self-directed, inquiry-based learning.	Checklist
W5	Feedback on Lesson Plans: Feedback for individual as well as for program	Semi-structured interviews
W6	Free Week They need time to develop, absorb, discuss, and practice new knowledge	--------
W7	Macro Teaching I	Observation
W7	Feedback on Macro teaching	Checklist, peer evaluation

W8	Revising Lesson Plans	Lesson plans Observation forms of macro teachings
W8	Teaching practice I	Classroom observation: Mandatory for pre-service teachers undergoing the scientific-pedagogical evaluation.
W9	Monitoring: technical and pedagogical support in many different ways. Supporting the development of some activities in lesson plans due to the doubts and difficulties that persisted in exploring and complementing 4Cs features with other tools. Feedback session on teaching practice and focus group discussions to supporting pre-service teachers with all the specific and necessary help for the effective integration of 4Cs	Lesson plans and individual interviews to trigger critical reflection on the implementation process
W9	Monitoring: Feedback on pre-service teachers' impact on student learning. The perceptions of pre-service teachers were important to proceed with adjustments. They were advised to attend a workshop conducted in an international conference (CUELT Conference) which would contribute to their PD development	Semi-structured interviews Self-evaluation of performance and progress
W10	Teaching Practice II	Classroom observation: Mandatory for pre-service teachers undergoing the scientific-pedagogical evaluation.
W10	Appraisal meetings	Classroom observation: Using Rating Scale and Rubric to assess pre-service teachers' skills, knowledge and attitudes towards 4Cs Post-observation meeting: to provide opportunities for reflection and collaboration to promote growth and improvement

W11	Assessment: Formative assessment aimed	Peer evaluation: implemented via the completion of a Rubric which makes explicit the teacher's implementation of 4Cs contribution to the achievement of the objectives, particularly those regarding the improvement of the students learning outcomes
	at obtaining feedback from pre-service teachers and become aware of their needs and expectations	
	at monitoring training progress and verifying that pre-service teachers are in the tendency of using 4Cs.	
W12	Assessment: Feedback collected from pre-service teachers	Semi-structured interview based on four dimensions:
		(1) the relationship between the training process and teaching practices,
		(2) perceptions about the importance of integrating 4Cs in their teaching practices,
		(3) the way 4Cs was integrated in the teaching practices and its implications,
		(4) main constraints/difficulties
		and the positive conditions that facilitated the integration of 4Cs in the teaching practices.
		Periodically obtained from the answers to specific
		questions about the instructional practices of the 4Cs

5. Discussions and Conclusions

The PD framework targets pre-service ELT teachers, but it can also be used by all pre and in-service K12 content area teachers. It was designed as a PD opportunity to enhance teachers' knowledge and skills to integrate the 4Cs into their classroom instruction. The framework has blended a variety of teacher education models as opposed to using a single model such as top-down and bottom-up models (Richards, 2015). It intended to encourage pre-service teachers to be active rather than passive, which enables them to clarify, question, consolidate, and appropriate new knowledge.

In addition, the study aimed at enabling pre-service teachers to use research and theory to understand, improve and implement the 4Cs. A joint intention was to create a framework which could pave the way to PD of pre-service teachers on 21st-century learning and skills. It has similar intentions of the studies combining teacher education with forms of action research. The professional development framework developed in this study is social constructivist in design and includes a combination of theory and practice, hence the framework corroborates that teacher education based upon academic-oriented programs can simultaneously lead to professional practice. The 12 week-framework, though not a magical cure for all 21st-century education, can be a powerful tool supporting the transformation from 20th-century education to a very uncertain 21st century.

Several conclusions can be drawn from the data collected before, during and after the development process of the framework. In the initial stage, almost all of the pre-service teachers indicated that the Ministry of National Education (MoNE) was not doing well in its plans to integrate the 4Cs into curriculum or teaching. However, in the during stage of their practicum, the majority of the pre-service teachers commonly talked about how they changed their views and increased their interest on 4Cs;

"I thought 21st-century learning is integrating technology into teaching, but it is more than this"

"In order to teach well, we should learn the 4Cs well and how to integrate them into our teaching."

"I realized that the 4Cs plays a vital role in perceiving the world as a teacher I will change my students' vision."

"I read more about 21st century skills, 4Cs in particular."

The data obtained after the final stage of the framework development revealed that the PD framework gave a positive impact for the PD though some aspects in the program need to be improved in the future. The majority of participants viewed that weekly assignments such as readings on 4Cs, developing lesson plans, feedback on these assignments and field teaching practice to practice the 4Cs were helpful in preparing them to improve their instructional method of teaching.

"The processes in the framework helped me to become more aware of what stages I should go through to integrate for 4Cs in my teaching.

"The activities in the framework raised my awareness on becoming an innovative teacher."

"It has become a must for me to integrate the 4Cs into my teaching."

"I am now more determined, self-confident, and innovative to develop my lesson plan for 4Cs."

The most important weakness in the development stages of the framework stated by the participants is the supervision of teaching experience since they were given supervision only two times during their practicum. Darling-Hammond (2006) suggests that pre-service teachers be guided so that they can integrate their knowledge and skills into various educational contexts to provide their students with learning opportunities.

This study was carried out with one cohort of pre-service teachers within a single educational setting; hence the findings and the framework development process should be interpreted cautiously. We can interpret that the better prepared pre-service teachers during their university education and teacher practice on 21st-century learning, the more likely they will integrate them into their instruction. The challenge is the prerequisites of 21st-century

education, reviewing and revising curriculum, and ensuring teaching candidates are prepared to teach the 4Cs. Pre-service teachers were holding the idea that the National Education Curriculum did not go beyond providing content knowledge and preparing teachers to integrate the 4Cs into their content area. They also did not believe that the National Education Curriculum did not align instruction standards with those that embody 21st learning. However, professional development activities must be challenging to prepare pre-service teachers to adapt to the uncertain future since pre-service teachers cannot develop 4Cs if the education is merely grounded on their existing knowledge and skills. Therefore, it is extremely important that they develop such professional abilities as to become aware of and implement the 4Cs in their subject teaching. Barnett (2004) states that "there is always an epistemological gap between what is known and the exigencies of the moment… there can be no assurance that skills-even generic skills-appropriate to situations of the past or even the present will help one to engage with the future world in a meaningful way" (p. 259).

In addition, the current pre-service teachers must develop their own 4Cs in order to transfer these skills to their student to meet the needs of the 21 requirements. Urbani et al. (2017) suggest that the process of 4Cs development can be achieved if it is grounded on Collins' cognitive apprenticeship theory (2006) since it "focuses on teaching methods that include modeling, coaching, scaffolding, articulation, reflection, and exploration and is therefore applicable to teacher education" (p. 47). Professional development of pre-service teachers should be an education for an unknown future; hence we cannot depend on any existing knowledge and skills for developing student teachers and learners for it. Thus, 21st-century teacher education curricula must include future challenges and uncertainty that student teachers can face. Dede (2007) claims "guided inquiry, collaborative learning, mentoring, and apprenticeships to be more effective pedagogical strategies" (p. 17).

Today's classrooms are equipped with smart boards and Web 2.0 tools have become prominent since some are used freely to download and upload information. The Ministry of National Education in Turkey weighed in on the importance of including technology within the curriculum to meet the needs of 21st-century learners. In the ELT curriculum, the course, Educational Technologies and Materials Development, is tailored to equip student teachers with adequate technology literacy and classroom applications. However, equipping the classrooms with technology does not necessarily mean that teachers can use them effectively. Sutton (2011) suggests that "preservice teacher's technology training experience should remain useful and relevant once they are placed in their own classroom" (p. 39).

Follow-up action research studies with the preservice teachers in this study who will be teaching at different levels would help them to increase their knowledge on the 4Cs and integrate them into their instruction. This follow-up study could also examine the extent to which teachers and their students are meeting current expectations for 21st-century learning. In addition, further contextualized, longitudinal research should be carried out to understand whether the framework could be implemented in analogous pre-service teacher education settings around the world. This research should also investigate the views of university supervisors, mentor teachers at schools and the school students in different levels since the data obtained from these stakeholders can play a role in reviewing and reconstructing the framework.

Acknowledgement

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Appendix 1

Key questions for semi-structured interviews

(1) How important do you think the 4Cs in education?
(2) What supports do teachers need to ingrate the 4Cs into language teaching?
(3) What is the difference between working in cooperation and in collaboration?
(4) Who is an effective communicator?
(5) What do you understand from Professional Development?
(6) What worked well and what did not work well in your lesson plan?
(7) What do you plan to change in your next lesson plan and classrooms teaching?
(8) How did you complete your assignments in this course?
(9) Have you had any difficulties when completing the assignments?
(10) How did you overcome these difficulties?

THE OPINIONS AND SUGGESTIONS OF THE INSTRUCTORS REGARDING THE PROBLEMS FACED DURING UNDERGRADUATE INDIVIDUAL VOICE EDUCATION COURSES

Research Article

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THE OPINIONS AND SUGGESTIONS OF THE INSTRUCTORS REGARDING THE PROBLEMS FACED DURING UNDERGRADUATE INDIVIDUAL VOICE EDUCATION COURSES

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Abstract

In Turkey, Music Education Sections (MES) under the Fine Arts Education Departments of the Universities are one of the leading institutions that provide higher professional music education. Individual Voice Education (IVE) course, which is included in the undergraduate curriculum of these institutions, has a very important place and function in music teacher education. The aim of this research is to discover and examine the problems faced by those IVE course instructors working at higher education institutions providing professional music education. The research group was formed from 10 instructors randomly selected from the full-time staff that teaches IVE courses at the MES of the Turkish Universities. A personal information questionnaire and an interview form prepared by the researcher was applied to the participants. In the interview form, 5 open-ended questions were asked to identify the opinions and suggestions of the instructors regarding the problems they face during the IVE courses. The obtained data were analyzed by descriptive analysis and processed according to the predetermined thematic framework. Based on the findings, the problems that the individual voice instructors face during the courses were identified and suggestions regarding these problems were presented.

Keywords: music education, voice training, individual voice education, instructor.

1. Introduction

Music education is the process of creating certain musical behaviours for an individual, or creating certain musical changes in his/her musical behaviours, intentionally through his/her own life (Uçan, 1994, p. 31). Music education is divided into various sections and branches in terms of basic behaviour and content covered, tools and equipment used, methods and techniques adopted, environment and level of performance, and the stage and duration estimated. However, whatever the section/branch, level, duration, content, method and equipment is, the music education is organized and conducted for three main purposes as general, amateur and professional (Uçan, 1994, p. 25, 31). Professional music education aims to provide the musical behaviours and experience required by the music section, branch, work or profession towards people, who choose the field, branch or section of music as profession related to that section or branch or wants or shows tendency to choose it as a profession, a with a certain level of talent for music (Uçan, 1994, p. 27).

In Turkey, professional music education at the undergraduate level is given at faculties of education, departments of fine arts, the departments of music teaching, and at the conservatories of private, foundation and/or state universities. Among these institutions, the department of fine arts education (DFAE) affiliated to faculty of education and the department of music education (DME) stand out with their task of training and raising music teachers. In

music teacher training, what is essential is not only the satisfaction of an individual in line with his/her interest, desire, skills and talent but beyond that, the ability of that individual to get prepared, improve, specialize, develop and mature in the form, scope and level required by that profession. For this purpose, the Music Education Undergraduate Program (MEUP) is programmed in a way to cover the field information, general knowledge and professional knowledge together (Uçan, 1994, p. 28).

Çevik (2006, p. 642) describes the four main aspects of MEUP as follows:

"…*Field of Music Knowledge and Skills* that shapes the musical behaviours of an individual; *Field of Music Education* that provides the teacher candidate with the ability to use effective learning-teaching strategies to transfer his/her knowledge of music field to the students, to plan, process and conduct the education process within the classroom environment; *Field of Teaching* that develops the ability to recognize the school and classroom environment and to communicate with the school administrators, colleagues, students' parents and the community as well as the awareness of responsibility with school supported experiences; and the *Field of General Knowledge and Culture* that improves the competences of teacher candidates in language and general culture…"

The field of voice education, which is under the Field of Music Knowledge and Skills, provides the individual with the ability to use his/her voice for speaking and singing purposes, ensures learning experiences related to singing (making music), and has a great importance and function in music teacher training (Çevik, 2006, p. 647). This is because the main instrument of a music trainee in music education is his/her voice that he/she is to use and benefit in both educational and artistic means at any class and level. Teachers, who are to give music education at schools, need to have accurate and sufficient knowledge and skills about voice education (Öztürk, 2003, p. 81).

Through voice education, which he/she receives throughout his/her education, a music teacher candidate shall teach his/her students how to sing accurately, healthily and effectively (Tonya, 2008, p. 25). Such that, as Torey (2002) also stated, since music teachers in Turkey are to work at pre-schools, secondary schools, high schools and vocational schools, they should have a good knowledge of vocal characteristics and voice development stages of each age group, should carry out voice education using appropriate and accurate methods and create accurate repertoire. The main purpose of voice education in music teacher training is both to provide the music teacher candidate with behaviours related to proper, good and effective use and protection of his/her voice, and to teach voice training methods for their future students. In this respect, the voice education received by music teachers within the scope of their undergraduate education is of great importance.

In the Department of Music Education of the Faculties of Education, voice education is conducted both individually and collectively. The aim of the classes is to provide the music teacher candidates with the skills related to most accurate, beautiful and effective ways of using their voice, which is the most basic and natural instrument of music teacher candidates, in both speaking and singing as well as teaching them how to protect their vocal health and to improve their voice in its natural state (Ekici, 2008, p. 67).

In the Music Education Undergraduate Program (MEUP) of the Faculty of Education prepared by the Council of Higher Education (YOK), the music classes to be given between the 1st and 8th semesters are as follows: Individual Instrument (I-II-III-IV- V-VI-VII) (throughout the 1st to 7th semesters), Individual Instrument and Instruction (in the 8th semester), Individual Voice Education (I-II-III-IV) (from 1st to 7th semesters), Choir (I-II-III-IV-V-VI)

(throughout the 2nd to 7th semester), Choir and Conducting (in the 8th semester) and Chamber Music (I-II-III) (from 5th to 7th semesters).

Individual Voice Education (IVE) forms the conceptual framework of this study. For this reason, definitions and descriptions included in the study are limited to voice education and IVE. Accordingly, no information about the voice, the physical characteristics of voice, the formation of human voice, the anatomical features and functions of the organs forming voice is included in the study.

According to Toreyin, who defines voice education as "a planned and programmed interaction process carried out in line with the planned targets through pre-determined principles and methods and which ensures behaviours necessary to enable the individuals to use their voice according to their anatomical and physiological structure while speaking and singing", this education covers four sub-voice training steps including singing, advance voice training, choir and speech training according to their level (1998, p. 82, 83).

On the other hand, Çevik defines "voice education" as the process of providing the individuals with the necessary behaviours to enable them to use their voice in correct, beautiful and effective ways with a certain technical and musical sensitivity in accordance with the artistic and educational objectives in line with the characteristics of anatomical and physiological structure. Çevik, expressing that this process can be organized both individually and collectively, divides voice education into three main types as individual, ensembles (chamber music) and collective voice education (choir voice training) (Çevik, 2013, p. 53-60). In addition, it divides IVE into two groups as fundamental voice training and advanced voice training, and defines these subtypes as follows:

> "*Fundamental voice education* is the process of providing basic behaviours for the correct use of speech and singing voice at all ages and qualities, primarily for educational purposes. Since it can be programmed individually, it can also be organized for communities. The planning and implementation process of the training includes the stages of listing and evaluating the behaviours intended to be developed in students in advance, regulating the learning experiences in accordance with their age and voice characteristics, and obtaining and assessing the necessary data to determine whether these regulations improve the intended behaviour in students or not."

The individual voice education course that constitutes the subject of this research is a "fundamental voice education" as Çevik mentioned above that all the other students whose major instrument is different than singing should take for two years in the music teacher education institutions (Çevik, 2006, p. 656). However, with the decision of the Turkish Executive Council of Higher Education (YÖK), 25 graduate programs, including the MEUC, have been updated in 2018. In the updated program the duration of IVE courses which were programmed for four semesters/2 years before (at the time this research was done) were cut down covering only 2 semesters/one year. And this new scheme is implemented from this academic year (2018-2019).

1.1. Related Research

In the literature, there were no foreign publications similar to this research. In several studies conducted in the field of music educator training and higher music education research presented around the subjects such as general problems in training music teachers; undergraduate music curriculums (Hourigan, R. M., & Scheib, J. W., 2009; Schmidt, C. P., 1989; Güsewell et al., 2016); the problems encountered in the education of different instruments or the views of student-teachers and assessments of the current situation in

different countries (Ogawa, M., 2004; Thorgersen, Johansen & Juntunen, 2015). In a recent study by Thorgersen, Johansen and Juntunen (2015) the opinions of 12 music teacher educators who teach pedagogical courses called instrumental pedagogy and classroom music pedagogy in three music academies in Finland, Norway and Sweden were investigated by interviews. An opinion presented in the findings can be considered as a common recommendation with this study states that clear programme visions should be formulated in music teacher education institutions.

In the study presented by Toreyin (2001), she included the problems encountered during the voice training courses at DME and the effects of these problems on music teaching profession. In the study, the problems were grouped under three headings and interpreted. Accordingly, under the title of *the problems arising from the YOK curriculum*, it is stated that the total duration of the major field course in voice training within MEUP is not adequate and appropriate in terms of annual and weekly course hours; and that the fact that the definitions, objectives and contents related to the field course are not specified clearly causes different results to be obtained among the instructors and institutions applying the same curriculum.

In the research, under the title of *the problems arising from the quantity and quality of the instructors*, it is stated that the instructors do not have a common and definite opinion on the objectives, method and contents of the major field course in voice education applied to train music teachers, and that there are significant problems caused by instructor shortage. The vocal problems of the students due to misuse of their voice during the secondary school years are also expressed as *problems arising from the students' level of attendance*. As a consequence, the problems encountered during major field courses in voice education are stated to have negative effects on music teaching profession. For this reason, first of all, some of the uncertainties in the major field courses should be determined by voice education instructors, and a curriculum covering common course definitions, objectives, principles, teaching methods and assessment methods is suggested to be created.

Ekici (2008) conducted research on the development of the IVE course in the music teaching the undergraduate program. In the research, some 4th-grade students studying at the Departments of Music Education of four universities in Turkey, graduate and working music teachers and voice education instructors were interviewed. With the interview forms prepared for each group, the participants were asked questions in the categories defined as "the Duration of Course, Problems with the Use of Voice, Learning-Teaching Process, Evaluation, Common Curriculum, Situations and Problems Regarding the Professional Life, and Recommendations."

According to the findings obtained as a result of the interviews, all of the students and the instructors stated that they found the time allocated to the IVE course as insufficient and that it was necessary to conduct the course with the accompaniment of a piano. Instructors stated that they mostly experienced problems in teaching breathing with the support of diaphragm, and students had problems with voice techniques. In addition, the music teachers presented some opinions on placing more importance to theory and practice (especially exercises); providing information about vocal health and protection through voice education during childhood and adolescence; practicing school songs and anthems as well as classical voice education repertoire; and concentrating on Turkish music and practices for professional life. According to the findings regarding curriculum development, it was concluded that the objectives and target behaviours of the IVE course were not specific. Therefore, cognitive, affective and kinaesthetic field objectives were determined for the proposed curriculum and a Table of Specifications was prepared. Moreover, content was created and edited by specifying

the subjects of the IVE course in such a way to cover a four-semester education process, followed by a sample course model and an assessment form being presented.

In the research conducted by Kaya (2006) in order to evaluate the positive and negative views of the 1st grade students from Inonu University, Faculty of Education, Department of Music Teacher Program on the IVE course, it was determined that the students had some problems arising from the inability to use their voice correctly. The students participating in the research stated that it was necessary to be given more information on the use of voice in technical terms, to be corrected by their instructors if they were to make any mistakes throughout the course, to be motivated by their instructors more, to carry out a repertoire work in accordance with their own voice intervals and to perform their works accompanied with the piano. They also stated that it was necessary to have more resources, that one hour a week was not sufficient for this course and that the instructors should conduct one-to-one classes with each student.

Tonya (2008) conducted a study in order to determine the problems faced by the students studying and the IVE course instructors working at the DME in the Aegean and Marmara regions, and to examine the relationships between these problems and their personal characteristics. When the results obtained from the questionnaires applied to the students and teachers were examined, it was seen that the respondents reported some common problems in some course-related matters. Both students and instructors reported that they found the classrooms to be numerically and physically insufficient, that the duration of the course was not sufficient in terms of the number of semesters and weekly course hours, that the course grade distribution was not fair due to lack of common assessment criteria, that they found the number of accompanists insufficient, and thus the interest in the course was low because of that (singing without accompanist). In addition to this, the students stated that they had difficulty in singing early in the morning and in foreign languages, while the instructors stated that they had difficulties in working with students who had poor vocal health, had not completed their mutation period and had false pre-learning and prejudice.

Yiğit (2016) conducted research based on the views of instructors in order to identify the problems encountered during the implementation of the IVE course curriculum in the music departments of Fine Arts High Schools. According to the findings obtained, IVE instructors found the duration of the course insufficient in terms of practicing period and weekly hours; they had a great deal of challenges in providing skills specific to the field of IVE during the mutation period; 44.4% of schools had insufficient physical conditions to run IVE courses; and they stated that the course was mostly conducted with 3 or more students. In the research, it was found that the most problems were caused primarily by the duration of the course, followed by problems related to mutation, resources, physical conditions, textbooks and the way of running the course.

In the research carried out by Akgün (2005) in order to determine the problems arising from the undergraduate education of music teachers, 135 music teachers were asked an open-ended question of "what should be done to provide more efficiency for the major field courses in voice education at the schools where the music teachers work." According to the findings obtained, 36.30% of the respondents stated that the voice education courses should be increased to at least two hours a week, while 20.74% argued that the voice education courses should not be limited to one year and that they should cover a four-year period and be compulsory. 42.22% of the respondents argued that the repertoire used in voice education courses should be re-arranged to be used in the music teaching profession, while 28.89% of them stated that Turkish songs, especially school songs, folk songs and popular pieces should be included in the repertoire. 25.18% of the respondents stated that the choir courses should be given for the

period of four-year undergraduate education, and 46.67% of them found it necessary to focus on folk songs, school songs and popular choral works by reviewing the repertoire to be created for choirs.

Aytekin (2006), in his master's thesis titled "Monitoring of the Individual Voice Education Process through Acoustical Voice Parameters in Music Teaching Programs" compared the vocal performances of the 1st grade students of Gazi University Department of Music Teaching before the voice education process and after 7 months of voice education. As a result of the measurements made using an analysis program in computer environment at the related unit of Gazi University Faculty of Medicine, it was determined that IVE taken during a full academic year provided positive improvements in the voices of students.

Şakalar (2015) conducted a research with the purpose of identifying the difficulties faced by graduate students of advance voice training in the state conservatory in Turkey, and offering solutions in that matter. According to the results obtained from the research questions, to which most of the students gave positive answers, half of the students stated that they were hesitant about the adequacy of the Turkish songs, which were used as a repertoire in the advance voice training courses, but the majority (90.4%) stated that they were pleased to sing in foreign language. Most of the students noted that the time allocated to the advance voice training courses was not sufficient, that they were hesitant about having decent knowledge of voice anatomy, and that the use of accompaniment instruments in advance voice training courses had a positive impact on their interest in the course.

In a master thesis, where Özel (2012) investigated the importance of piano accompaniment in IVE, the number of instructors accompanying in the higher music education institutions and the amount of weekly course hours for the accompaniment courses were found to be insufficient in terms of efficiency. Özel (2012) also suggested that the accompaniment courses were not efficient enough due to lack of students' interest and insufficient number of practice rooms and pianos, and that the students experienced some problems in singing with an accompanist. As a result of these determinations, the pianists were suggested to develop and train themselves in accompanying with different musical instruments and/or singing in addition to the solo works throughout their music education process.

As is seen, in various researches conducted between 2001 and 2016 with the IVE instructors and students, similar problems encountered during the IVE courses and similar opinions and suggestions on that matter were revealed. In this study, it was considered to be appropriate to consult the instructors' opinions on the implementation, curriculum and requirements of the IVE course based on practice. To this end, issues related to many factors affecting the teaching/learning process (teacher/student qualification, curriculum, teaching period, learning and teaching strategies, methods and techniques, physical structure of learning environment, equipment, teaching materials, etc.) were tried to be presented in this research by referring to the opinions of field specialists.

This research is of importance in the sense that it determines the problems, which are or may be encountered by the instructors, and offers solution proposals to be used for these problems. The question of "What are the problems faced by the voice education instructors during the individual voice education courses?" is the main problem sentence to be answered in this research. Based on this main problem, answers were also sought for the following sub-problems and the solution proposals were offered by assessing the instructors' answers.

1. What are the problems caused by the competencies of instructors in IVE courses?
2. What are the problems caused by personal characteristics of the students in IVE courses?
3. What are the problems caused by the classrooms and equipments in IVE courses?
4. What are the problems caused by the curriculum in IVE courses?

2. Method

This research is qualitative research. *"Qualitative research is a research where qualitative data collection methods such as observation, interview and document analysis are used and which follows a qualitative process for presenting the perceptions and events within the natural environment in a realistic and holistic way."* (Yıldırım and Şimsek, 2004, p. 35) In this study, data were collected by using an interview technique and were processed descriptively through content analysis. *"The main purpose of using interview technique is usually not to test a hypothesis, but on the contrary to understand the experiences of other people and how they make sense of these experiences."* (Türnüklü, 2000, p. 544)

The population of the research consists of the voice instructors working full time at the DFAE and DME of the faculties of education in universities, during 2016-2017 academic year. In order to form the research group, 15 instructors were randomly selected among this population. However, since 5 instructors selected could not participate in the interviews, the study was conducted with ten instructors working in different regions of the country. Demographic data of the research group were collected solely for the purpose of providing personal information about the participants and were not taken into consideration. Accordingly, the data collected about the instructors, whose opinions are consulted in the research, are given in the table below.

Table 1. *Data Obtained from the Personal Information Questionnaire*

No	Gender	Age	Graduate Degree	Assignment	Title	Seniority	Main Banch	Voice education field courses given other than IVE
1	F	41	Phd.	Faculty Member	Assoc. Prof. Dr.	18	Vocal	Advanced Voice Edu., Group Singing.
2	F	45	Master	Instructor	-	23	Vocal	Advanced Voice Edu., Group Singing., Choir.
3	F	44	Phd.	Instructor	Dr.	8	Vocal	Advanced Voice Edu., Group Singing., Choir.
4	F	60	Phd.	Faculty Member	Prof. Dr.	27	Vocal	Advanced Voice Edu., Group Singing., Choir.
5	M	47	Phd.	Faculty Member	Assist. Prof. Dr.	24	Vocal	Advanced Voice Edu., Choir.
6	F	45	Phd.	Instructor	Dr.	23	Vocal	Advanced Voice Edu., Group Singing., Choir.
7	M	45	Phd.	Faculty Member	Assist. Prof. Dr.	20	Vocal	Advanced Voice Edu., Group Singing., Choir.
8	F	38	Bachelor's	Instructor	-	17	Vocal	Advanced Voice Edu., Choir.
9	F	42	Phd.	Instructor	Dr.	17	Vocal	Advenced Voice Edu., Choir.
10	F	45	Master	Instructor	-	17	Violin	Adven. Voice Edu., Choir Edu., Choir Conducting

With the purpose of establishing the theoretical dimension of the research and preparing the questions to be addressed to the participants, first of all, the Turkish and foreign (English) literature related to the subject were reviewed and the opinions of the field specialists were utilized to a great extent. The data were collected by applying an interview form structured with a *personal information questionnaire* prepared by the researcher. Since it was aimed to collect only demographic information about the participants using the personal information questionnaire, the data obtained from this questionnaire were not taken into consideration. The five open-ended questions included in the interview form were prepared to determine the problems faced by the instructors during the IVE courses and the solution proposals offered by them regarding these problems. Also, these questions were organized by consulting with the specialists' opinions. In addition, themes related to the questions were created and outlined, and the data were aimed to be collected regularly. The data collected through having a text chat with the participants are presented in the findings section, rankly and under the related headings. The opinions and suggestions of the participants are given without any changes, but their names are not disclosed. Instead, each instructor is assigned a number and it is considered appropriate to define the instructors as E (Educator).

3. Findings

Findings related to the sub-problems of the research are included in this section. The themes regarding each sub-problem are examined under the headings and examples from the views of the instructors on the themes are presented. The opinions are presented directly as stated by the instructor without disclosing their names. Instead of this, the instructors participating in the research are referred to as E1, E2, and E3 etc.

3.1. Opinions on the problems caused by the competencies of the instructors in the IVE courses and the solution of these problems

When the answers given by the instructors to the first question are examined, it is determined that the opinions include the following main themes:

1. Instructor shortage
2. General and specific field competencies of the instructor

1. Instructor Shortage

All of the instructors stated that the number of instructors in the field of IVE was insufficient and that their institutions should recruit more instructors specialized in this field. The instructors noted that due to instructor shortage, that course, which should be conducted with students individually, were conducted with at least two and sometimes three students, and that the course could not be run efficiently neither for students nor instructors.

While E6 and E9 mentioned that instructors, who specialized in different branches, were conducting IVE courses instead of field specialists due to instructor shortage; E2 stated that they experienced a decrease in performance due to the insufficient number of instructors.

E1: *"In order to reduce the fatigue and busyness of the instructors in terms of the efficiency of the courses, some instructors specialized in this field should be recruited."*

E3: *"The instructor shortage is an important problem. I think that especially opera artists, who have strong pedagogical formation, can contribute to the faculties of education."*

E5: *"Due to instructor shortage, I have to teach more than three students in one hour. The only solution to this is to increase the number of instructors."*

E8: *"In my opinion, the biggest problem is the insufficiency of the number of instructors who are to give this course. If the number of instructors increases, the course load will be reduced and more efficient courses will be taught. I believe that by increasing the number of instructors, the course load can be lightened and voice education can be provided at a higher quality. For instance, I have to have a class with at least 2, sometimes 3 students in just one hour, and this is a serious problem for me and my students. We have to race against time for a quality class."*

E9: *"Individual voice education course should be conducted with each student individually for 1 hour per week. However, although each class is carried out with 2 students, our course load is close to 30 hours a week."*

2. General and Specific Field Competencies of the Instructor

E3 assumes that all instructors have general or specific field competencies, but notes that the instructors do not improve themselves and that their expertise is limited to their own experiences, which they gained through master-apprentice relationship, and he/she continues as follows:

E3: *"If the instructor learned through a master-apprentice relationship in his/her own time, he/she is not creative and curious about researching and using new teaching methods, techniques, materials and methods."*

Although not stating it as a problem, E10 recommends instructors to constantly renew the repertoire of works and pieces they use. E5 also mentions that due to instructor shortage and the course load, instructors cannot find enough time to improve themselves, and then he/she makes the following suggestions:

E5: *"I believe that more time can be devoted to individual studies and field-specific works, if the instructor shortage is eliminated. Apart from this, the instructors should go abroad, as much as possible, with the ERASMUS program and closely follow the courses on site."*

As E1 thinks that the instructors have general and specific qualifications in the field, he/she also states that the problems encountered may be caused by the differences in method and application, and suggested as follows:

E1: *"...I can say that each of the instructors differs from each other in terms of teaching methods. Sometimes, this situation can create confusion on students, who have not yet established technical skills and level, and causes them to struggle. In this case, I think an advance voice education council should be established to set a path on what needs to be done."*

In addition to these, E6 and E9 specify that IVE courses should be given by field specialists and they express their opinions as follows:

E6: *"Most importantly, I think that people, who graduate from advance voice education main branch and have a master's and doctoral degree in this field, may have the qualification to conduct IVE courses. The fact that those, who are capable of lecturing in this field (those with qualifications), are not available in the educational institutions due to lack of staff is a very saddening result. I find it very inadequate of people, who specialized in other branches, giving this course."*

E9: *"I see that the IVE course given by the instructors who graduated playing different instruments. In my opinion, they should be definitely the graduates of the advance voice education major branch. When substitute instructors are hired due to the insufficient number of instructors, some problems arise in the learning process and the relations with the students."*

E9 also suggests that the instructors conducting the IVE course should have the ability to use the piano as an accompaniment instrument and states that it will be beneficial for the course, if the accompaniment of songs is also carried out by the instructors.

3.2. Problems caused by personal characteristics of the students in the IVE courses and the views on the solution of these problems

When the instructors' answers to the second question are examined, it is seen that they offer different opinions and suggestions as well as similar ones. The instructors stated that they encountered problems caused by factors such as the physical characteristics of the students' vocal organ, the physical and mental characteristics of the students, the use of language and speech, lifestyles, pre-learning about the use of voice and the singing features affected from the cultural environment. The most prominent theme headings are as follows:

1. Language and Speech Characteristics
2. Life style
3. Pre-learning
4. Pronunciation
5. Physical and Mental Characteristics

1. Language and Speech Characteristics

One of the instructors stated that the orthodontic braces used for dental treatment had a negative impact on teaching/learning:

E3: *"Orthodontic braces are the most disturbing situation for the students. Some difficulties can be observed in articulation and opening their mouths."*

While all of the instructors stated that the speech characteristics of the students coming from different regions affected teaching/learning, E1 and E6 regarded that as a problem:

E1: "Many problems, especially speech disorders (local dialects, etc.) can be considered."

E6: "Accent differences of students coming from the east, in particular, can be challenging. This problem is also observed in students coming from the Thrace region and the Black Sea region."

1. Pre-learning

Most of the instructors noted that their students had inadequate or inaccurate knowledge on the anatomy of the vocal organ and vocal health, and some of them based this upon high school education of the students that they received before undergraduate studies.

E4: *"Our students mostly come with healthy and above-average voice materials. Although there are some of those with vocal health problems, they have little to none "singing" behaviour due to incorrect behaviours built. The number of students, who prefer to sing, is low and they usually prefer playing an instrument. In my opinion, the fact that they do not want or are unable to sing despite their vocal capacities, is a negative consequence of the misconceptions they have gained in using their voices."*

E5: *"I sometimes face problems caused by smoking habit of some students and sometimes problems caused by their habits of straining their voice, which is a habit they gain especially in Fine Arts High Schools. In such cases, I primarily focus on vocal health. I tell them that they should use their voice without straining, and concentrate on the work they need to do regarding this matter."*

E8: *"Since some Fine Arts High Schools do not have voice instructors, the students may be using their voice incorrectly with inaccurate voice techniques. Or sometimes we encounter serious vocal problems. I believe the voice education should be taken seriously especially in Fine Arts High Schools and voice instructors qualified in this field should be recruited."*

1. Pronunciation Characteristics

Three instructors stated that their students faced problems caused by singing in different genres.

E3: *"Other problem is that THM [Turkish Folk Music] and TSM [Turkish Classical Music] courses cause students to use their voices through larynx. This way of singing, which is quite different from the advance singing technique, confuses the students."*

E6: *"For students, who choose instruments such as baglama, oud, qanun etc. as their main branch, it is very difficult to move their voices from larynx and put in the proper position."*

E8: *"In addition, since the majority of students make music outside the school, there are some vocal disorders caused by the long-term use of voice and the environment (caused by the use of cigarettes, alcohol, etc.)."*

IVE instructors, who participated in the research, made the following suggestions to solve the problems arising from the students' language and speaking characteristics, pre-learning and pronunciation characteristics:

E4: *"Students may gain the habit of singing the melodies, which can enable the students to identify natural voices by focusing on mid-tones without guiding them to sing from higher and lower tones in a way to excess their vocal capacities, in a natural position, maybe excessing over speech tone in some areas."*

E5: *"In such cases, I primarily focus on vocal health. I tell them that they should use their voice without straining, and concentrate on the work they need to do regarding this matter. For a long time, I concentrate on the diaphragm control and carry out exercises on voice-producing through blowing. As they gain these abilities, I make them reinforce by practicing some pieces that will not challenge their vocal boundaries."*

E6: "We have to carry out special training with visually impaired students. However, sometimes these students can learn a lot easier."

E7: *"I try to overcome the problems I face according to the characteristics of the individuals. If there is a problem with the vocal organ, in addition to medical help, I try to overcome the problem using exercises."*

In addition to these, E1 proposed the use of visual materials and different resources to thoroughly introduce anatomy in the IVE courses; while E10 stated that he/she emphasized on the importance of health and protection of vocal organs, improvement of healthy life and artist sensitivity; that he/she solved the speech-related problems caused by the previous use of voice, singing techniques and the local speech characteristics of students by supporting them with individual studies and exercises; and that he/she included musical analysis, while performing the exercises and musical pieces.

1. LifeStyle

E5 specified that some of the students face smoking-related problems. The same problem was mentioned by E8 stating that he/she encountered vocal disorders due to this habit.

E9 pointed out that some problems were had with students who did not attend the classes regularly.

1. Physical and Mental Characteristics

Some instructors expressed that the lack of prospective expectations of the students, the idea of failing due to lack of self-confidence and the state of being disabled-led students to be unwilling towards the class. Examples of opinions and suggestions on this theme are as follows:

E1: *"It is very important for a student to know what to expect from a course. This is because his/her love and interest towards the course increases at that proportion. The task of the teacher is to determine what the deficiencies are and to set a path in that direction. The teacher should follow the student, monitor the student's situation, develop a method accordingly and enable the student to adopt this method. The teacher should be patient, establish a good*

dialogue and explain the subjects well. The teacher should solve situations such as the inexperience of young people and them being their own master etc. wisely."

E3:*"I think that instructors should have positive guidance and continuous support for the students with physical and mental distress to prevent them to feel like they are incapable of learning."*

3.3. Problems caused by the classroom and equipment properties in the IVE courses and the views on the solution of these problems

While three out of ten instructors, who were consulted, stated that they did not encounter any problems in the IVE courses due to the classroom and the equipment properties, seven instructors indicated that they experienced some problems, which could be listed under two headings as "classroom properties" and "tool and equipment adequacy".

1. Classroom Properties

Four instructors stated that the classrooms were not suitable for IVE courses in terms of size and acoustics.

E6: *"…The small size of the classrooms we are teaching (to an extent where we can hear the voices from the next rooms) creates problems. At the same time, the students do not feel confident due to acoustic issues."*

E9: *"Unfortunately, our classrooms are not suitable for advance voice trainings. They are small in size and inadequate in terms of sound insulation and acoustics. Making the physical conditions suitable for advance voice training lessons will bring positive results for both students and teachers."*

Despite finding the physical conditions of classrooms suitable for IVE courses, E1 indicates that classrooms are inadequate in terms of acoustics and presents his/her opinions and suggestions as follows:

E1: *"Although the most suitable environments for vocal health are acoustic areas, unfortunately finding acoustic conditions of opera stages is very difficult in Turkey. In terms of vocal health, it is important to sing in acoustic environments for long-term healthy use of voice without straining or forcing it. However, these conditions are not available. Special acoustical environments, where reverberation of the sound is not faded, should be created with special acoustical interventions."*

1. Tool and Equipment Adequacy

In practicing the IVE course, instructors mainly use tools and equipment such as piano, mirror, computer as well as written and visual materials. Five of the participating instructors, who stated that they had problems related to the equipment adequacy, indicated that they had problems with the position and maintenance of the pianos. Three of these instructors (E2, E8 and E9) stated that they used digital piano in their classes, and that this instrument did not have an acoustic piano effect, despite not having any problems in terms of piano regulation. The two instructors stated that the position of the piano had a negative impact on the class because of the small size of the classrooms.

E3: *"Although the instructors should position on the piano in a way to face the students, these rooms are not suitable for such practicing position."*

E6: *"...Because the rooms we teach in are very small, the faces of the students cannot be seen. This often causes problems with seeing their mouth movements. The fact that pianos are not regulated regularly is an important problem as well."*

Similarly, E10 also mentions the need for regular maintenance of the pianos used in the classes and offers a suggestion on this matter as follows:

E10:*"In the institution, where I work, the lack of the piano regulating staff and insufficiency of piano maintenance and regulation creates negation in my classes. In the music education departments, there should be specialists in piano maintenance and repair.*

3.4. Problems caused by the curriculum in the IVE courses and the views on the solution of these problems

The problems faced by the instructors in relation with this question are basically gathered under three themes;

1. Time Allocated to IVE Courses
2. Accompaniment Problem
3. Teaching Material

1. Duration of Course

Apart from one instructor (E7), nine instructors participating in the study stated that the time allocated to IVE in the undergraduate program of music teaching (number of terms and weekly course hours) was insufficient for teaching that course. At the same time, instructors also stated that the course load increased, when inadequacy of the duration combined with the insufficiency of the number of instructors. The views on this matter are expressed as follows:

E1: *"…This course, which is available for one hour a week for four semesters in the curriculum, passes by the students trying to understand what they are to do [purpose of the course] in the course because of the problems we have mentioned in the previous items. When the students start understanding some things, the course ends before the technique is comprehended and self-control is developed. So is to say, it dEs not reach its goal. The students cannot be provided with a technique where they can control their voice healthily and tirelessly. They cannot use their voices effectively in choir classes and other classes, which means that they cannot transfer their voices."*

E4: *"IVE courses cannot be conducted "individually" by the instructors, because it is a mandatory course that all of the students are required to take for 4 semesters in the curriculum. The most important problem is the number of students and instructors as well as the disproportion of the duration of course. IVE can be considered as a separate specialty. In my opinion, the expectations from IVE courses are different from IIE [Individual Instrument Education] courses. Thus, I think it would be appropriate for some of the instructors in the field of voice to conduct only IVE courses."*

E6: *"The polyphonic choral education classes were reduced to 2 hours whilst it was 4 hours per week. IVE classes were reduced to half an hour per student per week, whilst it was 1 hour.*

1. Accompaniment Problem

Nine out of ten instructors stated that they had problems regarding this theme. Some of the opinions and suggestions offered by the instructors are as follows:

E1: *"The topic of studying with accompany is a serious problem as it is essential to integrate and feel the music. However, the music education department curriculums of the faculties of education do not include vocal or instrumental accompaniment [korrepetition] classes as they*

used to in the past. Here, it may be possible to make the accompaniments same with the works in the repertoire of the individual voice training course by being in coordination with the piano instructors, but this is also very difficult due to challenges in ensuring the right time for both the student and the accompaniment. The curriculums can be reviewed and suggested to include accompaniment classes."

E2:*"Almost no healthy practice can be made in terms of studying and singing with accompaniment. The solution of the problem may be possible with the improvement of the curriculum in this respect."*

E3: *"The faculties of education must definitely have lecturers, research assistants and instructors who are capable of conducting accompaniment classes and private advance voice training classes. The students should also practice with the accompanist after advance voice training classes. Exams must definitely be made with the real accompaniment of the voice training song. Otherwise, it is meaningless to measure the intonation in students by playing the tune on the right hand, and this leads them to become a free-rider without thinking."*

E5: *"I try to accompany with the piano in the final exams as much as possible. In cases, where I cannot accompany enough due to lack of time, I use mp3 format accompaniment. Of course, the live piano accompaniment positively affects the students' performance. For this purpose, I recommend recruiting full-time accompanists in each department."*

E6: *"Accompaniment may be as much as the instructor plays. In this sense, an accompanist is necessary."*

Despite reporting a problem regarding accompaniment, two instructors offered a proposal on the matter:

E6: *"...Students take piano and harmony classes, so even if they cannot have the original accompaniment, they can accompany with the chords.*

E9: *"Accompanied studies are conducted by 4th grade piano students, close to their final exams. I did not have to deal with this issue as I do accompany myself in all of my classes."*

One instructor, on the other hand, stated that it may be difficult to create an opportunity for students to be accompanied, but expressed the following opinion in a way to support the views of the instructors above:

E4: *"My practice in this regard is as follows. I give encouraging assignments to my IVE students in order to ensure that they definitely sing with accompaniment. In each class, my students make piano accompaniment for each other in each term."*

Another instructor, who noted that there was no specialist accompanist at the institution he/she worked in and that the classes related to the field of voice education (IVE, IIE and Choir) should be conducted with a specialist accompanist, made the following proposals:

E10: *"Using the technological facilities, it is possible to prepare piano accompaniment of the studies and works on the notation software and to perform the works with accompaniment from the computer."*

1. Teaching Materials

Even though most of the instructors participating in the research did not report a problem arising from the teaching materials in the IVE course, the two instructors expressed their opinions regarding this theme.

E4, who thinks that no problem will be encountered related to teaching materials (method, album, note, etc.) in the IVE course thanks to current technological possibilities, expresses the following opinion:

E4: *"...I believe that the IVE courses are far from accomplishing their purposes in terms of content, method and repertoire etc. within the context of practices. In the IVE classes, it is useful for the music teacher candidates to work on the most appropriate repertoire for each student in order to enable them to learn how to sing easily, comfortably, lovingly and at a level that can meet the individual and professional expectations and needs."*

On the other hand, E3 offers the following views and suggestions:

E3: *"Old resources and editions should be revised, some notes should be rewritten and textbooks specific to faculties of education should be prepared."*

Apart from the duration of the course and the accompaniment problems, on which the majority of the instructors agree, the following problems arising from the curriculum are also expressed:

E9: *"For me, the biggest problem is the unwillingness of the students caused by the intensive curriculum. If the intensity of the courses within the curriculum is reviewed and reduced in number, the reluctance of students will be eliminated too."*

The feeling of "unwillingness" expressed by E9 was defined as "weariness" in the views of E1 who expressed the problems experienced by the student in the second question.

While E1 stated that the instructors did not use a common method and that it was necessary to establish a voice education council to determine what needed to be done, E4 stated that the curriculum could be improved by planning for the objectives and achievements of the course.

In addition to the findings presented within a thematic framework related to four sub-problems, E10 suggests that the students should get to the level of taking to the stage for performing a recital. However, another instructor (E6) stated that the students could not get on the stage, despite being trained, by using the following statement:

E6: *"Since the concert halls are fully booked because of some seminars or symposiums of other departments, there are difficulties in giving concerts."*

Finally, it is useful to include another problem and solution proposal for the IVE course, which is expressed by E2:

E2: *"Due to low intensity of advance voice training exams in the entrance exams, we cannot find a sufficient number of students with the qualification of developing singing skills. Increasing or balancing the singing score in the entrance exams can be a solution."*

1. Result, Discussion and Recommendations

In this research, the opinions of the instructors conducting the IVE courses at the DFAE and DME of Faculties of Education in the universities on the problems encountered in the IVE course and their solution proposals for these problems were evaluated. The answers given by the participants to the questions addressed to them in order to find solution for four sub-problems of the research were analysed by using content analysis method, and the data obtained were presented under headings by creating a thematic framework. Consequently, the problems encountered by the instructors in the IVE courses were determined and their opinions were shared. These opinions and recommendations are briefly mentioned in the following items:

1. The number of instructors specialized in the field to conduct IVE courses in DME is not sufficient. Since the number of field specialists is insufficient, IVE courses are given by the instructors who do not have main branch/instrument or advance voice training. IVE courses must be conducted by the instructors specialized in that field, and a sufficient number of voice instructors should be recruited.

2. The time allocated to the IVE courses in the Music Teaching undergraduate programs is insufficient (semester and weekly course hours).

3. Due to instructor shortage and the insufficiency of course duration, the course load of the instructor increases, the IVE course, which should be conducted individually with each student, is conducted with 2-3 students, and thus the objectives of the course cannot be achieved. As this may lead the instructor to experience a decrease in performance and cause him/her to fail in finding enough time to improve himself/herself academically, it also prevents the students from receiving an efficient course.

4. Most of the students have inadequate knowledge on the anatomy and protection of the vocal organ and vocal health. In addition, incorrect or incomplete behaviours acquired before the undergraduate education also affect the vocal health and misuse of voice by the students.

5. As well as the students' personal characteristics (physical and mental) and lifestyles affect the IVE course negatively, the intensity of the curriculum and the objectives of the course, which cannot be understood by the students, also create the feeling of unwillingness towards the course.

6. The classrooms, in which the IVE courses are conducted, have insufficiencies in terms of size and acoustics. The position of the piano in the small size rooms dEs not allow the student to face the instructor during the class.

7. In some departments, there is no acoustic piano available in IVE classrooms. This situation negatively affects teaching. Instructors working on acoustic piano also deal with the issues related to lack of regular maintenance and repairs of the pianos. Definitely, some experts in the field of piano repair and maintenance must be present in the DME.

8. IVE courses must be conducted with piano accompaniment, but IVE courses and exams are conducted with piano accompaniment within the capabilities of the instructors. For this reason, there should be accompanists present in the DME of the faculties of education.

9. The teaching materials (oral and instrumental works) to be used in the IVE courses must be determined in accordance with the objectives of the course, and at the type and level to meet the students' professional expectations and needs.

10. The objectives and behaviours of the IVE course should be re-determined according to the expected achievements of the course and a common curriculum including the methods, techniques and materials to be used should be developed.

The above-mentioned opinions and suggestions reflect a significant part of the problems faced by instructors during IVE courses. Based on the opinions and suggestions of the instructors, it is though that first of all, a curriculum should be developed in order to meet the applicable professional expectations by determining objectives, methods and techniques for the content and conduction of the IVE course, and then an appropriate duration should be established in accordance with the importance and objectives of the course.

Efforts should be made to increase the number of instructors with qualifications required to conduct IVE courses in DME of the faculties of education; to establish appropriate physical conditions for conducting IVE courses and to eliminate the deficiencies such as classrooms, teaching tools and equipment, teaching materials and technical infrastructure. For example, it can be suggested to create instructional materials and archives for visually impaired students with the Braille notation system. At the same

time, it is also important to find the experts, who will be regularly engaged in the maintenance and repair works of the pianos in DME, and to eliminate the need for advance vocal accompanists for voice education courses. In addition to all these, it can be suggested to carry out more comprehensive researches, in which the IVE practices and students' views will be evaluated, by extending the sample of this research.

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THE CASE FOR EXAMINATION OF DIFFERENT METHODS USED IN LIFE SCIENCES AND SOCIAL STUDIES COURSES

Case Study

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Abstract

In this study aimed to identify preservice gifted education teachers' opinions on the instruction of life sciences and social studies courses and examine the activities, they developed regarding the several methods and techniques related to the courses. In this study, which has qualitative research features, an open-ended questionnaire was used as a data collection tool. It has been determined that the majority of preservice teachers prefer to use the constructivist approach in life sciences and social studies courses in terms of the obtained data. In addition, preservice teachers have stated drama, case study, and empathy among the methods and techniques that can be used in life sciences and social studies courses. It has been determined that preservice teachers also state various types of activities that can be used in the classroom for these methods and techniques. These types of activities include impersonations, activities which involve examples from everyday life and activities based on human relations.

Keywords: life sciences and social studies course, gifted education preservice teachers, methods and techniques.

1. Introduction

In the advancing and changing world, it is critical to include courses that involve elements from individuals' real lives in the educational system. Students have knowledge of events closely related to life and have the chance to experience and discuss these events with the help of these courses. The quality of courses on the primary school level during which the foundations are laid in children's lives has been gathering attention within this context.

The ability of younger generations to adapt to the multi-dimensional social structure of the 21st century which has seen an intense change and transformation is an important quality of humanity on the path to modernization. In this context, involving the life itself in the content of courses has been one of the most important attributes of modern curricula of life sciences and social studies (Kabapınar, 2012). While life sciences courses are instructed in the first three years at primary schools, social studies courses start to be instructed in the fourth year as a continuation of life sciences course in Turkey. Both courses have similarities. As courses which intensively cover the elements of individuals' lives, life sciences and social studies give students the chance to make contact with real life. In these courses which are instructed through association with individuals' immediate circle, psychological, cognitive and social contributions are also made to their developments (Aydın & Gürler, 2012).

While life sciences courses are instructed in the first three years at primary schools, social studies courses start to be instructed in the fourth year as a continuation of life sciences course in Turkey. Both courses have similarities (Ministry of National Education, 2018).

How the courses of life sciences and social studies are instructed by teachers to primary school students is also of vital importance. A great deal of duties falls to the programs of

Classroom Teaching and Gifted Education in faculties of education in this sense. It would be appropriate to ask about the opinions of the prospective teachers and perform activities in accordance with their opinions when providing the training in the teaching profession.

There are several studies in the literature which examine the opinions of preservice teachers on the courses in faculties of educations in terms of various factors/variables (Aksu, 2008; Gültekin & Gündoğan-Çöğenli, 2014; Güven & Ersoy, 2007; Kılınç & Uygun, 2015; Kurtdede-Fidan, 2009; Öztürk & Alkış, 2009; Şahin & Kartal, 2013; Türkmen, 2002; Yapıcı & Yapıcı, 2004). There are also other studies in which opinions of preservice classroom teachers on the courses of life sciences and social studies are investigated in the literature (Gültekin & Gündoğan-Çöğenli, 2014; Güven & Ersoy, 2007; Kılınç & Uygun, 2015). However, no studies were observed on the opinions of preservice gifted education teacher although they are to instruct these courses, too. The only examples in the national literature were observed to be the study performed by Mertol, Doğdu and Yılar (2013) in which gifted and talented students' metaphorical perceptions of social studies course were investigated and the study performed by Uzun (2006) in which the relationship between gifted or talented students' attitudes toward social studies course and their academic achievements.

On the other hand, no studies were observed on receiving preservice gifted education teachers' opinions on the instruction of life sciences and social studies courses. Hence, it is anticipated that the examination of preservice gifted education teachers' opinions on the courses of life sciences and social studies will contribute to the improvement of the quality of these courses. Accordingly, this study aimed to identify preservice gifted education teachers' opinions on the instruction of these courses and examine the activities they developed regarding the several methods and techniques related to the courses.

To this end, answers were sought to the following research questions:

1) What are the approaches that the preservice teachers would prefer when instructing the courses of life sciences and social studies and what are their features?

2) What are the opinions of the preservice teachers on the methods and techniques that can be used in the courses of life sciences and social studies and what suggestions do they have about the activities?

2. Methodology

2.1. Research Design

The case study design, which is qualitative research design, was used in the research. Case study research is a qualitative approach in which the investigator collects in-depth information on a real-life, current situation or multiple situations within a given time via multiple information resources and reports a case description (Creswell, 2015, p. 97). This design was chosen since it was deemed appropriate for the nature of this study.

2.2. Study Group

The study group of the research consisted of 29 fourth-grade preservice teachers (22 females, 7 males) attending the Program of Gifted Education in the Department of Special Education at a university in Istanbul province. This group was chosen because they took the life sciences and social studies teaching the course. The preservice teachers were selected on a volunteer basis using the convenience sampling method (Patton, 2014).

2.3. Data Collection Instruments

The data collection instrument used in the study was an open-ended questionnaire aiming to identify preservice teachers' opinions on the instruction of life sciences and social studies

and the methods and techniques that can be used in these courses. The questions in the open-ended questionnaire were about which approaches the preservice teachers would prefer in these courses, how the course books used in these courses differ by their approaches, which methods and techniques could be utilized in the courses and about developing activities with those methods and techniques.

The questionnaire was prepared by the researcher, and the expert opinions of five instructors and three classroom teachers had been received on the subject. The content validity indexes of the questions were calculated with the Lawshe (1975) technique (as cited in Yurdugül, 2005). As the content validity indexes were found to be 0.92, it was considered that these questions were valid.

2.4. Data Analysis

The data achieved in the study were analyzed with the content analysis method. The main purpose of the content analysis, which is a qualitative research method, is to access concepts and relationships that might characterize the data at hand and help the data explained (Yıldırım & Şimşek, 2013).

The data were coded in relation to the methods and techniques used in the courses. In this process, the common characteristics of the codes were found to establish general categories and specific subcategories. All data were placed under these general and specific themes. In addition, quotations from the students' views were included to support these themes.

In the analysis of the qualitative data, the support of two expert faculty members was received to ensure the validity of coding. This expert was asked to recode the data obtained during the content analysis of the open-ended questionnaire. The coding of the researcher and the experts was compared, and the intercoder reliability was calculated using the formula given by Miles and Huberman (1994): Reliability = Number of Agreements / Number of Agreements + Number of Disagreements. According to Miles and Huberman (1994), when this value is greater than 0.80, the analysis is considered reliable.

In the analysis of the data collection instrument, the intercoder reliability coefficients between the different experts are given in Table 1.

Table 1. *Reliability coefficients of the data collection instrument*

Data collection instrument	Expert 1	Expert 2	Mean
Open-ended questionnaire	0,86	0,90	0,88

According to Table 1, when the data were analyzed, the coefficient averages of the analyses of the researcher and the other two instructors were 0.88. Accordingly, it can be said that the analysis of the data collection tool used in this study was reliable.

3. Findings

3.1. Preservice Teachers' Opinions on How the Courses are Instructed

The findings of the first research question were achieved by analyzing the answers given by the participants to the open-ended questionnaire in regard to the approaches that can be used in the courses of life sciences and social studies. The data obtained are given in Table 2.

Table 2. *Approaches that can be used in the courses of life sciences and social studies*

Approach type	Number (f)
Constructivist approach	25
Behavioural approach	-
Both approaches	4
Total	29

According to Table 2, as for the approaches that can be used in the courses of life sciences and social studies, 25 of the preservice teachers preferred the constructivist approach while 4 of them reported that both approaches can be used together. There were no preservice teachers who preferred the behavioural approach alone. It was observed that the preservice teachers generally mentioned the importance of using the constructivist approach in the courses of life sciences and social studies. Moreover, 4 preservice teachers stated that using both approaches together would be useful and it is important to do so from time to time.

The findings obtained from the answers given by the participants about the courses instructed with the constructivist approach and the features of the books of these courses are given in Table 3.

Table 3. *The features of the courses instructed with the constructivist approach*

Main themes	Subthemes	Number (f)
Roles of student and teacher	Students are active	12
	Guiding role of teacher	10
Learning	Retentive learning	10
	Learning by doing-living	7
Presentation of information	Explored by students	7
	Constructed by students	5
Presentation of texts	Students' area of interest	6
	Associated with real life	6
Images	More images than texts	5
	Critical thinking	3
	Creative thinking	6
Activities	Including students in the process	5
	The needs of students	2

Regarding the data in Table 3, the preservice teachers provided opinions on the courses of life sciences and social studies instructed with the constructivist approach and their course books. According to the preservice teachers, there were theme activities among the main themes differently from the main themes in the behavioural approach. It was observed that 12 preservice teachers provided opinions on the subtheme students are active whereas 10 preservice teachers provided opinions on the subtheme guiding role of the teacher under the main theme roles of student and teacher.

Some of the preservice teachers provided opinions on the subject learning regarding the courses of life sciences and social studies in which the constructivist approach is dominant.

10 of the preservice teachers stated opinions on the subtheme retentive learning and 7 of them on the subtheme learning by doing-living.

Another main theme stated by the preservice teachers was the presentation of information. 7 of the preservice teachers providing opinion on this main theme stated that information is explored by students in constructivism-based courses whereas 5 of the preservice teachers stated that it is constructed by students. Regarding the main theme presentation of texts in the course books, 6 preservice teachers stated that texts are for students' area of interest while 6 preservice teachers stated that texts are associated with real life.

5 of the preservice teachers who provided opinions on the images in the course books stated that there are more images than texts whereas 4 of the preservice teachers stated that they are for critical thinking. Regarding the activities in the course books, 6 of the preservice teachers stated that activities are for creative thinking, 5 of them stated that they are for including students in the process, and 2 of them stated that they are for the needs of students.

Following the findings on the constructivist approach in Table 3, preservice teachers' opinions on the courses instructed with the behavioural approach and on their course books are given in Table 4.

Table 4. *The features of the courses instructed with the behavioural approach*

Main themes	Subthemes	Number (f)
Roles of student and teacher	Students are passive	8
	The leader is the teacher	6
Learning	Rote learning	5
Presentation of information	Being readily available	7
Presentation of texts	Didactically	5
Images	Less images than texts	5

According to Table 4, the features of the courses and course books of life sciences and social studies instructed with the behavioural approach were studied under the main themes roles of student and teacher, learning, presentation of information, presentation of texts and images. Under the main theme roles of student and teacher, while 8 preservice teachers stated that students are passive, 6 preservice teachers stated that the leader is the teacher as subthemes.

About the subtheme rote learning under the main theme learning, 5 preservice teachers provided opinions. 7 preservice teachers stated opinions on the subtheme being readily available under the main theme presentation of information. 5 of the preservice teachers reported the presentation of texts in the course books that they are included in the books didactically. 5 of the preservice teachers who provided opinions on the distribution of images in the course books reported that there are fewer images than texts and they do not like it in the behavioural books.

In the light of the achieved data, the preservice teachers would prefer the courses of life sciences and social studies instructed with the constructivist approach.

3.2. Opinions and Suggestions of Preservice Teachers on Methods and Techniques Used in the Courses

In this part, Table 5, 7 and 9 present the preservice teachers' opinions on several methods and techniques that can be used in the courses of life sciences and social studies, and their suggestions for activities using those methods and techniques are presented in Table 5, 8 and 10. Preservice teacher opinions on drama as one of these methods and techniques can be found in Table 5.

Table 5. *Preservice teachers opinions on the features and contributions of the drama method*

Main themes	Subthemes	Number (f)
Features of the drama method	Reconstruction of a situation or case	11
	Reconstruction based on a fictional work	8
	Improvisation	7
Contributions of the drama method	Ensuring retention in learning	5
	Ensuring understanding through examples	3
	Bringing different perspectives.	3

It is seen in Table 5 that the preservice teachers provided opinions on the features and contributions of the drama method. Accordingly, 11 of the preservice teachers stated their opinions regarding the reconstruction of a situation or case, 8 of them regarding the reconstruction based on a fictional work and 7 of them regarding the improvisation features of the drama method. As for the preservice teacher opinions on the contributions of drama, 5 preservice teachers stated its contribution of ensuring retention in learning whereas 3 preservice teachers each stated its contributions of ensuring understanding through examples and bringing different perspectives.

Table 6 shows preservice teachers' suggestions for activities using the drama method in the courses of life sciences and social studies.

Table 6. *Activities related to drama for life science and social studies courses*

Activities	Number (f)
Impersonations from real life	10
Meeting and preparation for the subject	6
Impersonations about traffic rules	5
Impersonations about keeping the environment clean	4
Improvisations about historical subjects	4
Impersonations about an ethical dilemma	2

According to the data in Table 6, 10 of the preservice teachers reported that impersonations from real life are activities associated with drama. The preservice teachers also provided suggestions for activities of meeting and preparation for the subject (6 participants), impersonations about traffic rules (5 participants), impersonations about keeping the environment clean (4 participants), improvisations about historical subjects (4 participants) and impersonations about ethical dilemma (2 participants).

Preservice teacher opinions on the features of the case study method which can be used in the courses of life sciences and social studies are presented in Table 7.

Table 7. *Preservice teachers opinions on the features of the case study method*

Main themes	Number (f)
Giving concrete examples from life	6
Explaining a subject with an example	5
Ensuring the retention of theoretical subjects	3
Facilitates understanding the subject	1

According to the opinions presented in Table 7, 5 of the preservice teachers provided opinions on case study being about giving concrete examples from life while 5 of them stated that it helps to explain a subject with an example and 2 of them reported that it is used for ensuring the retention of theoretical subjects. Only 1 preservice teacher stated that it facilitates understanding the subject.

The preservice teachers also made suggestions for activities using the case study method. They are shown in Table 8.

Table 8. *Activities related to the case study method for life science and social studies courses*

Activities	Number (f)
Activities which involve examples from everyday life	15
Activities ensuring student's activeness	12
Discussion activities	8
Activities for solving a specified problem	7

According to Table 8, the preservice teachers thought that activities which involve examples from everyday life (15 participants), activities ensuring student's activeness (12 participants), discussion activities (8 participants) and activities of solving a specified problem (7 participants) are fit for instruction with the case study method.

Preservice teacher opinions on empathizing which is a method that is used in the courses of Life Sciences and Social Studies are given in Table 9.

Table 9. *Preservice teachers opinions on the features of the empathizing*

Main themes	Number (f)
Putting oneself in other's place	12
Understanding what others feel	8
Understanding other's behaviors	7
Do act like the opposite	3
Internalization	2
Creating experiences	1

It is seen in Table 9 that the preservice teachers stated that empathizing is about putting oneself in other's place (12 participants), understanding what others feel (8 participants), understanding other's behaviours (7 participants), do act like opposite (3 participants),

internalization (2 participants), and creating experience (only 1 participant). The preservice teachers generally thought that it is important to include activities of empathizing in the courses of life sciences and social studies. Their suggestions for empathizing activities that can be used in these courses are presented in Table 10.

Table 10. *Activities related to empathy for life science and social studies courses*

Activities	Number (f)
Activities intertwined with life	7
Activities based on human relations	5
Activities about social order	4
Activities ensure open-ended activeness	3
Activities about values education	3

According to Table 10, 7 of the preservice teachers recommended empathizing activities which can be used in the courses of life sciences and social studies that activities intertwined with life can be performed. 5 of them recommended activities based on human relations while 4 of them recommended activities about social order. 3 preservice teachers each recommended activities that ensure open-ended activeness and are about values education.

It can be accordingly concluded from the findings that the preservice teachers stated the methods of drama, case study and empathizing among the methods and techniques that can be used in the courses of life sciences and social studies.

4. Discussion and Conclusion

Great work falls to teachers about the instruction of life sciences and social studies which are primary school courses intertwined with real life. Therefore, it is of importance to instruct the life sciences and social studies teaching a course in a qualified way in faculties of education. Classroom teachers and gifted education teachers are among those who will instruct these courses. In this study, an open-ended questionnaire was applied to fourth-grade preservice teachers attending the Program of Gifted Education who would instruct the courses of life sciences and social studies in the future.

Opinions provided by the preservice teachers on the courses of life sciences and social studies instructed with the constructivist and behavioural approaches were grouped under the main themes roles of student and teacher, learning, presentation of information, presentation of texts, and images. They stated their opinions under the title activity in regard to the courses instructed with the constructivist approach. It was observed that the majority of the preservice teachers would prefer the constructivist approach used in the courses of life sciences and social studies.

In the study carried out by Gültekin and Gündoğan-Çöğenli (2014), the preservice teachers stated that life sciences course facilitate understanding oneself, one's learning properties and the learning process itself. The participant preservice teachers in that study also reported that life sciences course is about current life. The preservice teachers who participated in the study conducted by Güven and Ersoy (2007) found themselves competent and on a good level in regard to the competencies of life sciences and social studies teaching course.

Şahin and Kartal (2013) examined the opinions of preservice classroom teachers on the program of Classroom Teaching. They observed that the participants found the life sciences

and social studies teaching course which is a branch course to be significant and their effectiveness of primary importance.

A qualified examination of the instruction of the life sciences and social studies courses and methods and techniques to be used in these courses is important. It was found in this study that the preservice teachers stated the methods of drama, case study and empathizing among the methods and techniques that can be used in the courses of life sciences and social studies.

Among the studies on the matter, Murat, Aslantaş, and Özgan (2006) took the opinions of preservice teachers to evaluate the in-class activity processes of instructors. The results showed that half of the instructors were perceived to be competent in the in-class educational-instructional activities while the other half were perceived to be incompetent. The recommendations made in that study included providing preservice teachers with training in communication, role-playing, and the use of instructional techniques and materials.

Regarding features of the drama method, the preservice teachers stated that it is about the reconstruction of a situation or event, a reconstruction based on a fictional work, and improvisation while they stated ensuring retention in learning, ensuring understanding through examples, and bringing different perspectives in regard to the contributions of the drama method. It was observed that the preservice teachers provided the following opinions on the case study method: being about presenting concrete examples from life, explaining the subject with an exemplary situation, ensuring the retention of theoretical subjects, and facilitating understanding the subject. Moreover, the preservice teachers provided opinions of being about putting oneself in other's place, understanding what others feel and their behaviours, internalization and creating experiences.

It is of vital importance that preservice teachers can develop various materials and activities, especially in the teaching courses because it enables them to get prepared for their future teaching life. In a study which examined gifted and talented students' metaphorical perceptions of the social studies course (Mertol, Doğdu & Yılar, 2013), the students defined the course with metaphors such as life, education, intelligence, human, fun, source of life, information, and life sciences.

It can be argued that the gifted and talented students associated with the social studies course with life and fun in that study. How teachers use different methods and techniques in such courses is important in ensuring the activeness of students in the classroom setting.

It was observed in this study, too, that the preservice teachers made suggestions about the use of drama, case study and empathizing methods in the courses of life sciences and social studies. The preservice teachers made the following suggestions about the drama method: activities of meeting and preparation for the subject, impersonations about traffic rules, impersonations about keeping the environment clean, improvisations about historical subjects, and impersonations about the ethical dilemma. Regarding the case study method, the preservice teachers suggested activities which involve examples from everyday life, activities ensuring student's activeness, discussion activities, and activities of solving a specified problem. As for the empathizing method, the preservice teachers suggested activities intertwined with life, activities based on human relations, activities about social order, activities that ensure open-ended activeness and are about values education.

Consequently, how the courses of life sciences and social studies are instructed in the classroom and the usage levels of several activities are of importance for the teachers of the

future. Therefore, related programs in the faculties of education have a great responsibility in this sense.

5. Recommendations

- It can be recommended that future studies investigate the usage of several instructional methods and techniques in the courses of life sciences and social studies because it is of specific importance that preservice teachers get to mingle with the ways of using these active learning methods in the classroom.
- It can be also effective in terms of instructing the courses of life sciences and social studies in accordance with the constructivist and behavioural theories and making the required comparisons.
- Also, by taking the opinions of prospective teachers in different countries, comparative studies can be conducted regarding the use of different methods and techniques in the classroom environment.
- By observing the courses in which different methods and techniques are used in the educational environment, the opinions of elementary school students regarding the educational process can be taken.
- Qualitative, quantitative and mixed studies can be carried out accordingly.

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EXAMINING THE ATTITUDE CHANGE OF PRE-SERVICE ELEMENTARY SCHOOL TEACHERS TOWARDS A COURSE OF MATHEMATICS EDUCATION WITHIN THE FRAMEWORK OF THEORY OF DIDACTICAL SITUATIONS

Research Article

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EXAMINING THE ATTITUDE CHANGE OF PRE-SERVICE ELEMENTARY SCHOOL TEACHERS TOWARDS A COURSE OF MATHEMATICS EDUCATION WITHIN THE FRAMEWORK OF THEORY OF DIDACTICAL SITUATIONS[1]

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Abstract

This study investigated whether the training program given within the framework of the Theory of Didactical Situations (TDS) within a mathematics education course could change the pre-service elementary teachers' attitudes towards a mathematics education course in an 11-week teaching process. In the study, the mixed method was used. The participants were 86 pre-service elementary teachers (52 female and 34 male). In the study, the quantitative research data were collected using the Attitude Scale for Mathematics Education Courses (ASMEC), and the qualitative data were collected using semi-structured interviews. For the analysis of the quantitative data, paired samples t-test was applied, and for the analysis of the qualitative data, content analysis was conducted. The results revealed that the training program given in line with TDS created a statistically significant difference between the pre-test and post-test scores of the pre-service elementary school teachers with respect to their attitudes towards courses of mathematics education ($t(85)=-2.22$, $p=.029$) and that there was no statistically significant difference in terms of gender, though ($t(84)=.987$, $p=.327$ and $t(84)=1.108$, $p=.258$). It was found that the training program given in accordance with TDS had a positive influence on changing and developing the attitudes of the pre-service elementary teachers towards mathematics education courses.

Keywords: Attitude change, Gender, Mathematics courses, Theory of Didactical Situations, Pre-service teachers.

1. Introduction

Students' attitudes towards mathematics at schools have considerable influence on their approaches to problems (Bloom, 1977; Ministry of National Education [MoNE], 2018). In this respect, most initial studies on attitudes towards mathematics focused on the relationship between attitudes and any other variable (for example, achievement) (Goldin et al., 2016). Goldin et al. (2016) point out that recent studies on attitudes towards mathematics have avoided such vicious circles and that studies conducted to examine the attitudes of students unsuccessful in problem solving towards mathematics have provided researchers with new insights. It is an undeniable fact that attitudes towards mathematics are developed to a great extent in school years (Bloom, 1977) and that teachers have a key role in the development of these attitudes. This situation has led the focus onto the training of teachers who will teach

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[1] A preliminary version of this article was presented orally at Vth International Eurasian Educational Research Congress, on 2-5 May, 2018, at Akdeniz University, Antalya/Turkey

mathematics at all levels at schools. Therefore, studies on teacher training now focus more on how to make changes in pre-service teachers' attitudes towards mathematics (Anderson & Piazza, 1996; Bailey, 2014; Charalambous et al., 2009; Philippou & Christou, 1998). All these studies demonstrate that well-designed teaching environments could lead to changes in pre-service teachers' attitudes towards mathematics.

It is reported that pre-service teachers' mathematics-related experiences they gain during their elementary school and high school years shape their attitudes towards mathematics (Hourigan et al., 2016). Ball (1990), who draws attention to this situation, states that pre-service teachers' past experiences in their elementary school and high school years are not enough to understand mathematics teaching and that it is thus necessary to focus more on their past experiences to create changes in their attitudes towards mathematics. The present study examined the changes in the pre-service elementary teachers' attitudes towards mathematics in the process of teaching mathematics in a teaching environment designed in line with the constructivist approach, which was different from the way of teaching mathematics they faced in their elementary and high school years. In order to clarify this purpose, it is first necessary to mention what the attitude is, what the attitude towards mathematics is and how the attitude towards mathematics appears. Following this, the related literature on how attitudes can be changed will be reviewed.

1.1. Review of the Literature on Attitudes towards Mathematics

The term attitude, which is a considerably complex psychological variable, is used for emotional states, behavioral tendencies, beliefs, views and perceived social distances (Hunter et al., 1984). Thus, it is obvious that attitude includes cognitive, emotional and behavioural components (Maio, Haddock and Verplanken, 2019). This makes it necessary to examine attitude in different study fields from different perspectives.

Researchers define attitude in many different ways, yet there are two prominent definitions of attitude. According to one of these two definitions of attitude, it refers to emotional reactions involving positive and negative feelings in the state of equilibrium (McLeod, 1992). According to the second definition of attitude, it refers to the behaviors of acting, feeling or thinking, which reflect the individual's tendencies or thoughts (Philipp, 2007). Examining a number of definitions of attitude, Leder (1987) explains the fundamental properties of attitude as follows: 1. Being learned in time, 2. Being prepared in advance for appropriate or inappropriate action and 3. Having consistency in responses. Similarly, McLeod (1992) reports that attitudes develop in line with experiences in time; that they are consistent; and that strong changes in students' attitudes could thus have long-term influence. However, this does not mean that an attitude towards a subject or an object will never change. For instance, those who teach a discipline develop a certain degree of attitude during their education lives towards the subjects they will have to teach in future. One of these disciplines is the mathematics education.

It is seen that there is no compromise on the definition of the term attitude in mathematics education and that a wide variety of definitions of attitude have been provided. Some mathematics educators define attitude towards mathematics as a positive or negative emotional tendency towards mathematics courses at school (Haladyna et al., 1983), while others regard it as the emotional reaction to mathematics and beliefs and behaviours regarding mathematics (Hart, 1989). All these definitions demonstrate that individuals' attitudes towards mathematics are mostly in the form of inner reactions, and this makes it necessary to investigate the internal mechanisms of individuals (within the process) which they use when exposed to mathematical actions. This will allow revealing how attitudes towards mathematics could be changed.

In relation to how attitudes towards mathematics appears, McLeod (1989) claims that attitudes towards mathematics refer to automatized constantly-repeated emotional reaction and to the transfer of a current attitude to a new but related situation. In this respect, the starting point of the present study is the hope that pre-service teachers' attitudes towards mathematics could be developed with the help of the two situations above which cause attitudes to occur.

Another important issue is that attitude towards mathematics has a relationship with how mathematics is taught. In this respect, the most important cause of anxiety is reported to be the case of teaching under the guidance of an authoritarian teacher (Altun, 2013). Ball (1990; 1996) states that pre-service elementary teachers are accustomed to using teacher-centered approaches based on memorization and other related procedures rather than using their own independent thoughts. In our country, it could be stated that student-centered approaches are not common in practice though these approaches are theoretically suggested. This situation has arisen the question of how different methods of teaching influence the affective domain regarding mathematics. In one experimental study, Alsup (2004) reported that there was a decrease in the pre-service elementary teachers' levels of anxiety about mathematics when they were taught mathematics using constructive methods instead of traditional methods. Therefore, teachers are suggested to make use of more advanced methods of teaching mathematics (MEB, 2018). When compared to the traditional methods, student-centered approaches to solving problems provide a better class atmosphere in the teaching process (Gok & Erdogan, 2017). Therefore, it is thought that a positive change could occur in pre-service teachers' attitudes towards mathematics when mathematics is taught with the help of new student-centered teaching approaches (for example, teaching mathematics via games).

This change, which could be regarded as the last step of the teacher training process of pre-service teachers, is considered to be a negative situation when compared to elementary school and high school students. The reason is that individuals' attitudes towards mathematics will become rooted (Hembree, 1990; Ma & Kishor, 1997). On the other hand, Beswick (2006) points out that causing permanent changes in pre-service teachers' beliefs and attitudes is difficult but possible with the help of appropriate designs. As a support to this, Anderson and Piazza (1996) state that teaching mathematics to pre-service teachers by changing the curriculum in line with the constructivist learning approach has positive influence on their attitudes towards mathematics. In one small-scale cohort study carried out with pre-service teachers taking the repeat course of mathematics, Bailey (2014) found that an open-ended mathematical investigation resulted in positive reflections upon the pre-service teachers' knowledge, beliefs, and attitudes regarding mathematics. Liljedahl (2005) demonstrated that experience in AHA! had positive influence on the pre-service teachers' affective domains (beliefs and attitudes). Charalambous et al. (2009) reported that a mathematics preparatory program based on the history of mathematics had positive effects on the pre-service teachers' beliefs and attitudes in certain aspects. In another similar study conducted by Philippou and Christou (1998), it was seen that use of contents based on the history of mathematics within the scope of the curriculum of mathematics developed the pre-service teachers' attitudes especially with respect to their levels of satisfaction with mathematics as well as with respect to the benefits of mathematics. Peker and Ulu (2018) stated that teaching mathematics with the help of traditional approaches did not influence teachers' attitudes while constructive approaches had the potential to have influence. Hodges and Kim (2013) revealed that the university students' attitudes towards mathematics significantly developed in an environment designed to increase their motivations. Based on the results of all these studies, it could be stated that it is possible to make changes in pre-service teachers' attitudes towards mathematics when various appropriate designs are used to teach mathematics no matter how resistant pre-service teachers' attitudes are to mathematics.

1.2. The Curricula and Attitudes towards Mathematics in Turkey

The concept of attitude within the scope of the curriculum of mathematics in Turkey is generally examined together with self-efficacy and anxiety about mathematics within the framework of affective characteristics (MoNE, 2009). The affective elements related to mathematics (attitude, self-efficacy and anxiety) are mentioned in detail in the curriculum. It is pointed out that in the teaching process, teachers should determine the affective characteristics of students in several ways (observation, questionnaire, diaries and so on) and take related precautions. In order to increase students' levels of motivation in mathematics courses, things that should be done in a teaching process to help students develop positive attitudes include: a) focusing on conceptual learning, b) selecting appropriate out-of-class tasks, c) effective use of the feeling of achievement, d) use of game-based learning and e) encouraging cooperative learning (MoNE, 2009).

It is seen that the changes done in the curricula in 2013 and 2018 did not cover attitudes towards mathematics at all because of the efforts to simplify the mathematics curriculum. In the 2018 mathematics curriculum, it is pointed out that attitude has the potential to change in the process and that it is a variable to be revised constantly. Several issues should be covered in the mathematics curriculum and taken into account for students to develop positive attitudes towards mathematics.

The influence of developing positive attitudes towards mathematics on learners' achievements in mathematics cannot be ignored. For this reason, mathematical games related to the course contents should be included where appropriate in the curriculum (MoNE, 2018).

It is seen in the curriculum that the primary attention is paid to the relationship between attitude and achievement. A number of researchers revealed a strong connection between attitudes towards mathematics and achievement in mathematics (Akdemir, 2006; Grootenboer & Marshman 2016; Yenilmez 2007). Secondly, it is emphasized that positive changes in attitude should be ensured with the help of mathematical games. Fenyvesi et al. (2014) claim that games can be used in teaching mathematics in an effective way to develop attitudes towards mathematics. Based on the assumption that all individuals enjoy playing games, it could be stated that they have positive attitudes towards games. As mentioned by McLeod (1992), it is believed that integration of mathematical information into a game will help individuals direct their game-related attitudes to learn mathematics, which will then lead to changes in their attitudes towards mathematics.

Another dimension of the present study is the affective relationship between gender and mathematics. In relation to this, there are many studies in literature (Leder, 1992; Markovits & Forgasz, 2017). Initial studies reported a higher tendency of viewing mathematics as an activity more for men (E.g. Leder, 1992). A more recent study suggested that pre-service teachers' attitudes towards mathematics did not change depending on gender (Çakıroğlu and Işıksal, 2009). In the present study, determining how pre-service teachers with different genders are influenced by the process of teaching mathematics as appropriate to the constructive approach was considered to be important.

Depending on this assumption, the present study examined how pre-service teachers' attitudes towards mathematics change when the above-mentioned potential of games is used in teaching mathematical concepts within the scope of the course of Mathematics Teaching I. In this respect, in the study, the Theory of Didactical Situations was taken as reference to the active use of games in mathematics education.

1.3. The Theory of Didactical Situations

The Theory of Didactical Situations (TDS), which was put forward by Brousseau (1997), could be said to be a game-based learning approach whose roots depend on the constructivist approach (Arslan et al., 2011; Artigue, 1994; Laborde, 2007).

Brousseau (1997) explained the basic components of TDS within the context of a game called *the race to 20*. Accordingly, games have an important place in the theory. The games designed within the framework of the theory are not ordinary games but those which involve both winning and losing and which thus require optimum strategies to win (Erdogan & Ozdemir Erdogan, 2013). Learning occurs as a result of students' engagement in a milieu (for example, a game) which is considered to be a combination of epistemological constraints. In this definition, a milieu is an instructional tool which involves epistemological conditions to reveal the target information (Ligozat & Schubauer, 2010).

According to TDS, students can learn all the mathematical concepts when exposed to appropriate situations (Warfield, 2014). Here, Warfield (2014) defines the situation as conditions in which students need to use or learn a mathematical concept. In this respect, another important concept in the theory is the concept of the situation. According to the theory, instructional designs which will allow students to create their own knowledge are important (Erdogan & Ozdemir Erdogan, 2013). Such situations refer to adidactical situations in the theory. According to adidactical situations, the teacher manages to conceal the target outcome from students (for example, presenting the outcome by embedding it in the game), and students can study independently of the teacher's interventions in the teaching process (Warfield, 2014). In such situations, for the purpose of preserving the adidactical structure of the environment, Bousseau (1997) defines some of the phases in the learning environment as follows:

Devolution phase: This is the phase in which students undertakes the responsibility of the game to achieve meaningful learning without depending on the teacher's feedback (Ligozat & Schubauer, 2010).

Action phase: In this phase, students interact with the milieu and implicitly develop several strategies (Warfield, 2014).

Formulation phase: This is the phase in which students explicitly express the implicit ideas (for example, hypotheses) they have developed in the action phase (Warfield, 2014).

Validation phase: In this phase, students tell other individuals the validity of their ideas they have developed in the formulation phase. Here, the motto is to convince others they talk to.

Institutionalization phase: The teacher revises, shapes and (if necessary) classifies the ideas that the students have developed in the phases of action, formulation and validation, which could be applied in a sequential or overlapping manner, and transfers these ideas into a mathematical dimension (or explains these ideas in a way other people can understand) (Warfield, 2014).

When all these phases are taken into account, it could be stated that the teacher's role in the phases of action, formulation, and validation is just to organize discussions within groups and between groups and to establish interaction between students and the parameters of the environment (Erdogan, 2016). In this way, the teacher's role in reaching the target information is minimized, and students are provided with an environment in which they can develop their knowledge thanks to the feedback they receive in the environment. Consequently, adidactical situations can be used effectively as a dynamic approach when a solution is found to a problematic situation, when students try to reach the target information and when student-centered approaches involving the use of games are designed.

In literature, one of the purposes of studies on attitudes towards mathematics could be said to transform negative attitudes into positive ones (Di Martino & Zan, 2015). What makes the present study differ from other related studies in literature was that this study aimed to investigate how mathematics education given to pre-service teachers with the help of the parameters of innovative learning approaches influenced their attitudes towards mathematics. In this respect, this study could be said to provide a different dimension for studies on attitudes towards mathematics.

In an effective teaching process, students reach the information directly on their own. It is obvious that adidactical situations provide an appropriate environment for students to reach the information themselves. In such environments, students can learn the selected problem or situation by entertaining, doing and living without any boredom (Erdogan et al., 2014). Considering the influence of the attitudes of the teacher who will design these environments on students' attitudes (Duru et al., 2005; McLeod, 1992) as well as considering the relationship between their achievements in mathematics and the positive attitudes they will develop regarding mathematics (Caraway, 1985; Cheung, 1988; Lucas, 1998; Savas et al., 2010), it could be stated that the positive attitudes to be developed in relation to mathematics by pre-service elementary teachers, who will become teachers in future, have a close relationship with mathematics teaching. Consequently, based on the thought that pre-service teachers' attitudes and beliefs regarding mathematics can be changed during their teacher training process (Dogan, 1999), adidactical environments could be designed in relation to the course of mathematics education for pre-service elementary teachers. Within the framework of this basic conclusion, the present study aimed to examine the influence of the course of Mathematics Teaching I executed in an adidactical learning environment on pre-service elementary teachers' attitudes towards mathematics education. Also, the study tried to reveal the potential of TDS to change pre-service elementary teachers' attitudes towards courses regarding mathematics education.

2. Method

2.1. Research Purpose and Design

This study examined whether the training program given in accordance with the Theory of Didactical Situations (TDS) within the scope of a mathematics education course could create changes in the pre-service elementary teachers' attitudes towards a mathematics education course in an 11-week teaching process. In the study, the mixed method was adopted, and besides quantitative data, qualitative data were collected to elaborate and support the quantitative data. The flow of research process was as follows: the pre-test, the training program, post-test and interviews. In addition, the study did not include a control group. In this respect, the study was carried out using a pre-test-post-test weak experimental design with a single group (Buyukozturk et al., 2012).

2.2. Research Purpose and Design

In the study, in the 1_{st} week prior to the application process and in the 9_{th} week following the application process, the Attitude Scale for Mathematics Education Courses (ASMEC), which was developed by Karakas Turker and Turanli (2008) and whose reliability was calculated as 0.928, was applied to the pre-service elementary teachers to determine the influence of an adidactical teaching environment on the participants' attitudes towards mathematics education courses. In the application process, the activities prepared for the course of Mathematics Teaching I within the framework of TDS were carried out in two class hours a week in a period of seven weeks making 14 class hours in total. In the first two weeks, the concepts and phrases related to TDS were discussed. In the following weeks, the activities

designed in line with TDS in the studies conducted by Erdogan et al. (2014), Brousseau (2002), Gok and Erdogan (2017), Gok et al. (2017a, 2017b) and Inan et al. (2017) were carried out in turn. Table 1 presents the 11-week syllabus applied within the scope of the present study.

Table 1. *Syllabus*

Week	Content
1	Applying ASMEC to the pre-service elementary teachers as the pretest.
2 and 3	Introducing the basic concepts and phases of TDS.
4	Explaining how the activities will be conducted, and applying the activity developed by Erdogan et al. (2014).
5	Applying the activity of *Race to 20* designed by Brousseau (2002).
6	Applying the activity of Caesar and Captivities designed by Gok and Erdogan (2017).
7	Applying the games of *Race with Numbers* and *Bacteria Colony* designed by Gok et al. (2017a, 2017b).
8	Applying the game of *Online Ticket* designed by Inan et al. (2017).
9	Applying ASMEC to the pre-service elementary teachers as the posttest.
10 and 11	Holding semi-structured interviews with eight pre-service elementary teachers selected using the purposeful sampling method.

In the research process, the pre-service elementary teachers were divided into two groups, and the activities presented in Table 1 were carried out in order. In the study, as the learning environment which would influence the pre-service elementary teachers' attitudes towards mathematics education courses, the five phases defined by Brousseau (1997) for a-didactical learning environments (Devolution: I, Action: II, Formulation: III, Validation: IV, Institutionalization: V) were taken into account. It was seen that the applications used in the study were designed in accordance with constructive learning environments and that the application process encouraged students' participation and drew their attention. Thanks to this, the pre-service teachers were expected to demonstrate a more interested attitude towards the mathematics education course. In each of these applications, the pre-service teachers were given a problem case embedded in a game. The pre-service teachers were expected to reach a mathematical concept by coping with the conditions in the game in the process. For example, the long division was examined in the game of race to 20, and the prime factorization of a number was examined in the game of bacteria colony. In these games, the purpose was to teach the pre-service teachers how to design the game and to organize the environment in which mathematical concepts could be taught via games in class rather than just reaching these concepts. Table 2 presents the behaviors of the lecturer and of the pre-service elementary teachers in the application process of the activities.

Table 2. *Lecturer and student behaviours*

Phase	Student	Lecturer
I	-Understanding the rules of the game	-Preparing the environment -Determining the materials -Introducing the game and explaining its rules
II	-Being willing to play the game -Being active in discussions within the group	-Organizing the dynamic structure of the environment -Encouraging the game context
III	-Producing hypotheses -Examining the opponent group's hypotheses -Putting forward a model	-Encouraging within-group discussion -Having the hypotheses presented in class -Having everyone understand the hypotheses
IV	-Justifying the group's hypotheses -Trying to refute the opponent groups' hypotheses -Making explanations and providing evidence -Taking an active part in class discussions	-Encouraging discussions regarding the hypotheses -Providing the groups with the opportunity to justify or refute the hypotheses -Organizing the in-class discussions
V	-Understanding the target information in the game -Making predictions regarding the use of the target information in real life	-Re-explaining the target information in the game context, -Providing different strategies necessary to win the game -Giving mathematical meaning to the target information produced within the context of the game

As can be understood from Table 2, when the phases in TDS regarding the application of the activities are examined, it is seen that a learning environment appropriate to the constructivist approach was established. Table 2 presents in detail the behaviors of the lecturer and of the pre-service teachers in all these phases. Here, there is a transition from the phase of devolution to that of institutionalization. This approach is of vital importance for the sake of the development of knowledge. In this process, there are prominent changes in the roles and responsibilities of the lecturer and of the pre-service teachers in different phases of the activity. This situation is important for the dynamic structure of the environment, for obtaining new information through the phases within the context of the game and for reaching the target information. In this respect, in the first and last phases of the activity, the lecturer undertakes an active role and acts as a guide or organizer in the other phases for the proper application of the activity. As for the pre-service teachers, they have a receptive but questioning role in the first and last phases of the activity, while in the other phases, they take an active position in which they discover and structure the information, do mathematics and use scientific processes.

2.3. Sample and Data Collection

The study group included 86 pre-service teachers (52 female and 34 male) attending the Department of Elementary School Teaching at a state university in Turkey in the Fall Term of the academic year of 2017-2018. The participants were determined using the criterion sampling

method within the scope of purposeful sampling (Buyukozturk et al., 2012). The criteria included being registered to the mathematics education course and taking the education given within the scope of the study. The participants in the study were those who had theoretical knowledge about constructive learning environments thanks to their undergraduate education but who had not examined this practically in any course at all. In this respect, the pre-service teachers experienced mathematics education for the first time in their lives in environments designed in accordance with constructive approaches.

In the study, first, the quantitative data were collected and analyzed. Later, the qualitative data were collected via the interviews held with eight pre-service elementary teachers who were selected randomly based on the analysis of the quantitative data (four with low levels of attitudes and four with high levels of attitudes).

For the purpose of collecting the quantitative data in the study, the Attitude Scale for Mathematics Education Courses (ASMEC) developed by Karakas Turker and Turanli (2008) was applied to the pre-service elementary teachers before and after the application process. The reliability of the scale was calculated as 0.928, and it was a five-point Likert-type scale rated as "I totally disagree", "I disagree", "I am neutral", "I agree" and "I totally agree". The scale was made up of 18 items (12 with positive statements and 6 with negative statements (Karakas Turker & Turanli, 2008), and it was applied to all the 86 pre-service elementary teachers before and after the application process. In the study, the Cronbach alpha coefficient for the reliability of the research data was calculated as 0.707. This result shows that the data collected in the study were reliable (Salvucci et al., 1997; Kiliç, 2016).

Following the application process, for the purpose of supporting the quantitative data, interviews lasting 10 to 15 minutes were held with eight of the pre-service elementary teachers. In order to avoid any loss of data, the interviews were audio-recorded. The interviews were held to validate the results and to determine the related causes of these results and as well as to reveal the individuals' feelings, thoughts, believes and viewpoints regarding the research subject being investigated (Cohen & Manion, 1998; Yildirim & Simsek, 2013). In the study, the semi-structured interview method was used because it allows the researcher to change the order of the questions and explain the questions in detail (Cepni, 2010). The interview questions were prepared in line with the main research problem by asking two field experts for their views. The questions can be seen in Appendix 1. The interview questions were related to the undergraduate courses that the pre-service elementary teachers liked and disliked (specifically the course of mathematics teaching), why they liked or disliked these courses, how the teaching process should be improved regarding the courses they disliked, their background knowledge regarding the constructivist learning environments prior to the application process, the changes in their knowledge about the constructivist learning environments following the application process, the positive and negative effects of the activities carried out within the scope of TDS on liking, learning and teaching the course of Mathematics Teaching 1, and the changes caused by these activities in the pre-service teachers' interests in mathematics education courses.

2.4. Data Analysis

For the analysis of the quantitative data collected via the attitude scale, the package software of SPSS 18.0 was used. In order to reveal whether the education given to the pre-service elementary teachers had influence on their attitudes towards the course of mathematics education, paired samples t-test was applied.

In the study, the qualitative data collected via the semi-structured interviews were analyzed using the content analysis method. These data were first transferred to the computer by

listening to them repeatedly. Following this, for the analysis of these data, the pre-service teachers' responses to each question were coded in accordance with certain rules (for example, determining the similar responses), and the related themes were obtained by gathering the codes under appropriate themes (Buyukozturk et al., 2012). The participants' responses were presented as frequency values in relation to the theme in the tables given in the section of findings. In this respect, the themes regarding the use of mathematical games in the teaching process of the mathematics education course were given as positive themes (+) and negative themes (-). For better clarification, extracts were given in relation to some of the participants' responses. In addition, for the analysis of the data, two field experts coded the data independently. Following this, a reliability study was conducted regarding the codings. In order to determine the reliability of the codings, the formula of Agreement/(Agreement +Disagreement) x 100 suggested by Miles and Huberman (1994) was used. If the value calculated with this formula is 70% or higher, then the codings are considered to be reliable. In the present study, the codings were done for each question separately, and the calculated values were found to range between 75% and 95%. The clues regarding how the themes were obtained were supported with direct quotations in the section of findings. In order to reach consensus, the researchers discussed the codes that they disagreed on. For the analysis of the qualitative data, the pre-service elementary teachers were coded as S1, S2, …, S8.

3. Results

This part first presents the findings obtained via the analysis of the quantitative data and those obtained via the analysis of the qualitative data.

3.1. Findings Obtained via the Attitude Scale

In order to determine whether the training program given within the framework of adidactical situations caused any significant difference between the pre-service elementary teachers' attitudes towards the course of mathematics education in terms of their pretest and posttest results, paired samples t-test for independent groups was applied. The results can be seen in Table 3.

Table 3. *T-test results regarding the ASMEC scores*

	N	X	ss	sd	t	p
Pretest	86	71.69	7.97	85	-2.22	.029
Posttest	86	73.50	7.96			

According to Table 3, the mathematics education course given in the adidactical learning environment caused a statistically significant difference between the pretest and posttest results regarding the pre-service elementary teachers' attitudes towards the courses of mathematics education (t(85)=-2.22, p=.029). This result could be said to be due to the fact that the adidactical situation, one of basic components of TDS, provides environments for mathematics teaching within the framework of the constructivist learning approach.

For the purpose of revealing whether there was a significant difference between the pre-service elementary teachers' attitude scores regarding the courses of mathematics education with respect to their gender, paired samples t-test was applied, and the results can be seen in Table 4.

Table 4. *T-test results for the ASMEC scores with respect to gender*

		N	X	ss	sd	t	p
Pretest	Male	34	72.73	8.45	84	.987	.327
	Female	52	71.00	7.65			
Posttest	Male	34	74.71	7.77	84	1.108	.258
	Female	52	72.71	8.05			

As can be seen in Table 4, the mathematics education given in line with the adidactical situations did not reveal any statistically significant difference between the pretest and posttest scores of the pre-service elementary teachers regarding their attitudes towards the courses of mathematics education with respect to their gender (t(84)=.987, p=.327 and t(84)=1.108, p=.258). In Turkey, the course of Mathematics Teaching I is given to 3rd grade students attending the Department of Elementary School Teaching at universities. The fact that there was no significant difference between the pre-service elementary teachers' attitudes towards the courses of mathematics education with respect to the variable of gender (male and female) might have been because they had gone through similar educational processes.

3.2. Findings Obtained via the Interviews

The results of the content analysis of the data obtained via the semi-structured interviews will be presented in three parts. The first part is related to the factors influential on the pre-service elementary teachers' attitudes towards the courses of mathematics education. The second part will present the influence of the training program designed in line with the constructivist approach on the pre-service elementary teachers' viewpoints about the course of mathematics education. As for the last part, it will present information about the pre-service elementary teachers' use of TDS in their future professional lives.

3.2.1. Attitude towards the course of mathematics education

This part presents the findings obtained in relation to the pre-service elementary teachers' attitudes towards courses of mathematics education determined via their views and the findings regarding the factors influential on their attitudes towards these courses. In the study, the pre-service elementary teachers were asked to state the courses they liked and disliked. Table 5 shows the pre-service teachers' views about the course of mathematics education.

Table 5. *Attitude towards the course of mathematics education*

Attitude	Pre-service teachers	f
Positive	S1, S4, S7, S8	4
Negative	S2, S3, S5, S6	4

Table 5 demonstrates that half of the pre-service elementary teachers had positive attitudes towards the course of mathematics education and that the other half had negative attitudes. This result was found consistent with the quantitative data. The reason is that the number of the pre-service teachers with high levels of attitudes towards the courses of mathematics education and the number of those with low levels of attitudes was the same before the interviews. Below are the views of some of the pre-service elementary teachers about the undergraduate course of Mathematics Teaching I.

A : Which courses among the undergraduate courses do you like and enjoy?

S4 : Mathematics.

A : Why do you like it?

S4 : I don't know. I like to deal with it when I see it.

A : Do you like courses of mathematics education?

S5 : No… because… it is quite difficult.

One of the pre-service teachers, S4, reported that s/he liked mathematics and related courses without giving any reason. Accordingly, it could be stated that S4 liked courses of mathematics education. On the other hand, another pre-service teacher, S5, found mathematics difficult and thus stated that s/he thus did not like mathematics or other specific courses related to mathematics education. Although this question was directed to the pre-service teachers within the framework of the course of Mathematics Teaching I, they responded to the question considering mathematics. Based on this, it could be stated that the pre-service teachers tended to demonstrate a common attitude towards mathematics and other related courses. The fact that the pre-service teachers' attitudes towards the courses of mathematics education were in association with mathematics could be said to reflect their emotional tendencies they had developed via their past experiences in mathematics.

Table 6 presents the causes of the pre-service elementary teachers' attitudes towards the course of Mathematics Teaching I. In Table 6, the positive views about the factors influential on the pre-service elementary teachers' attitudes are shown with the sign (+), the negative views with (-) and those both positive and negative were shown with (+,-).

Table 6. *Factors influential on attitudes towards the course*

Factors	Pre-service teachers	f
Influence of the teacher	S1(+), S2(-), S3(-), S4(+,-), S7(-)	5
Intelligence type	S1(-), S2(+,-), S3(-,+), S8(+)	4
Method of teaching	S2(+), S3(-), S7(+), S8(-)	4
Achievement	S3(-), S5(+,-), S7(-), S8(+)	4
Past experience	S3(-), S4(+), S7(+), S8(+)	4
Activity	S6(+)	1
Lack of learning	S4(-)	1
Personal development	S3(+)	1

The pre-service elementary teachers pointed out that the teacher was the most influential factor on attitudes towards a course. In addition, the intelligence type of individuals, their achievement in courses, their past experiences and the method of teaching were among other important factors. Some of the pre-service teachers' views reflecting the codes in Table 6 are as follows:

S3 : To tell the truth, considering my past education life, I wasn't good at mathematics in my secondary school years. And this still affects me, … I mean I'm not good at it … thus, it doesn't interest me as much as other courses.

S4 : To me, it is because of my childhood. For example, my elementary school teacher tried hard to make me love this math ...

S5 : I like these courses (non-mathematical courses) because … it looks easier to pass these courses, but math is a bit more difficult.

As can be seen in these dialogues, the cause of the negative attitudes towards courses of mathematics education was reported by S3 to include intelligence type and past experiences. Another pre-service teacher, S4, stated that s/he developed a positive attitude towards mathematics thanks to his/her teacher (teacher effect) at elementary school level (past experience). On the other hand, S5 associated his/her attitudes towards a course with his/her achievement or failure in that course.

In the study, the pre-service teachers were asked to state what kinds of changes could be done in relation to the teaching method within the scope of a course to develop positive attitudes towards that course. The pre-service teachers' responses to this question are presented in Table 7.

Table 7. *Suggestions for changing attitudes towards a course*

Suggestion	Pre-service teachers	f
New approaches	S2, S3, S5, S6, S8	5
Relating to real life	S1	1
Good teacher	S4	1
Course materials (textbooks)	S7	1

According to Table 7, most of the pre-service teachers reported that the use of new teaching methods rather than traditional methods of teaching could lead to changes in attitudes towards these courses. Some of the dialogues reflecting the suggestions in Table 7 are as follows:

S2 : They directly provide academic information and force students to memorize that information. For example, gamification … but if they design games, I believe it will be more effective.

S3 : Different things could be done … I am not against presentations but … (against constant use of the same teaching methods)

S4 : A good teacher could have made me love the course.

As can be seen in these dialogues, S2 and S3 thought it was necessary to use modern approaches to teaching to cause changes in attitudes towards a course, while S4 claimed that it was the teacher to influence attitudes towards a course.

3.2.2. The potential of the training program given in accordance with TDS to influence attitudes towards courses of mathematics education

This part presents information about the pre-service elementary teachers' knowledge regarding the constructivist approach before the education given in line with TDS, about their knowledge after the training program and about how the training program changed their attitudes towards the course of mathematics education. Table 8 presents information about the pre-service elementary teachers' knowledge about the constructivist approach.

Table 8. *The pre-service teachers' knowledge about the constructivist approach*

Components	Pre-service teachers	f
Active participation	S4, S5, S7, S8	4
Method-based	S1, S4, S7	3
Student-centered	S2, S3, S5	3

As can be seen in Table 8, the pre-service elementary teachers had too limited knowledge about the constructivist approach, and some of them had not even heard about it (for example, S6). Some of the dialogues reflecting the pre-service teachers' knowledge about the constructivist approach are as follows:

S6 : I don't know anything about it.

S7 : Well, we learned the 5E method in the course of Environmental Education … I think the system at that time before I came to this university, was not the constructive one (high school years).

S2 : As far as I know thanks to our courses related to teaching, it is not a teacher-centered approach but a student-centered approach … this was all I know about the constructivist approach.

S3 : Actually, I didn't have much knowledge about it …

S5 : The student tries to learn on his or her own by being active, doing and living, and the teacher guides the student …. This was what I knew about it.

The dialogues above demonstrate that before the education given in accordance with TDS, some of the pre-service teachers did not have any knowledge about the constructivist approach and that some of them were knowledgeable about this approach thanks to the courses related to teaching within the context of methodology (the 5E method). In addition, some of the pre-service teachers reported that they did not take any education in their past school years (elementary, secondary and high school years) in accordance with the constructivist system. They stated that they heard about this system for the first time at university. Although the constructivist approach was first adopted with the changes done in curricula in Turkey in 2005, this approach cannot be said to be put into practice properly. This was also obvious in the related views of the pre-service teachers.

In the study, the pre-service elementary teachers were asked to evaluate the education given in accordance with TDS, and their views can be seen in Table 9.

Table 9. *Evaluation of the activities designed based on TDS*

Components	Pre-service teachers	f
Positive	S1, S2, S3, S4, S5, S6, S7, S8	8
Negative	-	0

As can be seen in Table 9, all the pre-service teachers were satisfied with the activities designed within the framework of TDS. Below are some of the pre-service teachers' views showing their satisfaction with the education given in accordance with TDS:

S3 ： Yes, of course, I like it. People always like different things.

S4 ： It allowed me to view what we have learned so far from a broader perspective …

S6 ： In the past, I didn't know such games could be designed. And I didn't know that mathematical problems could be embedded in games. Now, I know such games, and they are really good.

All the pre-service teachers mentioned different reasons for their positive views about the activities designed in accordance with TDS. In this respect, some of the pre-service teachers pointed to the teaching approach from a different perspective, while some of them reported that they were amazed at the presentation of the problem embedded in a game.

Although all the pre-service teachers reported generally positive views about the activities applied, it was seen that they had different views about the advantages and disadvantages of these activities. Table 10 presents the advantages and disadvantages of the activities designed in line with TDS. In Table 10, the positive views are represented with the sign (+) and the negative views with the sign (-).

Table 10. *Advantages and disadvantages of the activities*

Components	Pre-service teachers	f
Game context	S1(+,-), S2(+), S3(+), S5(+), S6(+), S7(+), S8(+)	7
Class size	S2(-), S4(-), S5(-), S6(-), S7(-), S8(-)	6
Class grade	S1(-), S2(-), S4(-), S6(-), S8(-)	5
Active participation	S3(+), S5(+), S6(+), S7(+), S8(-,+)	5
Entertainment	S2(+), S4(+), S5(+), S7(+)	4
Reasoning	S1(+), S4(+), S7(+), S8(+)	4
Technology	S2(-), S5(-), S6(-), S8(-)	4
Reinforcement	S1(+), S5(+), S7(+), S8(+)	4
Time	S1(-), S2(-), S8(-)	3
Frequency of usage	S1(-), S5(+), S7(-)	3
Concretization	S1(-), S2(+), S4(+)	3
Communication	S3(+), S8(+)	2
Informative	S4(+)	1
Achievement	S5(+)	1
Seating plan	S8(-)	1
Struggling	S4(+)	1
Encouragement	S3(+)	1
Intelligence development	S1(+)	1
Individualization	S1(+)	1
Different solutions	S1(+)	1

Doing activities	S2(+)	1
Material	S2(+)	1
Group work	S8(+)	1
Adaptation	S1(+)	1

According to Table 10, the advantages of the activities designed in line with TDS were reported by the pre-service teachers to include using the game context, being entertaining, requiring reasoning and ensuring active participation. On the other hand, according to the pre-service teachers, the disadvantages included discipline problem in crowded classrooms, games designed over students' levels and technological deficiencies. The dialogues below reflect some of these components:

S2 : It is now more entertaining … teaching mathematics via games is really important … with the help of these activities, I have learned how to concretize the teaching process. I have also learned   to consider the child's level … I mean you cannot teach a lesson by imposing it, but with the help of gamification, you can let your students do different activities. I mean you can develop new materials. It doesn't have any negative aspects, but if the teacher fails to consider the students' levels, … then it results in a waste of time. In the case of too crowded classrooms, I think it will be a bit more problematic … for example, if you are a teacher at a small village school, you may not have an interactive whiteboard in class.

S3 :   The teacher is expected to involve the students in the learning process. The students will learn on their own regardless of whether they learn correct or wrong things. This is what we have learned via these games … the students were active participants in class … I think it allowed communicating with the students. Also, I believe it was also encouraging for them.

It was seen that the pre-service elementary teachers had positive perceptions regarding the activities carried out within the scope of TDS. In addition, it was found that the environments created in this context included most of the parameters of the constructivist approach.

Another striking issue was that rather than using the activities designed in line with TDS for the purpose of teaching any concept, most of the pre-service teachers wanted to use these activities to internationalize and reinforce the adidactical situations after the teaching process. This is not an intended situation though it seems to be positive when the dynamics of the theory are taken into account. Therefore, this could be an unexpected result obtained in the present study. The reason is that TDS is generally based on the assumption that students can learn the target concept thanks to the designed environment when students do not have enough readiness in relation to a concept to be taught. In the study, while designing the activities, they were developed by taking especially this assumption into consideration.

All in all, the question of how the education given in accordance with TDS influenced the pre-service elementary teachers' attitudes towards the course of mathematics education is of great importance. The dialogues below reflect the pre-service teachers' views about this question.

S1 : My ideas changed just in that way (in a positive way)… my motto is how I can reinforce my students' knowledge and which activities I can use for that purpose. To me, it is quite a different method.

S2 : But, after the lessons, …

A : Anything changed?

S2 : Yes, things changed … now, I am interested more. I liked it.

S3 : Yes, my ideas changed. As I said before, it interests me because I always think about how I can teach something. I believe I will do good things.

S4 : It increased my interest, and this is good.

S5 : Well, I can say … students play games related to these situation theories. For example, I liked the last lesson more.

S6 : You want to solve the problem by playing the game I mean you become more willing to do it.

S7 : It increased my interest. For example, I like math and try hard to learn it. Thus, I liked it because it was better.

S8 : Children are quite enthusiastic about playing games. Thus, they learn subconsciously. To me, it's good for that reason.

A : How did it affect your interest?

S8 : To me, it was positive, and it is really good to be able to apply all these.

It was seen that the activities designed in line with TDS had a positive influence on all the pre-service elementary teachers' interests in the courses of mathematics education. Considering the fact that half of these pre-service teachers had negative attitudes especially towards the courses of mathematics education, the education designed within the framework of TDS could be said to have a great influence on changing their attitudes towards the courses of mathematics education. The fact that the pre-service teachers had positive attitudes towards the courses of mathematics education could be said to be important for their professional development processes in the future when they become teachers.

3.2.3. An Indicator of the Attitude Change Regarding Mathematics Education Courses

This part of the study presents the findings regarding what kind of a teaching approach the pre-service teachers would adopt when they became teachers in the future and whether they wanted to use TDS in their activity designs. In the study, all the pre-service teachers reported that they would design activities in accordance with TDS and use them in future. In relation to this, some of the pre-service teachers' views were as follows:

S1 : I can use it but not in all courses.

S2 : I would like to use it. For a child at that age, everything means playing a game … and, for this, the best theory is TDS.

S3 : Of course, I will use it. For example, I am taking a course which I requires me teach at schools. And I learn many practical things there just as I do in my department. Honestly, …I would like to use it in all courses.

S4 : I will certainly use it.

S8 : Yes, I want to use it. There is a flow, which is very good. Also, … in this method, the teacher has the role of a guide, and the fact that students do all the things on their own is really good for them.

According to these views of the pre-service teachers, they were willing to use TDS in their future professional lives, and they all had different reasons for using it. Lastly, they all reported different limitations to the use of TDS in their future classes.

4. Discussion and Conclusion

The results obtained in the study revealed that the course of Mathematics Teaching I given within the framework of TDS could have positive influence on the pre-service elementary teachers' attitudes towards the courses of mathematics education.

This difference was thought to result from the fact that an adidactical environment, one of the basic components of TDS, is based on the constructivist approach (Artigue, 1994; Laborde, 2007); that it involves a series of phases in teaching mathematical concepts (devolution, action, formulation, validation, and institutionalization); that the students and the teacher have clear-cut roles in these phases; and that the problem is presented in such environments within the context of a game which includes winning and losing (Erdogan & Ozdemir Erdogan, 2013).

Saglam (2014) claims that the affective characteristics of teachers regarding mathematics had an influence on their ways of teaching mathematics. On the other hand, in the present study, it was found that giving the courses of mathematics education to the pre-service elementary teachers based on the student-centered approach in an adidactical environment caused positive changes in their affective perceptions regarding mathematics. In other words, teaching mathematics courses using new approaches caused the pre-service elementary teachers to develop positive attitudes to the courses of mathematics education. As a support to the results obtained in the study, Tsao, (2018) pointed out that mathematics courses given based on the constructive approach developed pre-service teachers' attitudes towards geometry. In another study conducted in a different discipline, Dündar (2018) reported that use of constructive learning environments in teaching the course of Social Sciences developed pre-service teachers' attitudes towards teaching the course of Social Sciences. Based on these studies, it could be stated that pre-service teachers develop positive thoughts about the related discipline as student-centered teaching experiences contribute to pre-service teachers' development and meet their expectations to a certain extent (Osmanoğlu and Oguzhan Dincer, 2018). Also, in one other study in which professional information modules were used, even though a positive change was found in pre-service teachers' attitudes towards mathematics, this change was not at a desirable level when compared to the control group (Fisher et al, 2017). It takes a long time to develop a positive attitude towards any discipline, yet this could be achieved when innovative approaches and well-organized environments are used.

In the present study, it was seen that the pre-service teachers' attitudes towards mathematics education courses did not differ in terms of gender when they were taught mathematics in line with innovative approaches. As a support to this finding, Tabuk (2018) reported that there was no difference in the pre-service teachers' attitudes towards mathematics teaching with respect to gender. Similarly, in related literature, there are many studies which revealed that pre-service teachers' attitudes towards mathematics or geometry did not differ depending on their gender (Çakıroğlu and Işıksal, 2009; Usman, Yew and Saleh, 2019). On the other hand, there are still other studies demonstrating that attitudes towards mathematics differ based on gender (Bhowmik and Banerjee (Roy), 2016). The findings that attitudes towards mathematics change depending on gender are based on two reasons. The first one is related to the biological difference between men and women, and the second one concerns social and environmental factors (Markovits and Forgasz, 2017). In our country, especially in higher education, female students are not disadvantaged in terms of taking education when compared to male students (OECD, 2018). Therefore, the fact that attitudes towards mathematics education courses do not differ with respect to gender could be associated with the fact that pre-service teachers are exposed to the same education process; that they have similar experiences and that they are not subjected to any social or environmental restriction.

In Turkey, the constructivist approach to teaching became prominent in the curriculum of mathematics in 2005 (MoNE, 2005). In addition, the subsequent changes done in the curriculum (MoNE, 2013, 2018) could be said to keep the elements of the constructivist approach in the revised curriculum. The pre-service elementary teachers, who were the participants in the present study, took their high school education at a time when these curricula were in practice. However, it was seen that none of the pre-service elementary teachers mentioned constructivist approaches in relation to the courses they had taken before their university education, and it could even be stated that they were subjected to the traditional teaching methods in their high school years. Also, it was seen that except for a few courses, the pre-service teachers were provided with theoretical information about the constructivist approach during their university education and that they thus had limited knowledge about this approach. On the other hand, it could be stated that designing all teacher training courses (sometimes even different lesson units of a single course) within the framework of constructivist parameters is a field requiring specialization and that such a design is likely to include various sub-dimensions for different courses. In this respect, because concepts in mathematics are abstract as well as because the cumulative property of concepts is of great importance for teaching these concepts (just as it is true for the building blocks of a construction), creating environments in line with the constructivist parameters for mathematics teaching involves certain difficulties. Based on the assumption that activities carried out under the individual's own control lead to longer permanency, it could be stated that conducting more studies with the combination of theory and practice without ignoring these difficulties involved in the teacher training process will help future teachers develop positive attitudes towards the courses of mathematics education (mathematics courses in general). On the other hand, if the theoretical information given at universities is not supported with well-designed practical applications, it is seemingly inevitable to be in a vicious cycle in which the theoretical information does not support the practice. Therefore, as the primary suggestion to be put forward here, it could be stated that not only teaching mathematical concepts via games at all class grades starting from the teacher training process but also creating a flexible class environment for individuals to take an active part in these games could be influential on changing the attitudes towards mathematics. Also, providing individuals with the opportunity to build their mathematical knowledge in such a teaching environment and encouraging educators with the knowledge of providing these opportunities to become active in the teaching process could help change the attitudes towards mathematics.

Another dimension regarding the development of positive attitudes towards mathematics and related courses is the thought that these attitudes can be developed at early ages and that they become rooted in time (Bloom, 1977; Goodykoontz, 2008). In the present study, as mentioned by some of the pre-service teachers, attitudes towards mathematics begin to appear starting from elementary school years and are developed in the process. It is thought that positive changes to be caused in the attitudes of pre-service teachers towards a mathematics course could first help them gain a good perspective regarding mathematics and then allow them to cause positive changes in their students' attitudes towards mathematics. The present study shows that this is possible and provides clues to certain steps to be taken accordingly.

This study discussed how to make use of TDS by investigating whether it was possible to create changes in the participants' attitudes towards courses of mathematics education within the scope of the course of Mathematics Teaching I within the framework of TDS in a limited period of time. In the study, it was seen that teaching mathematics in an environment designed in line with TDS increased all the pre-service teachers' interests in the course. However, it could be considered to be an unexpected result that the pre-service teachers regarded TDS as a tool to be used for the reinforcement and development of positive attitudes after teaching the

concepts via traditional methods of teaching rather than regarding it as a primary approach to teaching these concepts. The reason for this result could be the fact that the pre-service elementary teachers were mostly subjected to the traditional methods of teaching in their high school years and that they might have thus preferred the traditional teaching approach to be their main teaching approach.

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Appendix 1. Interview Questions

1. Which of your undergraduate courses did you enjoy in most? Is there Mathematics among these courses?
   - Why do you like these courses?
2. Which of the courses do you dislike most?
   - Why do you dislike these courses?
   - What kind of changes/arrangements to done in relation to these courses would you make you enjoy?
3. What did you know about the constructivist teaching environments before the TDS activities? Explain, please.
4. Is there any change in your knowledge about the constructivist teaching environments after the TDS activities? Explain, please.
   - What did you enjoy in the teaching environments designed in accordance with TDS?
   - What did you hate in the teaching environments designed in accordance with TDS?
5. Is there any change in your interest in courses of mathematics teaching before and after the TDS application?
   - If so, what has changed?
   - What do you think the factors causing the change(s) are?
6. What king of a teaching approach do you plan to adopt in your future class when you become a teacher?
   - Will you use constructivist approaches?
   - Will you use the theory of didactical situations in your class applications? Why?

THE EFFECT OF INTELLIGENCE AND ACADEMIC SUCCESS ON SELF-PERCEPTIONS OF PRIMARY SCHOOL STUDENTS

Research Article

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THE EFFECT OF INTELLIGENCE AND ACADEMIC SUCCESS ON THE SELF-PERCEPTIONS OF PRIMARY SCHOOL STUDENTS

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Abstract

This study examined the relationship between intelligence levels, self-perception, and the academic achievement of fourth-grade primary school students. The study was carried out with 36 students in a state school in Istanbul, Turkey. A survey was administered with a demographic form containing the students' Turkish and Mathematics course achievement scores and personal information, the Wechsler Intelligence Scale for Children-Revised-WISC-R, and the Piers-Harris Children's Self Concept Scale. The findings indicated that neither self-perception nor the academic achievement is related to gender. Student intelligence scores were strongly related to mathematics scores and weakly related to Turkish scores. Achievement scores for Turkish and mathematics were positively associated with the information subtest scores for long-term memory in the verbal section of WISC-R. Achievement scores for the mathematics course predicted the digit symbol subtest scores (psychomotor coordination and speed) in the performance section of WISC-R. Intelligence and academic success had no significant relationship with the children's self-concepts.

Keywords: Primary education, academic achievement, intelligence, self-concept

1. Introduction

The first four years of education are the phase when the child adapts to the school and acquires basic skills. In primary school, students increase their environmental awareness, improve their literacy skills, socialize, and learn basic rules of living. In the Turkish education system, student scores in their report cards are considered the determining, maybe the most important criterion of success (Güleç & Alkış, 2003). Success is the measure or indicator of how much the individual benefited from specific courses or academic programs in the school environment. However, although academic success can be considered the average score a student achieves in courses in an academic program, it is influenced dramatically by many "non-intellectual" factors (Jamil & Khalid, 2016, Özgüven, 1998). These factors include starting school earlier or later (Küçüker, 2016), form of self-perception (Greven, Harlaar, Kovas, Chamorro-Premuzic & Plomin, 2009), social withdrawal and sense of guilt (Jamil& Khalid, 2016), familial support for the child's personality and socio-cultural development, parents' voluntary participation in school events and positive communication with their children (Şad, 2012), family socio-economic characteristics (Yelgün & Karaman, 2015), and

self-regard (Strassburger, Rosen, Miller, & Chavez, 1990; Keltikangas-Järvinen, 1992; Zuffianò, Alessandri, Gerbino, Kanacri, Di Giunta, Milioni & Caprara, 2013; Di Giunta, Alessandri, Gerbino, Kanacri, Zuffiano & Caprara, 2013; Alyami, Ullah, Alyami, Hill, & Henning, 2017).

The self can be defined as a structure comprised of perceptions, emotions, and thoughts that are the basis of personality and highly significant for a person. The self also includes a person's thoughts about themselves, self-worth, and beliefs regarding their capabilities (Kağıtçıbaşı, 1989; Keltikangas-Järvinen, 1992). Self-perception is a person's ideas about and feelings towards themselves. This is shaped by one's experiences and what one sees around oneself, and is influenced by feedback from significant others regarding one's behaviors. Based on all the feedback, observations, and experiences, a consistent and meaningful whole is formed (Pajares & Schunk, 2001). Receive both academic and social feedback is thus critical for a child's self-development (Kağıtçıbaşı, 1989; Strassburger et al., 1990).

The self-perception of young children is generally positive, which can be explained by their unrealistic positivity. In subsequent phases of life, however, such positive perception changes (Robins & Trzesniewski, 2005). As children reach cognitive maturity, they begin to evaluate themselves using feedback from their social environment. This enables them to assess their social skills and personal characteristics in a more balanced and accurate way. Once children start primary school, they may receive more negative feedback than before from their families, friends, and teachers. This may lead to more negative evaluations of their self-perception. Children with low self-esteem tend to be lonelier in adulthood, more fragile to criticism, and less tolerant of making mistakes. They usually cannot fulfill the responsibilities they take, which makes their feelings of anxiety and discomfort increase (Cevher, 2004). Studies have shown that family, school, and friends are very influential on primary school children and that such factors are critical in the formation of the self-concept (Adana, Arslantaş, & Şahbaz, 2012; Pajares & Schunk, 2001).

Children who have just started school begin to draw conclusions about themselves (Gürses & Kılavuz, 2011; Yaylacı, 2012). According to Erikson, the main virtue to obtain in this period is diligence. Children may attribute diligence or laziness to themselves by comparing themselves to their peers or from their teachers' feedback (Akbaba, 2004). Such comparisons may induce a sense of inferiority and inability as (Gürses & Kılavuz, 2011). Children's sense of achievement will increase if they are supported in their activities, work, or effort to do practical things, are allowed to complete what they start, and are praised and rewarded for the outcomes. Conversely, children may develop an inferiority complex if their parents consider their efforts to do something as "annoying" or just a "disruption" (Elkind, 1978; Yılmaz, 2013). As these children develop, they may show signs like low self-confidence and an inferiority complex in their school life, and come to doubt their abilities. This, in turn, may hinder both academic success and self-perception. Given these risks, the importance of counseling services provided in primary school is clear. Counseling activities to support academic success and the children's personal development can prevent these kinds of problems (Yeşilyaprak, 2007). Academic self-perception, which begins to be shaped during primary school, is the child's perception of their academic proficiency, a concept that can be supported through academic success and positive social relations (Shaffer, 2009). The age of 9 is accepted as the period when childhood ends and adolescence begins. This age group can transform their cognitive potential into academic performance (Shaffer, 2009; Batra, 2013; Stoeger, Steinbach, Obergriesser, & Matthes, 2014, Yavuzer, 2016). Primary school children are considered to have unstable motivation levels and still-formable learning skills. According to Ahmad, Anwar, Anwar, and Bareech (2014), intelligence and success are inseparable. They argue that there is a relationship between intelligence and academic success in that intelligence predicts

academic success but academic success does not predict intelligence (Watkins, Lei, & Canivez, 2007).

Assessing and supporting the intelligence potential of children can help interventions to meet children's developmental needs. Providing the supportive education that children need and that may improve their academic success is an integral part of educational counseling activities. In Turkey, primary school students are expected to use Turkish actively and adequately, to enjoy reading and learning, and to have basic mathematical and verbal literacy skills (Akınoğlu, 2005). Learning Turkish improves not only listening, speaking, reading, and writing but also mental skills such as thinking, understanding, sorting, categorizing, questioning, relating, criticizing, analyzing-synthesizing, and evaluating across texts. It also improves higher-level skills like communication, conscious decision making, and maintaining learning (Şahin, 2007; Durukan, 2015). Mathematics enhances problem-solving, reasoning, establishing relations between different disciplines, logical induction and deduction, as well as being systematic, attentive, patient, and responsible. It also includes basic knowledge and skills necessary for accurately perceiving natural phenomena and developments, and apprehending relationships and gaining control over them. In short, mathematics is a key part of the primary school curriculum (Orbeyi & Güven, 2008).

Because Turkish and mathematics courses strengthen comprehension and basic arithmetic skills, they can positively influence the primary school students' cognitive development and academic success (Ersoy, 2006) as well as their self-concept (Göktaş, 2008; Altun & Yazıcı, 2013; Sarıer, 2016). This study analyzes the relationships between the total Turkish and mathematics course scores of Turkish fourth-grade primary school students (9-year-old age group), their intelligence level, measured by the Wechsler Intelligence Scale for Children and its sub-scales, and their self-perception, measured by the Piers-Harris Children's Self Concept Scale.

The study seeks to answer the following research questions:

1- Is there a sex difference in academic success (Turkish and mathematics grades), intelligence (WISC-R scores), and self-regard (self-concept) scores?

2- Are there significant correlations between academic success (Turkish and mathematics grades), intelligence (WISC-R scores), and self-regard (self-concept)?

3- Does intelligence (WISC-R scores) have a significant effect on academic success (Turkish and mathematics grades)?

4- Do intelligence (WISC-R scores) and academic success (Turkish and mathematics grades) have a significant effect on self-regard (self-concept)?

2. Method

2.1. Research Model

This research employed the relational research method, which analyzes the relationship between two or more variables without intervening in the variables (Büyüköztürk, Kılıç-Çakmak, Akgün, Karadeniz & Demirel, 2008). This study first analyzed the relationship between the Turkish and Mathematics grades of 4th graders as indicators of academic success, their WISC-R scores, and self-concept scores. It then assessed find whether intelligence explained academic success and whether academic success and intelligence explained the self-concept in the children studied.

2.2. Study Group

The research was conducted during the 2016-2017 academic year with 34 fourth-grade students attending a state school in Istanbul, Turkey. Data from one student was excluded for disrupting multidimensional normality, leaving 33 students for further analysis – 15 (45.5%) female and 18 (54.5%) male. The mean age was 9.28 years. The students' Turkish grades were average for the school ($\bar{x}$ = 56.39) whereas their mathematics scores were below average ($\bar{x}$ =52.38). The Piers-Harris Self-Concept Scale scores indicated that the students had an average self-concept ($\bar{x}$ =58.79). Mean scores for verbal ($\bar{x}$ =87.03), performance ($\bar{x}$ =97.67), and full-scale intelligence ($\bar{x}$ =91.64) indicate that the students were of a normal intelligence level.

2.3. Instrument

Demographic Form: This recorded the students' Turkish and Mathematics course grades (average exam scores), and their age and sex.

Wechsler Intelligence Scale for Children-Revised-WISC-R: Developed by Wechsler in 1949, this test can be applied to children between 6 and16 years old. The test consists of two sub-sections, verbal and performance, and 12 sub-tests of the two main sub-sections. The verbal section sub-tests are general knowledge, arithmetic, vocabulary, comprehension, and digit span while the performance section sub-tests are picture completion, picture arrangement, block design, object assembly, coding, and labyrinths. Savaşır & Şahin (1995) developed the first Turkish adaptation of the scale and tested its validity and reliability. The reliability scores for the test in Turkey were.97 for total, .97 for the verbal section, and .93 for the performance section.

Piers-Harris Children's Self-Concept Scale (PHCSCS): This 80-item scale was developed by Piers and Harris in 1964 to measure students' self-concept for the age group 9-16 years. The scale assesses children's emotions, thoughts, and attitudes related to themselves (their selves). Students answer "yes" or "no" to each question to yield a score between 0 and 80. Higher scores indicate that an individual has developed positive emotions and thoughts about themselves whereas lower scores indicate negative emotions and thoughts. The questionnaire can be administered individually or in groups, although group administration requires at least third-grade level literacy skills. Çataklı & Öner (1986) developed the Turkish version of the scale and conducted validity and reliability tests. The reliability scores ranged between .81 and .89 (Öner, 1994). The construct validity was assessed using the test anxiety inventory. The two scales correlated significantly at .01 level.

2.4. Procedure

From 4th graders in a public school in Istanbul, 34 students were selected who had received a score below 50 their Turkish and/or mathematics course. After the parents of the selected students had given their consent, the relevant student details were collected from parents and teachers. The WISC-R tests, which were administered by specialists, took approximately 90 minutes for each student. The Piers-Harris Children's Self-Concept Scale was administered with the assistance of the school's psychological counselor during class hours. This scale took up to 10 minutes to complete. For students with lower academic success, the school counselor informed their parents and directed students to the counseling and research center if deemed necessary.

2.5. Data Analysis

Multivariate regression analysis was used to explain the relationship between the independent and dependent variables. Several procedures were conducted before the analysis to meet the assumptions of multivariate regression analysis. First, the missing values were identified for each variable (Çokluk, Şekercioğlu & Büyüköztürk, 2014). However, no data was missing in this case. Kolmogorov-Smirnov and Shapiro-Wilk analyses were conducted to test the normality of the distributions. These indicated that the distributions were not significantly different from the normal distribution curve (p>.05). Scatter plots were used to assess linearity. Horizontal and vertical skewness values were assessed and the skewness and kurtosis values for all distributions varied between -1 and +1. To determine multicollinearity, Tolerance, and VIF (Variance Inflation Factor) values were evaluated. The tolerance value was smaller than 1 while the VIF value was less than 10. These values indicated there was no multicollinearity problem (Çokluk, 2010). Mahalanobis distances were analyzed to determine multivariate extreme values. One observation with an extreme value that caused multicollinearity was excluded from the analysis. Subsequent analyses were conducted on 33 participants. All these operations, and the following Pearson Product-Moment Analysis, Mann-Whitney U, Rank Difference Analysis, and stepwise multivariate regression analysis were conducted using SPSS 21.0 software.

3. Results

This section is presented in the same order as the purposes section above. The first research question was, Is there a sex difference in academic success (Turkish and mathematics grades), intelligence (WISC-R scores), and self-regard (self-concept) scores? Table 1 shows the analyses conducted to answer this question.

Table 1. Results of the Mann Whitney-U Analysis Conducted to Establish whether the Variables Vary Based on the Sex Variable

	Sex	N	$\overline{x}_{sira}$	$\sum_{sira}$	U	Z	p
Turkish	Girl	15	17.8	267	123	-0.434	0.664
	Boy	18	16.33	294			
Mathematics	Girl	15	17.33	260	130	-0.181	0.857
	Boy	18	16.72	301			
Self-concept	Girl	15	16.6	249	129	-0.217	0.828
	Boy	18	17.33	312			
General Knowledge	Girl	15	15.23	228.5	108.5	-0.979	0.327
	Boy	18	18.47	332.5			
Similarities	Girl	15	15.17	227.5	107.5	-1.005	0.315
	Boy	18	18.53	333.5			

Arithmetic	Girl	15	16.23	243.5	123.5	-0.42	0.674
	Boy	18	17.64	317.5			
Comprehension	Girl	15	14.53	218	98	-1.346	0.178
	Boy	18	19.06	343			
Digit Span	Girl	15	13.73	206	86	-1.8	0.072
	Boy	18	19.72	355			
Verbal IQ	Girl	15	14.2	213	93	-1.521	0.128
	Boy	18	19.33	348			
Picture Completion	Girl	15	16.6	249	129	-0.219	0.826
	Boy	18	17.33	312			
Picture Arrangement	Girl	15	16.47	247	127	-0.293	0.769
	Boy	18	17.44	314			
Block Design	Girl	15	18.7	280.5	109.5	-0.929	0.353
	Boy	18	15.58	280.5			
Object Assembly	Girl	15	18.1	271.5	118.5	-0.601	0.548
	Boy	18	16.08	289.5			
Coding	Girl	15	17.77	266.5	123.5	-0.42	0.675
	Boy	18	16.36	294.5			
Performance IQ	Girl	15	17.87	268	122	-0.471	0.638
	Boy	18	16.28	293			
Full-scale IQ	Girl	15	15.73	236	116	-0.688	0.492
	Boy	18	18.06	325			

As seen from Table 1, the Mann-Whitney U analysis indicates there was no significant variation in any of the variables based on sex (p>.05). Thus, sex was not significantly correlated with academic success in this sample.

The second research question was, Is the correlation between academic success (Turkish and mathematics grades), intelligence (WISC-R scores), and self-regard (self-concept) significant? Table 2 shows the analyses conducted to answer this question.

Table 2. Correlations between WISC-R scores, Self-concept, and Turkish and Mathematics Grades

		Turkish	Mathematics	General Knowledge	Comprehension	Verbal IQ	Coding	Full-scale IQ
Turkish	r	1	.802**	.479**	0.283	0.294	0.29	0.256
Mathematics	r	.802**	1	.589**	.351*	.452**	.436*	.471**
Self	r	0.178	0.307	0.250	0.202	0.100	0.097	0.117
* p<.05, ** p<.001								

As shown in Table 2, the results of the Pearson Product-Moment analysis indicate a highly significant positive correlation between Turkish and Mathematics grades (r=.802; p<.001) and a significant positive correlation between Turkish grades and the WISC-R General Knowledge sub-section (r=0.479; p<.001). However, no significant correlation was found between Turkish grades and scores for Similarities (r=0.242; p>.05), Arithmetic (r=0.052; p>.05), Comprehension (r=0.283; p>.05), Digit Span (r=-0.055; p>.05), Verbal IQ (r=0.294; p>.05), Picture Completion (r=-0.256; p>.05), Picture Arrangement (r=0.051; p>.05), Block Design (r=0.117; p>.05), Object Assembly (r=0.200; p>.05), Coding (r=0.290; p>.05); Performance IQ (r=0.113; p>.05), and Full-scale IQ (r=0.256; p>.05).

There were significant positive correlations between mathematics grades and WISC-R sub-section scores for General Knowledge (r=.479; p<.001), Comprehension (r=0.283; p<.001), Verbal IQ (r=0.294; p<.001), Coding (r=0.29; p<.001), and Full-scale IQ (r=0.256; p<.001). However, there was no significant correlation between Turkish grades and Similarities (r=0.262; p>.05), Arithmetic (r=0.299; p>.05), Digit Span (r=0.83; p>.05), Picture Completion (r=-0.025; p>.05), Picture Arrangement (r=0.113; p>.05), Block Design (r=0.294; p>.05), Object Assembly (r=0.183; p>.05), or Performance IQ (r=0.306; p>.05).

No significant correlations were found between Self-concept and Turkish grades (r=0.178; p>.05), Mathematics grades (r=0.307; p>.05), General Knowledge (r=0.250; p>.05), Similarities (r=-0.052; p>.05), Arithmetic (r=0.168; p>.05), Comprehension (r=0.202; p>.05), Digit Span (r=-0.308; p>.05), Verbal IQ (r=0.100; p>.05), Picture Completion (r=0.104; p>.05), Picture Arrangement (r=-0.056; p>.05), Block Design (r=0.229; p>.05), Object Assembly (r=-0.051; p>.05), Coding (r=-0.097; p>.05), Performance IQ (r=0.067; p>.05), or Full-scale IQ (r=0.117; p>.05).

The third research question was, Is the effect of intelligence (WISC-R scores) on academic success (Turkish and mathematics grades) significant? Tables 3, 4, and 5 show the analyses conducted to answer this question.

Table 3. The Relationship of WISC-R Verbal Sub-sections to Turkish grades

Model	Variables	ß	Unstandardized Error	Standardized ß	t	p
Step 1	**Constant**	35.745	7.078		5.05	0.000
	General Knowledge	3.724	1.225	0.479	3.039	0.005
F = 9.235; p<.05, R = .479; R$_2$ = .230						

Table 3 shows the results of the stepwise regression analysis conducted to find whether the effects on Turkish grades of WISC-R verbal sub-dimensions (General Knowledge,

Similarities, Arithmetic, Comprehension, and Digit Span) are significant. The analysis of variance result (F= 9.235; p<.05) shows that the General Knowledge score significantly explains the variance in Turkish grades. General Knowledge scores explained 23% of the variance in Turkish grades (R^2= .230; p<0.001). The standardized ß coefficient indicates that a 1-unit increase in General Knowledge scores increases Turkish grades by 0.479 points.

The result of the multiple regression analysis conducted to determine whether the effect on Turkish grades of WISC-R performance sub-dimensions (Picture Completion, Picture Arrangement, Block Design, Object Assembly, and Coding) was not significant (F=1.122; p>.05).

Table 4. The Effect of WISC-R Verbal Sub-dimensions on Mathematics grades

Model	Variables	ß	Unstandardized Error	Standardized ß	t	p
Step 1	Constant	28.720	6.078		4.725	0.000
	General Knowledge	4.267	1.052	0.589	4.055	0.000
F= 16.44; p<.0.00, R= .589; R^2= .347						

Table 4 shows the results of the stepwise regression analysis conducted to find whether the effects on mathematics grades of WISC-R Verbal Sub-dimensions (General Knowledge, Similarities, Arithmetic, Comprehension, and Digit Span) were significant. The analysis of variance result (F= 16.44; p<.0.001) shows that General Knowledge scores significantly explain the variance in mathematics grades. That is, General Knowledge scores explain 34.7% of the variance in mathematics grades (R^2= .347; p<0.001). The standardized ß coefficient indicates that a 1-unit increase in General Knowledge scores increases mathematics grades by 0.589 points.

Table 5. The Effect of WISC-R Performance Sub-dimensions on Mathematics grades

Model	Variables	ß	Unstandardized Error	Standardized ß	t	p
Step 1	Constant	8.078	6.078		.489	0.000
	Coding	13.674	1.052	0.436	2.699	0.011
F= 7.282; p<.05, R= .436; R^2= .190						

Table 5 shows the results of the stepwise regression analysis conducted to find whether the effects on mathematics grades of WISC-R performance sub-dimensions (Picture Completion, Picture Arrangement, Block Design, Object Assembly, and Coding) were significant. The analysis of variance result (F= 7.282; p<.05) shows that only Coding scores significantly explained the variance in mathematics grades. Coding scores explained 19% of the variance in mathematics grades (R^2= .190; p<0.001). The standardized ß coefficient indicates that a 1-unit increase in Coding scores increases mathematics grades by 0.436 points.

The fourth research question was, Is the effect of intelligence (WISC-R scores) and academic success (Turkish and mathematics grades) on self-regard (self-concept) significant? The multiple regression analysis results indicated that Turkish and mathematics grades have no significant effect on self-concept (F=1.798; p>.05). Verbal, performance, and full-scale IQ scores also had no significant effect on self-concept (F=.605; p>.05).

4. Discussion

The study's findings indicate that there is no correlation between gender, and self-perception or academic success among the fourth-grade students sampled here. Intelligence scores were highly correlated with mathematics grades but weakly correlated with Turkish grades. However, neither of these scores were significantly correlated with self-concept. Turkish and mathematics scores predicted the general knowledge sub-test scores of the WISC-R verbal section, which operationalizes long-term memory, while mathematics course scores predicted the coding sub-test (psycho-motor coordination and speed) of the performance section. Intelligence and academic success had no significant effect on the children's self-concept.

Like most previous studies, this study also found that self-perception and intelligence scores do not differ by sex. Akuysal-Aydoğan and Deniz (2012) found that self-esteem levels of primary school phase II students do not vary by sex. Çakmak, Şahin, and Demirbaş (2017), and Seçer, İlbay, Ay and Çiftçi (2012) also found that self-esteem does not vary by sex for primary school students. Kanay (2006) found no sex differences in the self-concept of children aged 9-13 years diagnosed with ADHD. Some studies on primary school students have, however, found that self-esteem levels of schoolgirls were higher than those of schoolboys (Kılıç-Duran, 2007; Yılmaz, Yiğit, & Yurt, 2012; Çelik, 2011; Yılmaz, Yiğit, & Kaşarcı, 2012; Göktaş, 2008).

Cornwell, Mustard and Van Parys (2013) analyzed whether girls and boys of different racial categories (white, black, and Spanish) differ in the language (reading), mathematics, and science scores. They found no difference in terms of the exam scores. However, although the boys' in-class performance was as good as that of girls, teachers evaluated boys less favorably; the girls' supposedly better in-class behavior positively influenced teachers' grading of girls. From a meta-analysis of 15,042 published articles, Voyer and Voyer (2014) concluded that schoolgirls' language scores but not mathematic scores were significantly better than those of schoolboys. From an international meta-analysis, Else-Quest, Hyde, and Linn (2010) found no significant difference in academic success between girls and boys. Lavy and Schlosser (2007) found that primary school academic success, independent of sex, was influenced by friendships and relations with the teacher. Göktaş (2008), and Erkman, Caner, Sart, Börkan, and Şahan (2010) established that the more students thought that their class teacher loved them, the higher were their academic self-esteem and success. From a longitudinal study of 17,565 students from 994 schools, Husain and Millimet (2009) concluded that, until the 4th grade, schoolboys were more successful in mathematics and schoolgirls in language courses. After 4th grade, however, these sex differences disappear.

Kaya and Oğurlu (2015) analyzed the relationship between self-esteem, and intelligence and academic success in 127 adolescent students. Whereas there was a highly significant correlation between intelligence and academic success, the correlation between self-esteem and academic success was not significant. Watkins and friends (2007) argue that there is a relation between intelligence and academic success in that intelligence affects academic success whereas academic success does not influence intelligence. Yücel and Koç (2011) found that a positive attitude towards mathematics courses predicted 16% of the variance in academic success for both schoolgirls and schoolboys. The regression model showed that one-unit increase in attitude scores predicted a .07-point increase in mathematics grades (in a 5-point grading system).

In the present study, intelligence and academic success had no significant effect on children's self-perception. In contrast, many previous studies have reported a significant positive correlation between the academic success and self-esteem of primary school students (Yılmaz, Yiğit, & Yurt, 2012; Yılmaz, Yiğit, & Kaşarcı, 2012; Göktaş, 2008; Pajares, Britner

& Valiante, 2000; Rahmani, 2011; Hay, Ashman & Van Kaayenoord, 1998; Harper & Purkey, 1993; Hoge & Renzulli; 1993; Guay, Marsh & Boivin, 2003; Cvencek, Kapur & Meltzoff, 2015). Studying junior boarding school students, Seçer et al. (2012) found that students with higher academic success had significantly higher levels of self-esteem than students with average and lower academic success levels. From a meta-analysis of 62 studies conducted in Turkey between 2000 and 2015, Sarıer (2016) concluded that the critical factors influencing students' academic success are socio-economic conditions, self-efficacy, and motivation. Pullmann and Allik (2008) found that academic self-esteem was a crucial predictor of academic success in 4,572 primary students.

After analyzing the results of this study, we can conclude that sex has no significant effect on intelligence level, academic success, and self-perception in the primary school students sampled here. This finding particularly helps in evaluating nine-year-old fourth-grade students and planning educational and personal guidance services, ranging from organizing in-class activities to friendship building. This preadolescent age group could participate in both individual and group guidance activities and easily support each other.

Other noteworthy findings are that long-term memory and verbal intelligence scores correlated with success in Turkish and mathematics while sub-test scores for comprehension and coordination speed correlated with success in mathematics. When interpreting the tests for parents and guidance centers, psychometrists assessing children's intelligence potentials can capitalize on these findings, keeping in mind that memory, reasoning, and verbal intelligence scores are correlated with academic success. Further research to evaluate the correlations between performance-assessment tests and success in various courses can guide those who work in this area. This study's findings indicate that preparation for courses like mathematics and Turkish should be reviewed regarding the preparation of the Turkish high school entrance exam. Individual education programs can be prepared, and the students' academic success can be supported according to the characteristics of the children. The lack of a significant relationship between self-perception and academic achievement in this study contradicts the findings from many previous studies (Yılmaz, Yiğit, & Yurt, 2012; Yılmaz, Yiğit, & Kaşarcı, 2012; Göktaş, 2008; Pajares, Britner & Valiante, 2000; Rahmani, 2011; Hay, Ashman & Van Kaayenoord, 1998; Harper & Purkey, 1993; Hoge & Renzulli; 1993; Guay, Marsh & Boivin, 2003; Cvencek, Kapur & Meltzoff, 2015) It can be concluded that the appropriate interventions to support children's academic achievement can benefit more from education and develop a psychologically more resistant structure. This study only used data taken from primary school 4th graders. Diversification of the findings with data from students of different age groups would enable children who are developing typically or atypically to be properly evaluated and their academic success predicted more accurately.

This study also found that intelligence and academic success have no significant influence on self-perception, which contradicts previous research findings. This result may be explained by the size and age of the sample. Therefore, the result should be reevaluated with larger samples of students from the same age group. Another possible explanation for the finding is that children in this preadolescent age group focus more on their friendships, and do not yet feel the pressures of challenging exams, such as the high school entrance examinations, or their parents' expectations. The finding may, therefore, be useful in evaluating nine-year-old schoolgirls and schoolboys. It can also help teachers in commenting about and motivating 3rd and 4th graders when meeting with their parents and for performing in-school guidance services.

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PROJECT SCHOOLS AS A SCHOOL-BASED MANAGEMENT MODEL

Research Article

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PROJECT SCHOOLS AS A SCHOOL-BASED MANAGEMENT MODEL

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Abstract

Education is a very expensive investment with high opportunity costs. Efforts for attaining schools with intended quality top the agenda of world nations' education plans and programs. Turkish Ministry of National Education has also made several reforms to increase the quality of education. The latest reform made in the field of educational management model has been the project schools developed with various innovations. Including school principals into the teachers' selection process can be regarded as the new aspect of school-based management. Sharing authority to choose teachers with school principals is a brand new approach for the Turkish National Education system. This study aims to detect reflections of project schools' structural and managerial features in practice and depends on the qualitative method, including observation and interviewing techniques. The research sample comprises 15 Imam Hatip High Schools located in Istanbul in 2018-2019 Education Year and 23 teachers working in these schools. "Semi-structured Interview Questionnaire" was utilized for scaling. According to research results, we conclude that teachers in project schools are satisfied with the new education model. There seems to be a total increase in teachers' efficiency in addition to higher teacher performances, due to the teams built under the leadership of school principals.

Keywords: Project School, School-Based Management, Leadership, Teamwork

1. Introduction

Around the world, there is the growing recognition that teacher agency and professional influence are critical components in the pursuit of school and system improvement (Harris & Jones, 2019). Since the operation of traditional schools has been unable to meet the demand for high-quality school education, the trend of school reform has been shifted from "maintenance" to "performance" (Lu & Lin, 2016). Teamwork, learning organization in particular, constitutes the backbone of management approaches such as total quality management (Elma, 2002). When teachers work together on a clear and common set of shared goals, there can be a lasting and significant impact on learner outcomes (Sharratt, 2019). As the teams are formed, complementary skills and abilities exceeding those of any members of an organization arise. Communication increases and new information is shared within the team. A power (synergy) unleashes equal to or greater than the sum of team members. The magical word of teamwork is synergy (Karslı, 2004). One of the required conditions for effective teamwork is the presence of influential leadership within a team. Although teamwork is a product of holistic approach, its success largely depends on the effective leader of the team. The leader, as the individual who guides the team, ensures team awareness and spirit, attains power from team members' performances and guiding that

power to achieve team targets, contributes significantly to the team (Elma, 2002), (Ramberg, Brolin Låftman, Fransson, & Modin, 2019).

The Turkish Ministry of National Education has started to implement a new model that attaches great importance to teamwork in school management through project schools (hereafter referred to as PS). The most important difference distinguishing these schools from others is the fact that managers and teachers assigned to these schools are selected with a different method. The PS principal has been given the authority to build his/her own team. Besides, the principal's assignments are to be exempted from the prevailing regulations. Also, it is not allowed in these schools to assign managers and teachers through first assignment or change of working place. The school manager is also furnished with the authority to select both his/her deputies and teachers and review their performances (MEB, 2014). That very authority together with other managerial features makes PS a new and innovative model in the Turkish National Educational System. It can be predicted that this new management model will be sustainable and even popularized if PS teachers present a good teamwork under an effective education leader and these schools contribute to society.

1.1 Project-Based Learning and Project School

Project-based learning is a systematic teaching and learning method, which engages students in complex, real-world tasks that result in a product or presentation to an audience, enabling them to acquire knowledge and life-enhancing skills (Chen & Yang, 2019). The philosophy of project-based learning considers that learning is more engaged when triggered by a student's "I need to know" than by a teacher's "because you should know" (Lenz, Wells, & Kingston, 2015). The core of project-based learning is the project itself. Project is the word that distinguishes project-based learning from other instructional approaches, and this can be defined as "an act of creation over time", involving students in a constructive investigation (Chen & Yang, 2019).

Project school is defined as the school established at home and abroad within the framework of cooperation agreements with domestic/foreign institutions/organizations or countries, implementing certain educational reforms and programs together with the schools and institutions conducting national or international projects. The key distinctive features of the PS are as follows:

1) It accepts students with LGS (Highschool Entrance Exam) scores. The class size is 30.

2) The length of service of managers and teachers is 4+4 years, 8 years in total.

3) The school principal is given the authority and the right to select other managers and teachers and review their performances.

4) Multiple national/international education programs and projects are implemented. (i.e., IB, IGCSE, International Baccalaureate, Language Education Through Preparatory Classes, Physical Sciences and Social Sciences Education Programs)

5) It has an advisory board consisting of academicians and members of non-governmental organizations.

6) Foreign national teachers can be assigned for foreign language education.

7) At the end of each academic year, the school manager furnishes a report including his reviews and follow-ups as well as his recommendations for the next year and presents it to the Ministry of National Education (MEB, 2016).

Moreover, PS have top-level physical infrastructure (i.e., modern classrooms, physical and social sciences laboratories, language and technology laboratories, library, indoor and outdoor sports facilities, music and art workshops, cafeteria and boarding house) that enables various academic, social and sports activities.

PS introduces a new and different management and education model to the Turkish National Education system. The adopted different education models (intensive foreign language, physical sciences or social sciences programs), the desire to integrate with the international education society (IB, IGCSE programs) and the authority and resources granted to the school management (building teaching staff, furnishing reports, advisory board) are all regarded as steps for establishing a more efficient school.

1.2 School-Based Management

Decentralising major decision-making authority to the school level has been a mantra in international education development discourse and practices for some time. Such reform is often described as school-based management (Okitsu & Edwards, 2017). It is argued that by decentralizing decision-making authority and responsibility for school operations from the federal level to local stakeholders, these decisions can better reflect local needs and priorities leading to improved student outcomes (Santibañez, Abreu-Lastra, & O'Donoghue, 2014). School-based management has frequently been proposed as a way of making schools more productive in both developing and developed countries (Edwards Jr. & DeMatthews, 2014), (Ganimian, 2016). Cross-country evidence using international student achievement tests show that students perform better in countries with higher levels of school autonomy in process and personnel decisions (Han, 2018). Among other outcomes, it is generally expected that, school-based management, in addition to strengthening the accountability of the teacher, which in turn will lead to better student learning (World Bank, 2004). Fostering a school governance structure that enables higher accountability and better use of resources is one of school-based managements' key tenets (Santibañez et al., 2014).

This is the school-based management model on academic autonomy, shared decision making, expanded authority and responsibilities of school managers acknowledging schools as the basic decision-making unit (Güçlü, 2000), (B. J. Caldwell, 2005). In the school-based management, the manager is the central figure and not only the extent of his/her responsibilities but also his/her accountability is expanded (B. Caldwell, 1994), (Oswald, 1995). In addition influence, role and accountability of principals and teachers will increase in management and administration of the school better than the traditional way (Dunlap & Goldman, 1991). This precisely means additional workload, and even risk management and administrative accountability of principals and teachers (Vally & Daud, 2015). Robertson (1995) proposes the theoretical framework of school-based management or theory of change process school-based management. This model is in Figure 1:
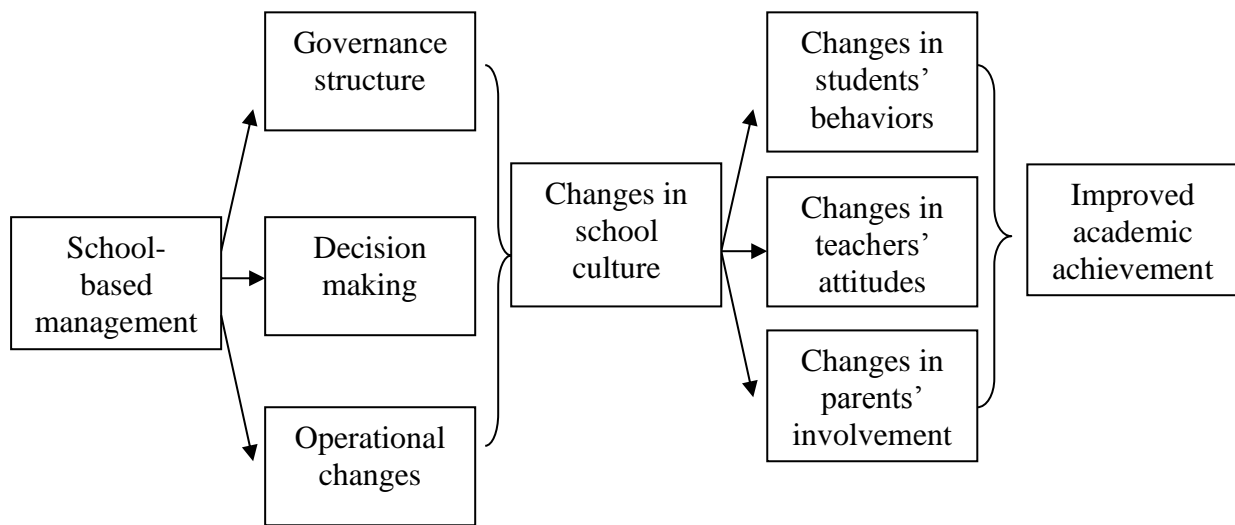
Figure 1: School-based Management Model

This model proposes that changes in governance structure, the decision-making processes and the way school operates will predict changes in then school culture, which will then lead to changes in behaviors (e.g., student attendance) and attitudes of actors involved (e.g., teachers' attitudes, parent involvement). These changes in behaviors and attitudes should lead to improved school quality and ultimately improved academic achievement(Robertson, 1995).

School-based management provides an environment for a school organization compatible with the premises and student needs and positions the student in the center of education. Thus, it helps to pervade "our school" approach, maintains the participation of parents in the education process, establish bonds with the society and build organic relationships with the school's surrounding (Santibañez et al., 2014). Besides, it is anticipated that the school-based management would increase staff commitment to the school and staff participation in school activities and help to develop better relations between the students and the staff (Karlsen, 2000), (Güçlü, 2000).

2. Method

2.1 Research Model

This research is made according to the qualitative research method. The qualitative research method covers a process revealing perceptions and facts in a natural and inclusive manner aiming at understanding human life styles, behaviors, organizational structures and social change by utilizing data gathering methods such as observation, interview and document analysis (Yıldırım & Şimşek, 2016).   In this part of the research, "semi-structured interview questionnaire" was delivered to the participants. The research model is shown in Figure 2:

Open-ended questions	• Designating pre-group • Preparing open-ended questions
Preview repository	• Forming pre-view repository • Making content analysis
Semi-structured interview questionnaire	• Receiving expert opinion • Preparing semi-structured interview questionnaire
Observation and Interview	• Interviewing participants • Making observations
Analysis and Interpretation	• Making content analysis • Interpreting data

Figure 2: Research model

2.2 Question Used In Research

What do teachers and managers working in Project Imam Hatip High Schools think about PS in terms of its structural and managerial features as well as School Principal's authority to build his/her own team?

2.3 Research Population and Sample

The research population consists of all 55 Imam Hatip High Schools (or Religious Vocational High Schools) which are PS, located in Istanbul in 2018-2019 Education Year. The research sample, however, comprises 15 schools randomly selected from 55 project Imam Hatip High Schools and 23 managers and teachers working in these schools.

23 managers and teachers have participated in the research. The demographic characteristics of research participants are shown in Table 1:

Table 1: The demographic characteristics of research participants

	Variable	N	%
Duty	Teacher	14	60
	Manager	9	40
Gender	Female	11	48
	Male	12	52
Educational Status	Bachelor's Degree	13	57
	Master's Degree	10	43
Length of Service in MEB (Ministry of National Education	5-9	9	40
	10-19	7	30
	20+	7	30
Length of service in the current school	1-5	18	78
	6-10	3	13
	11+	2	9
TOTAL		**23**	**100%**

9 of research participants are managers and 14 of them are teachers. When we look at the gender variable, we see 10 female and 13 male. 10 of them have a master's degree and 13 of them have a Bachelor's Degree. It can be said that variables present a balanced distribution.

The same applies in the participants' length of service in MEB (Ministry of National Education). When it comes to the participants' length of service in their current schools, we see that 78% of participants are in their first five years. This can be attributed to the fact that PS is newly opened. Length of service in MEB and in current schools presents us with two important opportunities for understanding the current situation:

1) All participants' length of service in MEB is more than 5 years. This shows that participants have worked in other schools before. That allows them to make a better comparison between their old and current workplace environment.

2) Because 22% of participants have been working in PS for more than 5 years, it allows them to compare their school's status before its inclusion to the PS with the current status.

2.4 Data Collection Instrument

Before preparing semi-structured interview questionnaire, open-ended questions were asked to 5 participants who have similar characteristics with the research group. The pre-view repository is formed with the answers given to these questions. The data gathered from this repository were assessed through content analysis and used a database for semi-structured interview questionnaire. After receiving opinions from Education Management experts, a semi-structured interview questionnaire with 4 questions was formed. Here are the questions addressed to the participants in the semi-structured interview questionnaire:

1) What are your thoughts about the contribution (if any) of PS structural and managerial features as well as its organizational climate to its turning into an "efficient school"?

2) How important is the PS school principal's "efficient leadership characteristics" for the school's effectiveness? *(Can you give examples if there are any?)*

3) To what extent do the PS "physical infrastructure facilities" affect on its being an effective school?

4) To what extent do the national/international projects applied in PS contribute to its being an effective school? *(Can you give examples if there are any*?)

2.5 Collecting Data

Data collection was done in Istanbul, on the dates between 02/01/2019 and 08/03/2019. In the research, interview and observation methods were used. We made appointments with participants before the interviews. Semi-structured interview questionnaires were sent to all participants before these interviews. In all of the interviews, written approvals were received from participants. Also, interviews were recorded and written notes were taken during those interviews. Interviews lasted 16 minutes the least and 53 minutes the most. Total time of the interviews was 386 minutes with an average time of 27 minutes. Written notes taken during the interviews, voice recordings and written answers gotten from the participants were all transcribed and subjected to content analysis. Also, we observed the managerial acts, school climate, organizational behaviors, physical facilities and contents of applied projects, and gathered detailed information on these mentioned factors.

2.6 Data Analysis

Data analysis was based on content analysis. Content analysis is a method used for gathering similar data within the scope of certain concepts to be able to explain them. It is also for interpreting the collected data by organizing them in such a way that the reader can understand. One of the techniques utilized in the content analysis method is coding. Coding refers to denomination of parts creating a meaningful whole in itself with descriptive words or phrases by a researcher(Yıldırım & Şimşek, 2016). Themes and codes were formed for this research by evaluating participants' answers to the semi-structured interview questionnaire.

Qualitative researches differ from quantitative researches in terms of their targets and structural design. Thus, validity and reliability criteria vary across quantitative and qualitative research methods (Krefting, 1991). So, several models are developed in which criteria are categorized according to the research types in concern. One of these models is Lincoln and Guba's model (1985) presenting 4 criteria (Lincoln & Guba, 1985). Table 2 shows this model:

Table 2: Validity and Reliability Model

Criteria	Qualitative Research	Quantitative Research
Truth Value	Credibility	Internal Validity
Generalizability	Transferability	External Validity
Consistency	Dependability	Reliability
Neutrality	Confirmability	Objectivity

Table 3 shows what we did to achieve credibility and reliability in data analysis for this research:

Table 3: Applied Data Validity and Reliability Procedure

Credibility	1. Data collection, scaling and research method were well structured. 2. Organizational diversity is provided by selecting schools with different student and teacher profiles. 3. The research is based on participant's voluntariness. Participants were informed prior to interviews. 4. Questions were re-structured by means of a pilot scheme. 5. Data Conformability was provided by sharing them with the participants.
Transferability	1. All interview data were recorded after receiving participant approvals and the quotations were entirely based on voice recordings. 2. Details were attained by taking notes during the interviews. 3. Recording, taking notes and observation were all made in the natural environment, i.e. in schools. 4. All recordings were transcribed and then combined with the taken notes. 5. Transcribed data were quoted directly, without making any changes.
Dependability	1. Research time and place were shared. 2. The demographic characteristics of participants were explained. 3. The phases and details of study were expressed to allow research repetition. 4. Expert reviews were received.
Confirmability	1. Participation bias was avoided with the help of expert views during the preparation scales for data collection. 2. We paid strict attention to select participants who did not know the researcher before. 3. To avoid participant reaching a consensus with the researcher, we organized focus group meetings. 4. To preserve social distance with participants, interviews were made in the school environment.

3. Findings

In this research, managers are coded from M1 to M9 and teachers from T1 to T14. Themes and codes are formed according to the participant answers to four questions in the semi-structured interview questionnaire. Based on them, 10 codes were created under 3 themes in total. Both the observations made during the interviews and the views of participants revealed that 7 codes out of 10 have a positive effect on school effectiveness and teachers' efficiency while 3 of them have negative effects. We have given both the code frequencies and participants' views in the research.

3.1 The Effect of PS Features on School Effectiveness (1. Theme)

Attaining a more effective school and more efficient education is the ultimate aim of PS. Therefore, PS is equipped with different privileges in terms of structural and managerial features, even to be superior to other schools. According to teachers' views those features increase school effectiveness and teachers' performances to a large extent. While organizational attraction and positive organizational climate within the first theme affect school effectiveness and teachers' efficiency in a positive manner, the test anxiety has negative effects. 3 codes that falls under the first theme are shown in Table 4:

Table 4: The Effect of PS Features on School Effectiveness

Codes	Definition	Effect	Participants	N	%
Organizational Attraction	PS structural features making the school attractive for teachers and students.	Positive	T4, T5, T6, M3, M4, T8, M7, M8, T2, T3, M9	11	48
Positive Organizational Climate	The satisfaction of students and teachers for being in PS having a positive effect on their working and educational life	Positive	T14, T2, M3, M5, M8, T5, T8, T3, M7	9	40
Test Anxiety	The test anxiety arising from getting into a good university having a negative effect on project works in PS.	Negative	M2, M8, M1, T9, T10, M3	6	26

3.1.1 Organizational Attraction

PS is an attraction center for teachers and students. First of all, this is because these schools admit students through an exam. A student who gets into a PS because of his/her earned success in LGS (High School Entrance Exam) also means that he/she has already gained self-discipline in studying. Teachers have intense feelings about teaching students who have self-discipline in studying since they feel more job satisfaction. *T4: "I am happy here because I can do my job better. T8: "The most important factor in PS is the quality, high-profile of its students." T2: "The best aspect of PS is its students with high academic success. That increases job satisfaction in PS." M9: "The best aspect of PS is that students with the same levels are educated together. That increases a teacher's job satisfaction. The most enjoyable period of my career had been in a super high school that lasted 6 months, now I experience it again in PS. PS also increases teachers and students success."*

The school not only appeals to teachers but also to students and parents. *T5: "The high-level profile of students has made me love teaching again. My children are also going to PS, I am also glad as a parent."* M3: "*PS has helped students love the school. It has also had a substantial positive effect on the perception of Imam Hatip High School within the society." T3: "Students' being together with their peers who have the same educational levels presents a favorable situation. That helps teachers feel more job satisfaction."*

3.1.2 Positive Organizational Climate

When teaching staff formed under the leadership of school principal integrates with the students who have already gained self-discipline in studying, a positive organizational climate arises. That positive climate makes it easier to achieve PS targets. As the organizational commitment of workers increases, it becomes easier for them to adopt organization targets and identify themselves with the organization; their urge for self-sacrifice increases; they can maintain their organizational membership on a voluntary basis and fulfill their roles in a more efficient manner (Meyer, Stanley, Herscovitch, & Topolnytsky, 2002), (Bastas & Öztuğ, 2012). T14: *"We are a good team in this school, I am very happy."* T2: *"The most important thing here is the climate. We do not drag our feet*

when we come here. We feel the team climate more here, we can easily overcome the difficulties." M3: *"The school principal's building his/her own team highly contributes to the positive school climate. The factions forming among teachers in other schools, as I have witnessed before, are not seen in PS; teachers and managers feel a more positive team climate. In PS, instead of assigning tasks to teachers pertaining to a project, teachers themselves volunteer to participate in projects. They even spend their time on projects after work hours."* M5: *"If the teaching staff is built properly, that has a positive effect on teachers' room."* M8: *"Working in PS increases job satisfaction, contributes to the positive climate in school."* T5: *"The targeted aim is very good; the working of a team knowing each other is the key to success."*

3.1.3 Test Anxiety

On the way to be an effective school, PS has favorable features: student profile and teamwork. However, the school manager abides by the same laws, rules and regulations applied to others although he/she is subject to a different regulation in terms of the assignment. So, the exam anxiety seen in other schools is also witnessed in PS, as the university exam is also applied to PS students. Especially in the last two years of high schools, students as well as teachers tend to spend their whole energy on working for that exam and avoiding to participate in projects which underlies PS. Thus, project-based education comes to a halt form time to time. Y2: *"Despite having a separate regulation on teacher and manager assignment in PS, we are subject to the same laws, rules and regulations applied to others as in "curriculum, discipline, exam, university entrance, etc." That prevents PS to be a whole project. For PS to be sustainable, the government should support PS in terms of both regulations and funds. If that is not provided, then there will only be a separation between PS and non-PS on the basis of admitting students through exams or not."* M1: *"The most important advantage PS has is being able to select its students and teachers. Its disadvantage is to produce and administer its projects in addition to the central projects. That makes teachers and students feel anxiety about possible negative effects on exam studies."* M8: *"The projects in PS should be valued and encouraged through incentives such as extra points in the university entrance exam. Otherwise, the last two years will be spent on preparations for the university exam instead of projects."* M3: *"As a manager who worked in a PS for a short period of time, I find it rather meaningful that project works in PS have no use in university entrance."*

3.2 The Effect of PS Principal's "Effective Leadership" on School's Effectiveness (2. Theme)

Effective school leadership is considered a key constituent in achieving school improvement (Day, Gu, & Sammons, 2016), (Preston, Goldring, Guthrie, Ramsey, & Huff, 2017). The assignment procedure of PS managers is an important feature distinguishing it from other schools. Manager assignments are exempted from current regulations. In PS, managers do not come to office through first assignment or change of working place. The PS manager is first appointed and then, after a certain period of time, assigned as a member of the staff. One of the reasons for it is to check and see the school principal's "effective leadership" during his/her period of office. Because, as the participants stated, the school principal plays a key role in PS with his granted authority. While organizational citizenship behaviors and collective learning adequacy within the second theme have a positive effect on the school effectiveness, the professional inadequacy has negative reflections. 3 codes falling under the 2nd Theme are shown in Table 5:

Table 5: The Effect of PS Principal's "Effective Leadership" on School's Effectiveness

Codes	Definition	Effect	Participants	N	%
Developing Organizational Citizenship Behavior	The organizational citizenship anticipated to occur in PS with the principal's leadership and team working in harmony.	Positive	M5, M3, T8, M8, M7, T1, T5, T7, T12, M2	10	43
Increase in Collective Teacher Adequacy	The teaching staff shaped around principal bringing synergy within the scope of PS vision	Positive	T4, T3, T6, T7, M1, M4, M5, T2, M7	9	40
Professional Inadequacy	PS Principal's not acting professional when he/she builds teaching staff and reviews teachers.	Negative	T8, M4, M7, T5, T2, M6	6	26

3.2.1 Developing Organizational Citizenship Behavior

Collective efficacy is an important explanation for success (Donohoo, 2018). Organizational citizenship behavior is defined as the voluntary acts going above and beyond the formal or official requirements of the organization. For PS, it refers to teachers' putting more effort to help their students and colleagues be successful (DiPaola & Hoy, 2005). Organizational citizenship behaviors function through affecting social, psychological and normative environment of the organization, either directly or indirectly (Bogler & Somech, 2004). PS principal's leadership and harmonized team he/she builds seem to have the key role in developing organizational citizenship. M5: "*Teachers in PS, are, yes, working more, compared to other schools but I have not seen much of them who complain about it. Everybody seems to be pleased with the school environment and working in general. If the principal is good, then that is felt everywhere in the school.*" M3: "*The school is good as much as its principal. From this point of view, it sounds reasonable to give vast initiative to a principal.*" T8: "*In a school, the principal adequacy and leadership come right after the student qualification. Teachers' qualification ranks number three. If the first two are not good, then both the school environment and the teachers' efficiency become unsatisfactory.*" M8: "*Principal's building his/her own team reflects quite positively on organizational behaviors. But the outcome depends on the characteristics of principal. The principal's effective leadership plays a crucial role in achieving an effective school.*"

A manager, after emphasizing principal's key role, stated (M*7): "Selecting principal, in particular, is the most critical threshold for PS. Everything starts with it. Therefore, the principal's educational stance, entrepreneurial spirit and academic career –as it gives a person vision and expands his/her horizon- must be attached great importance.*"

3.2.2 Increase in Collective Teacher Adequacy

Collective efficacy is based on the belief that through collective actions educators can influence students' results and enhance their achievements (Sharratt, 2019). Collective teacher adequacy is defined as teachers' believing in their abilities to administer and organize

required actions for affecting students positively (Goddard & Goddard, 2001). What results in an increase in collective teacher adequacy possible is the teachers' direct experiences in school (Cybulski, Hoy, & Sweetland, 2005) and the principal and colleagues' support and encouragement (Ross, Hogaboam-Gray, & Gray, 2004). Teachers in PS have the opportunity to experience teaching directly by means of students' academic successes and projects. Besides, the vision of the entire teaching staff shaped around the principal to achieve a qualified educational environment reveals a power (synergy) that is greater than those of team members. *T4: "The whole is greater than the sum of its parts. Based on this idea, I think the principal's building his/her own team is grand and would have a substantial positive effect on the school environment."* T3: "The p*rincipal's authority to build his/her own team is extremely good."* T6: *"The principal's authority to build his/her own team is very good. Accountability increases success and performances. Team spirit positively affects job satisfaction. Teacher's feeling to be selected and being with good students makes him/her happy."* T7: *"The team spirit created in the school is absolutely contributing to teachers' job satisfaction."* M1: **"***The authority to build team highly contributes to organization climate."* M4: *"The principal's authority to build his/her own team is very important. The principal should be able to work with a team he/she trusts. Because he/she cannot control each and every teacher. So, the existence of team members believing in themselves becomes very important."* Y5: *"The principal's right to select teachers causes teachers to make more self-sacrifice and display better performances."* T2: *"Enabling principal to build his/her own team is wonderful."* M7: *"The principal's building his/her own team is a very good practice."*

3.2.3 Professional Inadequacy

PS Principal's not acting professional when he/she builds teaching staff and reviews teachers has negative effects on the school effectiveness and teachers' adequacy. One of the teachers gives a very good example: T8: *"I work in a PS. I have worked with five principals in the last five years. With one principal, teachers' room becomes full of whining, with another principal school environment becomes very positive."* M4: *"PS should have standards like TSE (Turkish Standards Institution)."* M7: *"The defects in our reference system prevent us building a right, effective and qualified teaching staff."* T5: *"If the appointments are not made according to merits, if managers and teachers are not selected and reviewed according to objective performance criteria, it seems unlikely to achieve the aimed targets. T2: "The principal's building his/her own team is splendid. But, as the public administration is not professional enough, I think this practice is luxurious and would not last long."* Y6: *"There should be a professional understanding and objective criteria for selecting and reviewing teachers. Otherwise, the principal may misuse his authority to select and review teachers."*

3.3 The Effect of Education Vision in PS on School Effectiveness (3. Theme)

PS are schools established to increase educational effectiveness and teaching staff efficiency. PS has some features that contribute to the realization of this vision. However, it has also some features which are far from the desired levels. While physical infrastructure facilities, self-fulfillment of students and teachers and PS becoming a learning organization within the third theme positively affect school's effectiveness, shortage in auxiliary staff and funds needed to achieve the mentioned vision negatively affects school effectiveness and decreases teachers and managers' adequacy. 4 codes under the 3rd Theme are shown in Table 6:

Table 6: The Effect of Education Vision in PS on School Effectiveness

Codes	Definition	Effect	Participants	N	%
Physical Infrastructure Facilities	PS physical infrastructure facilities being sufficient for effective education	Positive	M5, M3, T8, M8, T9, M7	14	60
Self-Fulfillment	PS students and teachers being able to self-fulfill	Positive	T6, T7, M6, M4, T10, T11, M7	6	26
Learning Organization Culture	Teachers and parents' involvement in education as much as students by means of	Positive	T6, M1, M2, T11, M8	5	21
Shortage of Auxiliary Staff and Funds	Shortage of auxiliary staff and funds required to use physical facilities at full capacity and implement projects fully.	Negative	M4, M6, M7, T1	4	17

3.3.1 Physical Infrastructure Facilities

It is important to have education environments ready for effective education. With top level physical infrastructure enabling various academic, social and sports activities such as modern classrooms, physical and social sciences laboratories, language and technology laboratories, library, indoor and outdoor sports facilities, music and art workshops, cafeteria and boarding house, PS meet all the conditions of an effective education. *M5: "Having all required physical facilities, having boarding schools increases educational quality. Y8: Having all required physical facilities is extremely important to achieve an effective school and PS does provide it." M6: "The physical infrastructure of these schools is completed before opening, but other schools are devoid of the same means."*

To tell that physical infrastructure is a means not an end for an effective education and the quality is still at the hands of education leader, one manager said: *M9: "Physical infrastructure is important but what's more important is to guide students to the good in the right way. A student can be happy even when he is playing in a 3-square meter area and develop behaviors at the same time. If the school manager is too protective, then the physical infrastructure would be useless"*

3.3.2 Teachers and Students' Self-Fulfillment by means of Projects

According to one of the well-known motivational theories i.e., Maslow' hierarchy of needs, human needs have certain hierarchies and the need lower down in the hierarchy must be satisfied first for the next to appear (Schultz & Schultz, 2001). The highest need is the self-actualization needs. Education and projects in PS aim at fulfilling these needs (Steerss & Porter, 1991). Teachers and students think that they fulfill their selves in PS, to a large extent. *T6: "Our school is "crazy about projects". Our school opens stands in magazine festivals with tens of magazines. All of them are carried out by students. The school activities are so good that I sometimes wish to be a student again and be among the students and be a part of the projects. By means of projects and activities, we have students communicating in English with a university teacher abroad with ease, thanks to the foreign language education they have in the preparatory classes; and thanks to their relationship with books we impose, they*

can easily solve paragraph questions which will be asked in the university entrance exam." T7: *"Projects and activities carried out in school are so useful. These activities highly contribute to their vision and expand their horizons."* M6: *"I think that projects and activities in PS provide and contribute to teachers' job satisfaction."* M4: *"Our school participates in every possible national/international projects and reaches high achievements in all of them. Our projects can be about vocational courses as well as TÜBİTAK (Scientific and Technological Research Council of Turkey) Projects. We also send students to the projects in Switzerland, Germany or İzmir. We attach great importance to language education as well as religious education. We pay attention to social activities as well as preparation works for university exam as best as we can. Besides, we have been hosting tens of projects to which students, teachers and managers from different Turkish cities and world countries attend. All these works help students prepare themselves for life meanwhile contribute to teachers' self-fulfillment while they practice their profession."* T11: *"Course hours in PS are more than the other schools, we definitely do extra courses. Since the student profile is good here, teacher can practice teaching with happiness and excitement. Because the teachers as well as students are selected, job satisfaction is higher here."*

3.3.3 Developing Learning Organization Culture

Teacher cooperation and consensus can be understood as subordinate to school leadership in the sense that a strong school leadership is largely a prerequisite for teachers to have the opportunity to collaborate and find consensus in important pedagogical and organisational issues (Ramberg et al., 2019). A systematic review of studies on teacher cooperation shows that a good and vital collaboration between teachers gives positive outcomes at several levels of the school organisation, benefiting both the students and the teachers (Vangrieken, Dochy, Raes, & Kyndt, 2015). More precisely, teacher cooperation revolves around conditions for regular communication among teacher colleagues to provide opportunities for recurring everyday interaction, planning of teaching and the exchange of educational materials and experiences (Van Waes et al., 2016).

In order to ensure the sustainability of the quality in the organizations, it is necessary to provide training to the employees at the levels required by their duties, powers and responsibilities and make it sustainable (Genç, 2011). An individual is expected to be useful first for himself/herself, then his/her family and then the society. That is also valid for organizations. Each organization emerges for a certain reason. Schools, in this respect, are the organizations aiming to reach academic success with students and contribute positively to their behavioral development. That being said, in schools, teachers, managers, parents and even the school and its institutional memory learn as much as the students do. PS has started to spread synergy with its activities and projects. But, as PS is newly established, it is early to talk about an established culture. M8: *"I treasure these projects and activities. When the student matures and becomes a part of social life, the activities and projects will shed his/her way and form his/her personality, as well. Activities should be perceived as the life itself, not as a burden. For that matter, we should be able to establish rewarding institutions like universities for our life."*

Teachers stated that they should continue learning for PS to reach its aimed targets, thus be given the required support. T6: *"All teaching staff should receive in-service training, have a Master's Degree at the very least and be sent abroad when needed. That is to say, we should develop our human resources, make them fit to the aimed targets and transform PS into an attraction center for teachers. Well-planned in-service training programs, teacher collaboration and sharing should avail career steps; in-service training should be planned and included in weekly working hours."*

3.3.4 Shortage of Auxiliary Personnel and Funds

Only sufficient support of auxiliary personnel would make it possible for a PS to use its physical facilities at full capacity and for projects to be realized fully. For PS to be an effective school, a large number of auxiliary personnel (from security guard to cleaning staff, from mentor in boarding house to the cook in cafeteria, from librarian to the technical staff) should be available. Although the physical infrastructure is adequate, not having sufficient auxiliary personnel would hinder its maximum utilization. And that negatively affects PS success and sustainability (Koç & Bastas, 2019). *M4: "Two basic features distinguishing PS from other schools are selecting teachers and selecting students. We do not have a different economic support system from other schools but we need to find more fiscal resources as the students, senior managers and parents have higher expectations. So we are forced to employ more auxiliary staff." T1: "There is not any fund for PS distinguishing features such as employing foreign teachers. Here it is expected from us to solve it with "local means". Although many PS have boarding houses, personnel shortage such as instructor, servant, etc are at the highest level. These, too, are expected to be solved with local means." M6: "Moral and material support given to PS would make these schools sustainable." M7: "Perception is the reason for PS to be effective. In these schools, students and teachers are made feel special; they are always reminded that they are in a PS. A good outcome is expected from that attitude. That could carry PS up to a point. So, PS should be supported with curriculum, human resources and financial aid."*

4. Conclusion And Recommendations

According to this research aiming at determining the role and effect of PS structural and managerial features in achieving effective school, we conclude that: (1) teachers in PS are satisfied with the new management model, (2) there has been an increase in collective teacher adequacy due to the teamwork shaped around the school principal's leadership, (3) a higher teacher performance is achieved.

Based on the participants' answers, the sufficiency of PS physical facilities is seen as the most positive feature of PS with a rate of 60%. That implies that PS is ready for an effective education in terms of its educational environment. However, utilizing physical facilities at full capacity depends on the amount of personnel used in the social and sports facilities and complementary departments –e.g. boarding house- Research participants express the inadequacy of funds and personnel required to use those facilities.

PS, with its student profile, physical facilities, flexible and responsive selection of managers/teachers, stands out as an attraction center. Although teachers in PS have to work more compared to non-PS, they do not complain about it in general. That's because teachers think they can practice their profession better and reach self-actualization. The teachers' satisfaction results in the development of organizational citizenship behaviors and increase in the collective teacher adequacy in PS. Synergy created by these factors increases the school's effectiveness, teacher performance and student success.

As PS is new in terms of managerial features, its staff needs to undergo an adaptation process. Despite the mentioned positive effects of principal's building his/her own team, there are some concerns regarding professional manners of managers and teachers since they have not fully internalized professionalism just like the private sector. One of those concerns is related with the overwhelming projects and activities. Teachers and managers are worried that the projects and activities would negatively affect the preparation process of students for the university entrance exam. However, we cannot verify the concern as PS has not produced graduates yet. Still, we should mention that several PS tend to ease projects partially in the

last two years of the school. This way, they intend to make more time for exam studies and reduce the exam anxiety in partial.

Based on the research results, we may recommend the following to educational policy makers, implementers and researchers:

Utilizing PS physical facilities at full capacity is crucial in terms of their effectiveness. For it, the government may provide the required auxiliary personnel in these schools. Cooperation with municipalities and NGOs may be better institutionalized for the sake of optimal usage of local means. By means of inter-institutional protocols, the financial burden on the shoulders of school managers may be reduced, thus have them focus more on the educational management.

Projects and activities in PS have great importance for students' contribution to educational production. But, university exam anxiety may hinder these works in the last two years of the school. To ease or erase that anxiety and make PS more productive, certificates can be awarded to students for their participation in national/international projects. Certain arrangements - extra points in the university exam- can be made for these certificates. Also, teachers can be supported through supplements for projects they administer.

As said before, we observe the positive reflections of PS principal's building his/her own team on the synergy created in the school. But, in order to establish professional manners that are new to staff in public schools, in-service training programs for teachers and managers can be enforced. For staff performance reviews, objective criteria can be set.

As PS is rather a new management model within the scope of Turkish National Educational system, researchers might study it with different scaling methods and different perspectives. Especially comparative studies focusing on PS and non-PS might reveal better results.

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USE OF FILM SCRIPTS AND THEIR TRANSLATIONS IN TEACHING ENGLISH AS A FOREIGN LANGUAGE

Research Article

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USE OF FILM SCRIPTS AND THEIR TRANSLATIONS IN TEACHING ENGLISH AS A FOREIGN LANGUAGE

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Abstract

Although millions of EFL learners benefit from watching subtitled/captioned movies and TV shows in non-instructional settings, one almost untouched area is the development of strategies in benefiting from film scripts and their translated versions as well as audio language-subtitle combinations. This paper reports research subsequent to the researcher/teacher's guided work on the use of film scripts and their translated versions. The students guided were required to notice and list chunks as well as technical and creative use of language in these scripts with their immediate contexts. This was carried out comparing the original scripts and those translated in Turkish and do creative dialogue/anecdote writing focusing on appropriacy and variety in language use. However some students' self-reported lack of focus on the jargons and formal language. The research was conducted with 1-5 Likert type questionnaires and closed-ended yes/no questions. The participants, the students of the research/teacher of the present paper, are the undergraduate students taking advanced language skills course as part of the curriculum of their major, the English language and literature. The results demonstrated that the film scripts can be used to convert the input provided by the film scripts to intake and uptake and provide good examples regarding the application of own language use in ELT.

Keywords: film scripts, subtitles, chunks, jargon, out-of-class settings, strategy

1. Introduction

There are several problems getting in the way of comprehension of spoken English. According to Renandya and Farrel (2011), features making speech especially challenging for EFL learners are speech rate, words undergoing radical changes with sounds modified, dropped, and added, which is quite natural for native speakers, blurry boundaries of words, real-time processing of speech.

Studying the listening problems of EFL college students in China, Zeng (2007 as cited in Renandya & Farrel, 2011, p. 54) listed them in percentages (p). Every participant in the sample found speech rate (p: 100%) to be the number one source. Following this were distraction (p: 95%), being unable to recognize words they knew (p: 90%), new vocabulary (p: 85%), missing subsequent input (p: 80%), nervousness (p: 70%), sentence complexity (p: 60%), background knowledge (p: 55%), anxiety and frustration (p: 45%), unfamiliar pronunciation (p: 40%).

Arguing for the need to benefit from the common ground between reading and listening, Renandya and Farrel (2011, p. 56) offer a solution related to the problems with "word recognition skill, vocabulary, reading comprehension, fluency, and general language proficiency". They argue for the application of extensive reading to extensive listening which they think will also help with positive attitudes toward reading and listening in general. What they recommend is reading and listening to simple and enjoyable materials.

The film scripts and their translated versions are the sources that provide such means for both extensive reading and extensive listening. The same holds for the subtitled/captioned movies and TV shows, as well. Therefore, options of audio and subtitles/captions would be

an inseparable part of a study of the use of films scripts for foreign language learning purposes.

Matielo, D'Ely, and Baretta (2015) cite studies showing that caption (same language subtitle) availability improved ESL students' word recognition (e.g. Garza, 1991; Neuman & Koskinen, 1992; Markham, 1999 cited in Matielo, D'Ely, & Baretta, 2015). Also cited by Matielo et al. (2015) are the studies conducted with university-level students concluding that for enhanced listening comprehension initially the students should be exposed to native language subtitles, followed with intralingual subtitles (captions) with the development of foreign language literacy skills. It is only finally no subtitles/captions option should be resorted to (e.g. Markham, Peter & McCarthy, 2001; Markham & Peter, 2003 cited in Matielo et al. 2015). Matielo et. al. (2015) stated that this argument "seems reasonable considering one's language learning path and it has strongly influenced later studies" (p. 172). However, some students may have the need to see the words they hear on the screen to establish the connections between the spoken and the written whereas the native language subtitles do not encourage the previously acquired listening skills (Stewart & Pertusa, 2004).

Reversing the direction of L1 and L2 in the traditionally applied interlingual subtitling, Zengin and Aker's study (2016) tried including a new combination of audio and subtitle languages. Audio language is the native language of the EFL learner and the subtitle is the target language. As the perceptive skill of reading is easier than that of listening, reading can be used to facilitate the preparation of the foundation for productive skills. One way to do this is reading English subtitles while enjoying the full comprehension of the audio language being the mother tongue of the student. Zengin and Aker (2016) conducted in-depth semi-structured interviews about watching movies/series dubbed in Turkish and subbed in English with 16 Turkish undergraduates majoring in English philology and analyzed the data with content analysis. Although seven participants did not experience using the combination, the three-fourths of the sample expressed their positive attitudes towards using Turkish dubbed-English subbed only three participants actively used Turkish dubbed – English subbed films in their past learning processes.

Of these three students, this combination had a good effect regarding reading and vocabulary at the beginning stage. But she stated that owing to spelling pronunciation differences, she later had a tendency to use English captioned English audio language. According to another female participant, Turkish dubbed audio with English subtitles on was a good choice for the everyday conversational language but she also argued for English audio with English captions on to gain familiarity with the sound and improve pronunciation. Although almost twenty percent experienced using Turkish dubbed English subbed version and expressed their satisfaction with this experience, more than half found the idea to be very logical. Those considering this strategy useful underlined its help with noticing the mistakes done and its support for new English vocabulary (including technical terminology). There was also one male student who underlined its benefits at the beginning stages he experienced.

Another way of using the receptive skill of reading as a preparatory foundation for the more challenging receptive skill of listening is activities/tasks with the use of film scripts and their translations. Given the challenges presented and solutions offered, the strategy that supports learners of English facing these difficulties in the application of solutions can be the use of activities of films script with which learners detect chunks (collocation, colligations, and others), technical terminology and creative language together with their translations. The activities have implications for subtitles, as well since subtitles are versions of films scripts shown on the screen when the films are played.

Strategies for making most of the subtitles help learners to pay conscious attention to the input resulting in the kind of intake known as noticing (Schmidt, 1990). Due to the cognitive load involved in noticing, receptive tasks should precede productive tasks. "Recent research suggests that tasks promoting "the premature production of language may be less effective than tasks encouraging the receptive processing of input (Van Patten, 1994 as cited in Batstone, 1996, p: 273).

2. Purpose

The researcher was the instructor who taught language skills course. The number one problematic area in the Turkish context is speaking skills. Daily conversational language requires a high-level command of chunks. However, another learning outcome targeted required English for professional purposes as well as the addition of translational skills, and the students were English language and literature majors. Therefore, the study covered specialised language and creative language uses as well as translation.

In order to achieve these outcomes related to construction of vocabulary foundation as a prerequisite and consciousness of the reading-oriented culture of learning in much of the context inTurkey, the researcher developed the strategy of benefiting from compare/contrast study of the scripts of English movies and TV shows and their translation versions both of which can be found free-of-charge in some script websites. Therefore, the students were provided guidance about how to benefit from the scripts for vocabulary skills, translation skills and productive skills of creative dialogue writing. Their progress was monitored in the process. In this context, with a self-made questionnaire, the research/teacher aimed to assess the effectiveness of the above-mentioned strategy in terms of the learning outcomes targeted.

3. Method

Although there was one item asking the participants about their comments, no qualitative data except those by two students were collected, resulting in almost all the data being quantitative with Likert scale attitude questions, yes/no questions, and one multiple choice question. Responses to the Likert scale survey items were analysed using SPSS. As for the other data (multiple choice and yes/no questions) frequencies and percentages were calculated.

3.1. Participants

In terms of participation, the focus of the study was on thirty-six students of English philology program of Tekirdağ Namık Kemal University. They were late adolescents whose level of English was intermediate. The scale was administered in their first language, Turkish.

3.2. Instrument

The questionnaire included 5-point Likert scale attitude questions, yes/no questions and one component with four items consisting of four options to choose from. The Likert scale survey questions consisted of two components. One of these had ten items about the use of scripts of movies and TV shows and their translations and the other had nine questions about the ways of using combinations of the audio language and subtitles, what they chose under what condition and for what reason.

The yes/no questions were those asking whether they wrote dialogues only, short stories only, both dialogues and short stories as part of the scripts. Some yes/no questions were about language use. They were asked whether, in their dialogues/anecdotes, they showed care for appropriacy in language use, whether they showed care not to neglect the variety in language use (inclusion of not only chunks but also jargon and creativity). The film script activities

also consisted of creative writing activities subsequent to the vocabulary tasks which were done with the scripts. Therefore, yes/no items also inquired what they actually wrote and their general preferences apart from this actual writing. So, the participants were asked whether they actually wrote dialogue only, short story only, or both dialogue and short story. Apart from they were also asked whether they generally preferred to write dialogues only, short stories only, or both.

Some of them were about including film activities that included acting, that is the enactment of the script. The participants were asked whether they did activities of enactment of dialogues and/or anecdotes including role play, script-writing and doing the shooting within-group task-sharing. The last component had four options each of which was a combination of audio language and subtitle. Options were English audio – subtitle off, English audio – Turkish subtitle, English audio – English subtitle (captions), and the option of the Turkish dubbed – English subbed. They were asked assuming that they had a device that provides a variety of audio language and subtitle combinations what option they would choose under what condition (however, due to presumably time constraints or seeing the following Likert scale items were on the same topic, except two students, no participants wrote any comment related to each option and only a few selected.

4. Results

4.1. Findings of Yes/No Questions

All of the students did activities in which they scanned the English language movies and TV shows (series) for chunks, find the Turkish equivalents of these chunks in the Turkish translation versions of the English language scripts and listed both English chunks and their Turkish translations. The number of those adding to the lists the examples of creative language use together with their Turkish equivalents was higher, namely 30 students. However, six respondents (p:16.66% – two males and four females) stated they did not so. Those adding specialized language examples with their Turkish equivalents constituted almost the three-quarters of the sample. Nine respondents (p=8.33%; males: N=3; females: N=6) said they did not so and there were two nonresponders. Almost all of them added vocabulary with their Turkish translations when they noticed their translations were intriguing. Only two did not so (5.55% - one male and one female). Except for 10 respondents (p=27.77 %; males: N=3 and females: N=7), the participants stated that the structures requiring grammatical awareness in terms of grammar together with their Turkish equivalents.

Only less than half of the participants reported that they did these (above-mentioned) activities using the scripts of movies and TV shows (series) together with their L1 translations outside the class, that these activities turned into a habit and they construct vocabulary materials from the movies or series they were interested in even if they were not asked to by the teacher. However, more than half of the sample (p=55.55%; males: N=7 and females: N=13) self-reported that they limited themselves to in-class activities and did not extend them beyond the class hours.

In their vocabulary lists, they constructed using these script activities. It is only almost two-thirds of the sample who stated that in addition to the daily conversational language, they added language use examples such as formal/academic language and technical terminology. All of the participants stated clearly that they could write dialogues rich in terms of language use examples they acquired with these activities. Some questions were about the participants' preferences and tendencies to write dialogue, short story/anecdote or both.

Half of the sample (N: 18, p=50%; females: N=9; males: N=9) stated that they wrote only dialogues. Almost four-fifths of the participants (N= 14, females: N=11, males: N=3) wrote short stories in addition to dialogues number fourteen. Those whose general preference is writing dialogues constitute half of the respondents (N=18, P=50%, females: N=12 and males:N=6) whereas those who generally prefer to write anecdotes number two (one female, one male) and It was only four respondents (3 females and 1 male) who underlined their general preference is writing both dialogues and anecdotes. Other participants seem to be confused or indecisive or having contradictory statements since they expressed more than one kind of preference out of three choices (only dialogue, only anecdote, both): The number of those doing so is 11 (7 females, 4 males) for only dialogue option, 7 (4 females, 3 males) for only anecdote option, 9 (6 females, 3 males) for both dialogue and anecdote option. It may also be said the wording of the questions is problematic which might be the cause. So maybe those with more than one stated preference meant that there have been times they chose to write only dialogue, only anecdote, and both. If this is the case those stating their general preference as both are 13 participants (9 females, 4 males).

Some questions were about the features of their productions. Except for one person, all the participants stated that they did show care to have appropriacy of language use in what they wrote. Except two, all of them stated that they showed care to have variety (e.g. including not only chunks, but also creative-language, technical terminology, including academic, or formal elements as well informal or casual words). However, regarding the enactment of what they wrote, those who played the role of a character in their writings are only half of them (12 females, 6 males), whereas the other half did not do so. A bit over forty percent (41.66%) were self-reported to do activities of enacting dialogues and/or anecdotes including role play, script-writing and doing the shooting within-group task-sharing.

Most of the participants considered the speech rate and the accent to be the factors that create difficulty to understand the movie an/or TV show (series). Only 3 students (2 females and one male) thought that the speech rate is not the factor of difficulty. As for the accent only five student respondents (4 females and 1 male) state that to them the accent does not make it difficult to understand the movie and TV shows. The number of those believing the technical language to cause difficulty in comprehension of the movies/TV shows (series) is much less compared to speech rate and accent. However, it is only 10 participants (8 females and 2 males) who do not consider the technical jargon to be a source of difficulty.

Whether cultural differences constitute any difficulty factor in the understanding of movies and TV shows are also responded positively by almost half of the sample with 16 participants (9 females and 7 males) responding negatively to the statement. The least number of affirmative responses went to whether the high number of slangs generated any difficulty in the comprehension of movies/TV shows. Almost the four-fifths (N=28; females:N= 19; males: N=9, p= 77.77%) responded negatively.

Except for two students (1 female, 1 male), all of the students stated that they noticed chunks or similar multiword units while watching English movies and/or TV shows (series). However, although the chunks are reported to be noticed, more than half of the respondents (N: 19; females: N= 11; males: N=8; p= 52.77%) stated that they do note them down. Likewise, the statement "While noticing the chunks, I note them with their Turkish equivalents" is responded positively only by half of the sample.

4.2. Findings of the multiple-choice part of the questionnaire

Out of four audio-subtitle combinations, English audio with subtitles off and Turkish dubbed-English subbed combinations are the two audio-subtitle combinations that were

reported to be chosen by only one person (in each case females). The other participants choosing one choice are 29 participants. Almost half of them self-report their preference as English audio with English captions (N= 15, female:N= 10; males: N=5). Almost another half chose the other much-preferred combination, namely English audio with Turkish subtitles (N= 14; female: N= 8 males: N=6). As for the rest few, there was one female non-respondent, one female choosing all the combinations except the Turkish dubbed English subbed version, one female choosing English audio with English subtitles and English audio with Turkish subtitles. There was also one male choosing each item and writing his justification for each.

4.2.1 Comments of two participants

One female was seen to have the need to add her comment as a justification for her preference for English audio – English subbed/captioned

"This is the way I develop my listening, I get familiar with the words. Besides, seeing the way the words are written, I am coding them in my mind. Above all, when the words are intelligible due to the difference in accent the words this combination makes the words in the memory stronger when I see them."

Not having one choice, one of the participants (male) had the need to reflect her preferences more accurately:

According to what he wrote: When he does not have trouble following or understanding the series or the movie he watches it in English and without subtitles. If he has no trouble watching the series, he prefers to set both the language and subtitle as English. In order to watch the series in its original language and watch it without any trouble with the understanding, he sets the audio as English and the subtitle as Turkish. In order to see how the movie or series were adapted to Turkish and how the chunks were translated he prefers Turkish dubbed English subbed version.

4.3. Likert scale findings

4.3.1. Findings of the use of scripts of movies and TV shows and their translations on a 5-point Likert scale

Table 1. *Questionnaire items about the use of scripts of movies and TV shows and their translations on a 5-point Likert scale*

Items	Means (M)	Level of agreement (LoA)	Standard Deviations (SD)
1. The above-mentioned activities contributed to general English.	4.37	87.4%	.646
2. The above-mentioned activities contributed to my conversational English.	4.1429	82.8%	.49366
3. The above-mentioned activities contributed to chunks.	4.3714	87.4%	.59832
4. The above-mentioned activities contributed to specialized language (law, medicine, etc.).	3.9714	79.4%	.82197
5. The above-mentioned activities contributed to my translation skills.	4.2286	84.6%	.59832
6. Some benefits of translation are raising of the awareness regarding the source (Turkish) language and culture as well as target (English) language and culture.	4.0000	80.0%	.64169
7. The place of translation in my learning process contributed to the awareness regarding cultural differences.	3.8000	76.0%	.96406

8. I came across examples of creative language uses in the English scripts (e.g. bridezilla, bromance).	4.3235	86.4%	.80606
9. The translations of creative language uses were beneficial in terms of creative language use.	4.1714	83.4%	.78537
10. While I was benefiting from the films in language learning I noticed stereotypes.	4.4000	88.0%	.55307

Table 2. *Frequency in number (n) and percentage*

Items	Strongly agree N (%)	Agree	Undecided	Disagree	Strongly disagree
1. The above-mentioned activities contributed to general English.	15 (41.66%)	20 (55.55%)	-	1 (2.77%)	
2. The above-mentioned activities contributed to my conversational English.	7 (19.44%)	27 (75.0%)	2 (5.55%)		
3. The above-mentioned activities contributed to chunks.	15 (41.66%)	19 (52.77%)	2 (5.55%)		
4. The above-mentioned activities contributed to specialised language (law, medicine, etc.).	10 (27.77%)	18 (50.0%)	6 (16.66%)	2 (5.55%)	
5. The above-mentioned activities contributed to my translation skills.	11 (30.55%)	22 (61.11%)	3 (8.33%)		
6. Some benefits of translation are raising of the awareness regarding the source (Turkish) language and culture as well as target (English) language and culture.	7 (19.44%)	22 (61.11%)	7 (19.44%)		
7. The place of translation in my learning process contributed to the awareness regarding cultural differences.	9 (25.0%)	15 (41.66%)	8 (22.22%)	4 (11.11%)	
8. I came across examples of the creative language uses in the English scripts (e.g. bridezilla, bromance).	16 (44.44%)	16 (44.44%)	1 (2.77%)	2 (5.55%)	
9. The translations of creative language uses were beneficial in terms of creative language use.	12 (33.33%)	20 (55.55%)	2 (5.55%)	2 (5.55%)	
10. While I was benefiting from the films in language learning I noticed stereotypes.	15 (41.66%)	20 (55.55%)	1 (2.77%)		

As can be seen in Table 1 and Table 2, with five being the 100% agreement and the mean values converted into percentages, the items in the first Likert scale questionnaire, which was about the use of the scripts of movies and TV shows (series) together with their L1 translations, were highly rated, above the level of agreement of 0.80 (80%) which shows a high consensus of agreement with the items on the part of the participants of the study. Only the two below this threshold, the fourth and the seventh also reflect the agreement, the former only 0.6 below the 0.80 agreement level whereas the latter also demonstrate agreement as well.

Overall, the items in the questionnaire are highly rated. The activities using scripts of movies and TV shows and their translations contributed to general English, conversational English, chunks, specialized language (legal jargon, medical jargon, etc.) and translation skills. Out of these contributions, that regarding chunks had the highest level of agreement followed by that regarding general English, which shows it is not limited to chunks. Those with a positive attitude toward their contribution to general English make up 97.22% of the sample with only one student disagreeing (2.77%). Those demonstrating affirmative attitude toward their benefit for the chunks number 34 making up the 94.44 of the sample with those disagreeing consisting of the rest, 5.55% of the sample. Chunks make up most of the conversational language. Thus, a similar level of high rating was exhibited with the affirmative attitudes shown by 32 out of 36 participants (%88.88 with positive attitudes) toward the item stating the benefits of the film scripts for conversational English. Furthermore, the film scripts are also perceived by almost four-fifths of the sample to be beneficial in terms of the special-language words or terms associated with particular areas of specialist knowledge. The film scripts were reported to provide benefit beyond formulaic language. Almost ninety percent (88.88%) of the sample stated they came across examples of creative language use (8th item). Translations of the examples of creative language use, produced breaking the moulds of formulaic language, benefited the students as well. So the 9th item was also favored with 32 out of 36 students (88.88%). Those undecided and those disagreeing constitute 5.55% and 5.55% respectively. The high level of an agreement reflected with favorable attitudes was shown by 32 out of 36 (88.88%) students who think the dimension of creative language use involved the translations of creative language use.

By their nature, the film script studies involved both English scripts and the scripts' translation into Turkish. The film scripts were self-reported to make contributions to 33 participants' translation skills. For this item (5th item in the questionnaire), no student displayed a negative attitude, and there were only 3 undecided respondents. Another item about translation is the sixth item stating the benefits of translation with respect to awareness-raising regarding the language and culture of both source and target languages, which is highly rated by 29 respondents, a bit over the four-fifth (80.5%).

However, although highly rated by the two-third, the item about the contribution of translation in the students' learning process to their awareness of cultural differences was rated lower than the rest of the items. This shows that awareness should be raised as to the potential of translation for cultural differences. Another dimension requiring attention is the problem of stereotypes that may be seen in films. Given all the credit attached to the benefits of using films for skills related to language skills, except one disagreeing, all the students (N: 35, p= 97.22%) self-report that they came across stereotypes in films.

4.3.2. Findings of the ways of using combinations of the audio language and subtitles on a 5-point Likert scale

Table 3. *Questionnaire items about the ways of using combinations of the audio language and subtitles on a 5-point Likert scale*

Items	Means (M)	Level of agreement (LoA)	Standard Deviations
1. When the spoken language is not comprehended due to the accent, preferring the combination of English audio / Turkish subtitles facilitates comprehension.	4.22	84.4%	.760
2. The combination of English audio / Turkish subtitles contributes to my pronunciation.	3.75	75.0%	.996
3. At an advanced level, it is also beneficial to watch in English audio with no subtitle, the fact that there is no subtitle can help prevent distraction.	3.86	77.2%	1.125
4. It is better to prefer setting the audio to English and switching off the subtitle when the viewer can comprehend the English.	4.11	82.2%	1.116
5. What provides better results in the learning process is not only one combination (audio language-subtitle combination) but the variety of audio language-subtitle combinations.	4.36	87.2%	.762
6. When Turkish dubbed-English subbed combination is preferred noting down chunks with their Turkish equivalents gets easy	3.65	73.0%	.981
7. When Turkish dubbed-English subbed combination is preferred, this preference facilitates my noticing the language use when I do not understand the accent.	3.06	61.2%	1.162
8. When Turkish dubbed-English subbed combination is preferred, this facilitates noticing and noting down the formal or academic-oriented uses of language.	3.74	74.8%	.919
9. When Turkish dubbed-English subbed combination is preferred, this facilitates the development of the vocabulary necessary for the beginning stage of the language learning process.	4.06	81.2%	.591

Table 4. *Frequency in number (n) and percentage (%)*

Items	Strongly agree N (%)	Agree	Undecided	Disagree	Strongly disagree
1. When the spoken language is not comprehended due to the accent, preferring the combination of English audio / Turkish subtitles facilitates comprehension.	14 (38.88%)	17 (47.22%)	4 (11.11%)	1 (2.77%)	
2. The combination of English audio / Turkish subtitles contributes to my pronunciation.	7 (19.44%)	19 (52.77%)	5 (13.88%)	4 (11.11%)	1 (2.77%)
3. At an advanced level, it is also beneficial to watch in English audio with no subtitle, the fact that there is no subtitle can help prevent distraction.	12 (33.33%)	13 (36.11%)	7 (19.44%)	2 (5.55%)	2 (5.55)
4. It is better to prefer setting the audio to English and switching off the subtitle when the viewer can comprehend the English.	17 (47.22%)	12 (33.33%)	2 (5.55%)	4 (11.11%)	1 (2.77)
5. What provides better results in the learning process is not only one combination (audio language-subtitle combination) but the variety of audio language-subtitle combinations.	18 (50.0%)	14 (38.88%)	3 (8.33%)	1 (2.77%)	
6. When Turkish dubbed-English subbed combination is preferred noting down chunks with their Turkish equivalents gets easy.	6 (16.66%)	16 (44.44%)	6 (16.66%)	6 (16.66%)	
7. When Turkish dubbed-English subbed combination is preferred, this preference facilitates my noticing the language use when I do not understand the accent.	4 (11.11%)	9 (25.0%)	10 (27.77%)	9 (25.0%)	3 (8.33%)
8. When Turkish dubbed-English subbed combination is preferred, this facilitates noticing and noting down the formal or academic-oriented uses of language.	7 (19.44%)	16 (44.44%)	8 (22.22%)	4 (11.11%)	
9. When Turkish dubbed-English subbed combination is preferred, this facilitates the development of the vocabulary necessary for the beginning stage of the language learning process.	7 (19.44%)	23 (63.88%)	5 (13.88%)		

As can be seen in Table 3 and Table 4, the thirty-one out of 36 participants, that is more than four-fifth, (86.11%) demonstrated positive attitudes toward combining English audio with Turkish subtitles when the accent factor gets in the way of comprehending the English audio. The number of those undecided and negative was four (11.11%) and one (2.77%)

respectively. The English audio / Turkish subtitle combination was also believed to contribute to the pronunciation of almost the third fourth of the sample with those with affirmative attitudes numbering twenty-six (72.22%). Those undecided numbered 5, and those with negative attitudes were 5 in number with 11.11% and 2.77% exhibiting disagreement strong disagreement respectively.

The third and fourth items were related to watching films with English audio on and subtitle off. There is also a high level of agreement with the item stating that at an advanced level it is also beneficial to watch an English film without subtitles and distraction is prevented when subtitle is turned off. Making up almost seventy-percent the seventy-five students rate the item highly. Those undecided consisted of seven students whereas only four participants' answers were negative with 2 disagreeing and 2 those disagreeing strongly.

Like the high rating shown for the English audio with no subtitles mode for those at an advanced level of English, the rating was also high (29 students making up of a bit over four-fifth (80.55%) to use this combination in case of viewers with no problem of comprehension of the English. As for the rest of the sample (19.45%), those showing disagreement (N= 4, p= 11.11%) and strong disagreement (N= 1, p=: 2.77%) outnumbered the undecided (N=2, p=5.55%).

With the highest number of those showing strong agreement (N= 18, p= 50%), the highest-rated item was the necessity of using a variety of audio-subtitle combinations and not necessarily limiting the option to anyone combination to achieve better results in case of benefiting from audio-subtitle options in terms of learning and using English (3 undecided, 1 disagreeing). However, the ratings for watching films Turkish dubbed, English subbed were lower than those for other audio-subtitle combinations. The unfamiliarity with this combination seems to be the reason if one thinks of four unanswered items in the four items related to the Turkish dubbed – English subbed combination (two, one and on in 6th, 8th and 9th items respectively). Although the second-lowest rated item there was still enough agreement level for the sixth item stating that if the preference is shown for Turkish dubbed and English subbed version, it gets easy to note down chunks with their Turkish equivalents.

However, the only undecided attitude is exhibited for the seventh item, a preference for the Turkish dubbed-English subbed version facilitates noticing the language use when the accent is not understood. What would confuse the mind here can be the mention of the word accent in the item, the accent might be seen as irrelevant to prefer this combination. The total of those agreeing is only a bit over one third with those agreeing and strongly agreeing consisting of 25% and 11.11.% respectively

On the other hand, the picture is different when the participants were asked if and to what extent the combination in question (Turkish dubbed audio with English subtitles on) facilitates noticing and noting down the formal or academic-oriented uses of language. More than the three-fifth (N= 23, p: 63.88%) demonstrated positive attitude but the one-fifth (n: 8, p:22.22%) were undecided and four participants (11.11%) disagreed with the statement expressed in the item.

The Turkish dubbed-English subbed version was believed by more than four-fifth of the sample (N= 30, p:83.33%) to be most suitable for the facilitation of vocabulary development in the beginning stage of the learning process. Only five respondents were undecided and there was no participant demonstrating disagreement.

5. Discussion

Matielo, D'Ely and Baretta's (2015) list of recommendations for what future studies should focus on is the accounts by the students of the experiences they undergo, strategies they use

and reactions they show while viewing videos with subtitles/captions. This way will reflect what they believe and perceive about the impact of this kind of videos on the process of their learning and the effects in non-instructional settings. The previous study Zengin and Aker (2016) was on the students' accounts with implications on the need to raise consciousness about the use of Turkish dubbed-English subbed films. The present study is also the account of English language and literature undergraduate students' attitudes toward the use of film scripts and the implications for the use of subtitles/captions. As free-of-charge sources, the websites containing film scripts in their original language as well as their translated versions and subtitles/captions that can be used in and out of class settings. There is a great need to have strategies seeing the whole picture and integrating both the formal and informal settings.

The challenges sourcing from speech rate, vocabulary (novel words, technical terminology, etc.) and accent are acknowledged by the participants of this study which are also corroborated in Zeng's (2007 as cited in Renandya & Farrel, 2011) study which determined the sources of listening difficulties. The participants rated the item stating that distraction is prevented when the subtitles are turned off. However, examining foreign language vocabulary acquisition by Dutch fourth and sixth graders Koolstra and Beentjes (1999) young children benefit from watching subtitled TV programs. Showing no difference between a TV program in English with and without Dutch subtitles, the findings of Koolstra and Beentjes' (1999) study contradicted with the belief that viewers might be distracted from hearing English words by reading subtitles. The Dutch subtitling also helped word recognition and vocabulary acquisition.

The subtitles are good examples of the use of translation for the learning of the foreign language. But the intercultural aspect of translation should not be ignored. The item of the questionnaire about the translation and intercultural competence was lower than the other items. One of the numerous topics subtitled/captioned videos addressed is the development of intercultural competencies (Matielo, D'Ely, & Baretta, 2015). Highly rated items regarding the benefit of subtitles and translation converged with Matielo and Espindola's (2011) evaluation: Not reflecting a complete verbatim of what is spoken, subtitles are shaped by mandatory linguistic compression (Matielo & Espindola, 2011). This compression has an advantage for memory.

The participants showed a high level of agreement for the use of interlingual subtitles. This finding overlapped with Hall and Cook (2012) and Hall and Cook (2013) that shows support for the fact that learners of English benefit from using their languages as opposed to overly monolinguistic attitudes suggest. Hall and Cook (2012, p. 271) reports "charts the continuing widespread use of students' own languages in classrooms around the world and the contemporary academic and societal trends which have led to a revival of support for this" and provides support for the learner's own languages with a range of theoretical frameworks, empirical studies. Hall and Cook's (2013) interviews with practicing teachers demonstrated a wide-spread own-language use which showed a gap between mainstream ELT and teachers' practices on the ground.

6. Conclusion

The scripts of movies and TV shows were analyzed to detect chunks (collocations, colligations, other multi-word units/formulaic language examples), examples of specialised language and creative use of language and the translations of these and list both the English vocabulary and their translation equivalents. Having been exposed to the rich variety of language use examples with their translations, the students were required to be involved in creative dialogue writing activities following each vocabulary activity in the process. Analysis of the Likert scale attitude questions constructed to assess the students' attitudes

toward these script tasks demonstrated that these tasks were found to be beneficial in terms of general English, English for specific/professional/academic purposes, chunks and conversational English as well as creative use of language. Besides, the tasks were found to benefit the students in terms of translation skills, and awareness of source and target language and culture. This had implications for students to benefit much more from translation in terms of awareness of cultural differences which many students did not seem to benefit enough in their learning process. Apart from all these benefits, the students also did notice stereotypes in movies and TV shows.

Another awareness was shown on the variety of strategies for using combinations of audio language and subtitles. Out of all the items, those about the use of Turkish dubbed English subbed version were rated lower than the others, therefore strategy training and consciousness-raising should be started for the use of Turkish dubbed audio language with English subtitles in the learning and use of English. In a study by Zengin and Aker (2016), some of the participants stated that they benefited from this audio-subtitle combination in the beginning stages of learning English. However, the present study showed the need to find ways to benefit from the Turkish dubbed-English subbed version in all the levels of the language learning/use process. Besides, more awareness should be raised for specialised language and use of translation. Translation has significant untapped potential but translation is still taboo word perceptions and conceptions regarding its use being marginalised to and confused with the grammar-translation method (Hall & Cook, 2012; Hall & Cook, 2013). Köksal (2005) argues for the need to incorporate translation as a fifth skill. There is a lack of studies on this dimension. Similarly, Arslan and Kavaklı (2019) conducted a study in which they analyzed the pre-service teachers' translation errors and they stated that implementing error analysis could guide the instructors to pinpoint the source of errors and improve language learning.

The film script tasks reported in this article proved to be good applications of the idea of using film scripts to advance EFL learners' vocabulary and translation skills. As a successful application, the processes reported have implications for those aiming to develop strategies to speed up the processes of learning and teaching English. These activities cvan be integrated to learning/teaching processes within a flipped classroom approach. Since much of the learning takes place in out-of-class settings where the teacher cannot provide immediate feedback it is necessary to reverse the way things run. The teachers of English should be introduced to the use of films scripts and they should be helped to integrate this to their unique settings. The current research had important implication for developing conversational skills of the Turkish learners of English living in Turkey since the conversational skills is a vicious circle experienced and observed by so many people in Turkey.

7. Limitations

The present study had some limitations. The study was limited to script tasks and creative writing. More encouragement should have been shown for those who want to write monologues or anecdotes from the beginning of the process. Also, in writing productions of students, intercultural awareness should have been shown more concern similar to Arslan's (2018) recommendations on the place of intercultural skills in materials. Tasks did not include students' watching of the films with a variety of audio languages and subtitles. This way, they could also observe aspects of nonverbal communication which constitutes a significant part of the communication. This is recommended for future studies. As highlighted in Zengin and Çubukçu (2013), Zengin, Doğan, and Çubukçu (2015) which focused on the idea of using backseat TV systems of buses and Zengin and Aker (2016), the present study holds the same view the solution stakeholders are government, educational

sector and broadcasting companies. Language teaching strategies should not be imprisoned to the walls of classrooms only view to education.

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THE PERCEPTION OF SCIENCE TEACHERS ON SOCIO-SCIENTIFIC ISSUES AND TEACHING THEM*

Research Article

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Abstract

The present research aimed to analyse the perception of science teachers on socio-scientific issues and teaching them. The study group of the research consists of 22 science teachers (14 females, 8 males) working in 7 secondary schools in Sinop, who were determined according to the convenience sampling method. The case study as one of the qualitative research designs was adopted. The data source of the research consists of a questionnaire on teaching socio-scientific issues. The data of the research were obtained through focus group discussions and observation notes. The data obtained from the research were analysed according to the content analysis technique. As a result of the research, it was found out that most of the science teachers had not heard of the concept of SSI (socio-scientific issues) before. It was seen that teachers who did not have knowledge about SSI generally defined it as scientific issues that concern society and had difficulty in giving examples. It was determined that most of the teachers did not know to which learning area in the science curriculum SSI belonged. Teachers who stated that they mostly use the direct instruction, case study and discussion methods in the teaching of SSI in science course emphasised that the SSI teaching process makes positive contributions to the development of student skills like critical thinking, decision making and communication.

Key words: Socio-scientific issues, teaching socio-scientific issues, science teacher, science curriculum

1. Introduction

Looking from the past to the present, it is seen that science is influenced by the needs of society and the society by the scientific developments mutually. As a matter of fact, the rapid change experienced in the scientific field was felt strongly in social life and this situation established a ground for the emergence of a dilemma and discussion on some issues in the society (Topçu, 2017). For example, topics like cloning, stem cell studies, the genome project, global warming, alternative fuels, Genetically Modified Organisms (GMO), chicken meat, organ donation, hydroelectric power plants and nuclear power plants are on the society's agenda and they leave individuals in a dilemma in the decision-making process (Kilinc, Boyes, & Stanisstreet, 2013; Öztürk, Eş, & Turgut, 2017; Öztürk & Yenilmez Türkoğlu, 2018; Sadler, 2004a; Sadler & Zeidler, 2005; Topcu, Sadler, & Yilmaz-Tuzun, 2010; Topçu, Muğaloğlu, & Güven, 2014). Referred to as SSI, these issues are described as complex, open-ended and controversial issues, which push individuals into a dilemma and which do not have a single correct answer (Kolstø, 2001; Ratcliffe & Grace 2003; Sadler,

2004a). They are considered to be an important context in raising science-literate individuals / science literacy (Chang & Chiu, 2008; Driver, Newton, & Osborne, 2000; Ratcliffe & Grace 2003; Roberts 2007; Zeidler et al.,2002; Zeidler et al., 2005).

1.1 Science Literacy

The term "science literacy" was first used by Paul DeHart Hurt in 1958. In his 1958 book "Science Literacy: Its Meaning for American Schools", Paul DeHart Hurd explained this concept as separating theory from dogmas, data from legends and public discourses. Miller (1983) described science literacy as (i) understanding the norms and cognitive content of science, (ii) understanding scientific terms and concepts, and (iii) raising awareness of the impact of science and technology on the individual and society. In the 1990s, the concept of science literacy emerged as a more holistic and transdisciplinary structure by including natural and social sciences. This structure makes it necessary to use a more comprehensive and wide perspective and research for exploring a wide range of issues such as health, new energy sources, environmental problems, biotechnology in which science and social issues are addressed together (Hurd, 1998). Bybee (1997) described science literacy as the entirety of the skills of using scientific knowledge, identifying problems and drawing conclusions based on evidence, understanding the world, and making decisions about changes caused by people's activities. Laugksch (2000) defines science-literate individuals as those who can comprehend the relations between science and society, who know the ethical rules that a scientist who does his or her job should possess, who have an opinion about the nature of science, who can understand the difference between science and technology, who know the basic concepts of science and who can understand the mutual relationships between science and humanities. Goodrum et al. (2001) explained science literacy as an individual's interest in and understanding of the events around them, their participation in science talks, their sceptical approach to science situations spoken by others, their ability to identify problems, their researching and reaching evidence-based results, and their possessing knowledge about their health and environment. Sadler and Zeidler (2009) stated that science literacy, which is considered within the framework of scientific issues in society, should be a target not only for scientists, engineers or doctors but for all students, and that environments beyond the boundaries of schools should be created where students can use their personal experiences in the science contexts that they may encounter (Driver et al., 2000; Kolstø, 2001).

As for the historical development process of the science literacy concept, the dimensions of Science, Technology and Society (STS) have been integrated with the concept of science literacy since the 1950s (Chang, Yeung, & Cheng, 2009; Sadler, 2004b). These three dimensions, the science-technology-society (STS) movement, have remained important as a major component for more than 50 years (Chang et al., 2009). The STS movement is the most common and longest-lived movement to date that has emerged to emphasise the complexity and interrelationship of science, technology and society (Chang Rundgren & Rundgren, 2010; Sadler, 2004b). The relationship between society and science has also taken its place in science curricula with emphasis on science literacy as well as technological applications of science. At the end of the 1970s, many science education researchers set forth a theme that encompassed science, technology and society and reflected their combined effects (Zeidler et al., 2005). In this way, in the 1970s and early 1980s, science literacy was defined in a social context by expanding its scope more strongly with science (DeBoer, 2000).

It is stated that *Socio-Scientific Issues* are an appropriate and important context to support science literacy in today's globalised world, which started with the STS movement in the 2000s and appealed to STSE dimensions (Chang & Chiu, 2008; Chang Rundgren &

Rundgren, 2010; Driver et al., 2000; Hughes, 2000; MEB 2013; Zeidler et al., 2002; Zeidler & Keefer, 2003; Zeidler et al., 2005).

1.2 Socio-Scientific Issues

In the current century, developments taking place in science and technology have been closely related to society, and the science, technology, society and environmental components have been highly regarded in science education. Significant changes and arrangements have been made in science curricula in Turkey especially after 2005. According to the vision of both 2005 Science and Technology Curriculum and also the 2013 and 2018 Science Curriculum, *all students must be raised as science-literate individuals regardless of their individual differences* (MEB, 2006; 2013; 2018). *"Socio-Scientific Issues (SSI)"*, which form an important context in the upbringing of students as science-literate individuals and which was brought up for the first time in the "Science-Technology-Society and Environment" learning area of the 2013 science curriculum, are also highlighted in the 2018 science curriculum. In the last decade, many studies emphasised the importance of SSI in science education to achieve the goal of becoming a science-literate individual, and SSI were discussed in detail in these studies (Zeidler & Sadler, 2011).

SSI are defined as controversial issues that involve ethical, moral or legal dilemmas comprising different perspectives with no definite consensus (Kolstø, 2001; Sadler, 2004a; Sadler et al., 2006; Walker & Zeidler, 2007). Regarding the nuclear power plant planned to be built in Sinop, for example, students, teachers, academicians, various institutions and organisations and the public are on the horns of a dilemma, and individuals who experience the decision-making process with their different perspectives about various aspects of the issue can approach the matter with the multidimensional structure of SSI and, upon making a cost and benefit analysis, they display either a positive or negative or undecided attitude about the issue. Again, it can be said that many controversial issues such as surrogate motherhood, glucose tolerance testing and abortion are discussed in the society and media, that different evaluations are made by different experts and that, as a result, a connection is established between science and society. These issues, which concern all humanity, have also become an important part of science education in recent years. Teachers play an important role in the effective transfer of SSI into the classroom as in every change in education (Lee, Abd-El-Khalick, & Choi, 2006). When a researcher, teacher or pre-service teacher decides whether the content of a subject includes a socio-scientific situation, they have to consider whether it is scientific, whether it causes a dilemma for the individual, whether it includes the science, society and technology dimensions, whether it is open-ended, whether it reflects multiple perspectives, and the importance of ethical, moral and emotional values (Evren & Kaptan, 2014). Teachers have great responsibilities in the teaching of SSI, and science teachers are expected to be equipped in this field. For an effective SSI teaching process, as a matter of fact, it is important that science teachers have knowledge and awareness of what SSI are and how they are related to the aims of science education (Sadler et al., 2006). Many research findings undoubtedly show that the teachers do not have the basic knowledge about SSI, the necessary information about the methods and techniques they can use in the process, and how these issues can be taught (Saunders & Rennie, 2013). In the literature about SSI, which is increasing in importance in Turkey, no study examining the perception of science teachers about these issues and the teaching of these issues has been found. Considering that the literature offers limited studies conducted with teachers (Han Tosunoğlu, 2018; Sezer, 2017; Sönmez, 2015), it gives hope to believe that positive outcomes will be achieved by identifying the SSI awareness of science teachers, who are the most important components of the teaching process and curriculum practitioners, and their perception of the process of teaching SSI, which is important for raising science-literate individuals. The present study

aimed to analyze the perception of science teachers on socio-scientific issues and teaching them. For this purpose, answers were sought for the following questions:

1. What is the perception of science teachers on SSI?
2. What is the perception of science teachers on the involvement of SSI in science teaching?

2.   Method

In this study, in which science teachers' perception of SSI and its teaching was examined, the qualitative research paradigm was taken as the basis for the study group, data collection tool, data collection process and data analysis dimensions. The subheadings related to this section are presented below in sequence:

2.1. Study Group

The study group of the research study consists of all science teachers (a total of 22 science teachers working in 7 secondary schools) in the central district of Sinop province, Turkey, in the 2015-2016 academic years. The *convenience sampling* method, which is a purposeful sampling method, was used in order to determine the participants of the study. Convenience sampling is based on elements that are completely existent, easy-to-reach and fast (Patton, 2002). Table 1 shows data on the demographics of the science teachers participating in the study in terms of gender, year of seniority, the department they graduated from and the school year in which the course is taken.

Table 1. *Demographic Characteristics of the Science Teachers*

Science Teacher	Gender	Years of seniority	Graduation	Class level
ST1	Female	1-5 years	Science teaching	5-6
ST2	Female	15 years and older	Chemistry teaching	6-7-8
ST3	Male	15 years and older	Chemistry	5-6-7
ST4	Male	11-15 years	Science teaching	5-6
ST5	Male	6-10 years	Science teaching	5-6-7-8
ST6	Female	1-5 years	Science teaching	5-6-7
ST7	Female	15 years and older	Chemistry	5-6-7-8
ST8	Male	15 years and older	Chemistry	5-7-8
ST9	Male	15 years and older	Chemistry	5-7-8
ST10	Female	15 years and older	Biology teaching	6-7-8
ST11	Female	11-15 years	Science teaching	5-6-7
ST12	Female	6-10 years	Science teaching	6-7
ST13	Male	6-10 years	Science teaching	6-7-8
ST14	Female	1-5 years	Science teaching	5
ST15	Male	6-10 years	Science teaching	5-8
ST16	Female	15 years and older	Chemistry	6-7-8
ST17	Female	15 years and older	Physics teaching	5-6-7-8
ST18	Male	15 years and older	Chemistry	5-7-8
ST19	Female	6-10 years	Science teaching	5-6
ST20	Female	15 years and older	Biology	5-6-7-8
ST21	Female	15 years and older	Chemistry teaching	5-6-7-8
ST22	Female	6-10 years	Science teaching	5-6-7-8

*ST: Science Teacher

Fourteen of the science teachers are female and eight are male. Regarding the seniority of the teachers, it is seen that three teachers have 1-5 years, six teachers have 6-10 years, two teachers have 11-15 years, and eleven teachers have 15 or more years of seniority. The faculty departments from which they graduated include science teaching (n=11), chemistry

department (n=6), chemistry teaching (n=2), biology teaching (n=2) and physics teaching (n=1) graduate teacher seen. Science teachers teach science classes at different school year levels.

2.2. Data Sources

The data sources of the research were developed by the researchers. The "Personal Information Form" for receiving personal information of the science teachers and the "Interview Form for Teaching Socio-scientific Issues" for receiving their opinions about socio-scientific issues and their teaching were used in the research. The Personal Information Form contains information on the science teachers' genders, years of seniority, the departments they graduated from and the year levels of the classes they teach. The questions in the "Interview Form on Teaching Socio-Scientific Issues" prepared by the researchers were presented to the opinion of two science education experts. As a result of expert opinions, some probing questions were removed and some added. In case, for instance, an interviewee could not answer the first question "What comes to your mind when socio-scientific issues are mentioned? Can you give an example?", it was deemed suitable to provide such clues as "nuclear power plants, organ donation", etc. The final form includes questions and probes about (i) the teachers' knowledge of socio-scientific issues, (ii) the methods and techniques they use in their classroom education, (iii) the resources they use, (iv) the benefits these issues provide to students, and (v) their suggestions about classroom teaching of SSI. The interview form was used in the focus group interviews made with science teachers during the research process. Moreover, during focus group interviews, one of the researchers recorded the observed situations with observation notes. To raise the reliability of the research, the participant made observations in all group interviews and took personal notes based on observation data. The notes taken during the process provided ease by reminding the process during data analysis and interpretation of the data.

2.3. Implementation Process

The data of the study were collected by focus group interviews made with science teachers working in secondary schools in the central district of Sinop province, and by observation notes. The data collection process of the research is shown in Figure 1:
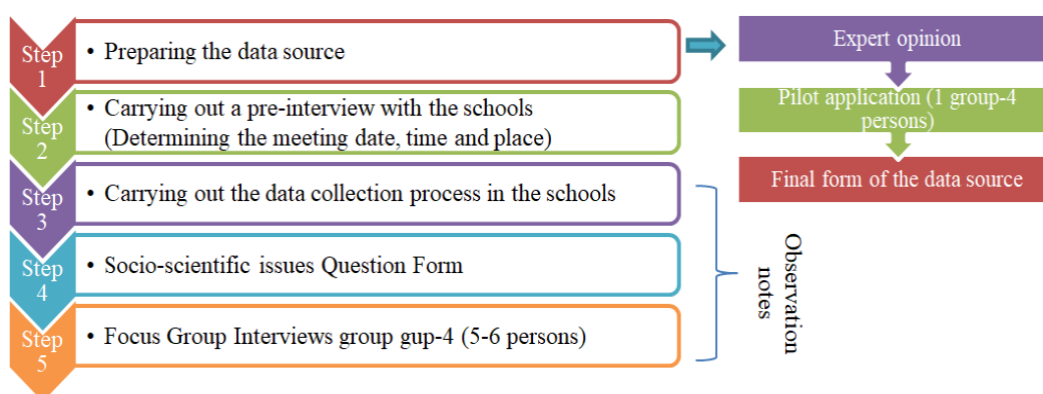
Figure 1. *Data Collection Process*

Managers and science teachers of the secondary schools in the central district of Sinop province were interviewed prior to the implementation, necessary permissions were obtained, and appropriate meeting time with teachers was determined. Each school included in the scope of the application was interviewed separately. Interviews with teachers from schools that are close to each other were held in common places and times. Teachers made self-

sacrifices for the interview process and participated in the interviews on a voluntary basis. Together with the teachers, focus group interviews were conducted with groups of 5-6 people within the context of teaching SSI. A focus group interview is an interview which is held on a specific topic with a small group of participants. Groups generally consist of persons with similar experience, and the process enables to obtain rich and high-quality data with various perspectives (Patton, 2002). In the present study, an interview was held with science teachers who apply the same science course curriculum. Many aspects such as the statements, views and mimics of the participants who answered the main and probing questions asked during focus group interviews were taken into consideration, and the process was recorded by one of the researchers. In order to raise the reliability of the study, one of the researchers made observations in all group discussions and took personal notes based on observation data. The notes were taken during the process provided convenience by reminding the process during data analysis and interpretation. The participant-observer occasionally interacted with the study group and reflected all the data they obtained in their personal notes.

Meeting places were the meeting rooms of the secondary schools, the teachers' room or the seminar rooms. Interviews were set out of school hours and preferably at the end of classes. Interviews lasted about 1.5 to 2 hours. The interview process was recorded with a voice recorder with the permission of the teachers.

2.4. Data Analysis

The qualitative data obtained from focus group interviews were subjected to deductive content analysis. In the present study, the transcript of the data obtained as a result of focus group interviews was first transferred to the computer environment. The data obtained through the interviews made with the teachers participating in the research were analyzed independently by the researchers, and then the support of a third expert was taken to determine the categories and codes. Each teacher was evaluated in his or her own account and compared with their written answers, and efforts were made to enable consistency in the presentation of the findings. In this way, it was tried to create a valid coding table. After examining the consistency of the codes with the answers given, frequency values were determined. The codes obtained were collected under certain categories and data analysis process was completed in this way (Maxwell, 2005; Strauss and Corbin, 1998). The categories, codes and example statements for a question that was subjected to content analysis are given in Table 2:

Table 2. *Example Categories, Codes and Teacher Views from the Interview Form on Teaching SSI*

Categories	Code	Example Statement
Social	Their being social	*"...SSI are issues that concern all society."*(ST6)
Personal	Their causing a dilemma	*"It will force us to decide in a dilemma."*(ST4)
	Their being arguable	*"Other science issues are proven issues, they don't need your comments, but these are issues open to discussion."*(ST8)

2.5. Validity and Reliability of the Research

In order to ensure *validity*, it was tried to keep the interview time long in the current study. While presenting the findings that were reached through the data obtained from the data sources, the supporting element among the data was taken into consideration and an effort was made to enrich the explanations. During the implementation process of the research, the science expert participated in the process along with the researcher and acted in cooperation from the beginning to the end. All documents were examined by the expert, the researcher was given feedback where necessary, and the course of the research was decided together. Direct quotations from the participants' opinions were included and the data were tried to be conveyed objectively without comments. Although reaching all the teachers who work in the central district of Sinop province might not be sufficient for a generalisation, it is considered important in terms of sustainability of the study.

In order to ensure *reliability,* the researcher's persistence in objectivity regarding the data obtained from the study was taken into consideration, the categorisations and coding derived from the data were carried out by the two researchers at different times, and they were continually compared to reach a consensus. When the inter-coder reliability between the two researchers was calculated using the reliability formula proposed by Miles and Huberman (1994), the percentage of agreement between the researchers was determined to be .92 and a third expert was consulted when deemed necessary. This rate that was determined is considered reliable according to Miles and Huberman (1994).

3. Findings

Research findings are sequentially presented under subheadings.

3.1. Findings relating to the science teachers' perception of SSI

The findings involving the science teachers' opinions about the nature of SSI are given in Table 3:

Table 3. *The Science Teachers' Views on the Nature of SSI*

Categories	Code	Science Teachers	f
SSIs nature	Social issues	ST3,ST4,ST5,ST8,ST9,ST12,ST13,ST16,ST17,ST19,ST20	11
	Issues involving a dilemma	ST22	1
	It is about science literacy	ST15	1
	I have no idea	ST1,ST2,ST6,ST7,ST10,ST11,ST14,ST18,ST21	9
Examples	Nuclear power plants	ST5, ST12, ST15, ST20	4
	Technological developments	ST3,ST6	2
	Recycling	ST7, ST19	2
	Global warming	ST8	1

Hydroelectric power plants	ST10	1
Genetic tests	ST22	1
No examples	ST1, ST2, ST4, ST9, ST11, ST13, ST14, ST16, ST17, ST18, ST21	11

As can be seen in Table 3, half of the science teachers (f=11) stated regarding the definition of SSI that they are social issues, that they are issues which put a teacher in a dilemma, and that they are issues relating to the science literacy of a teacher. Many other teachers (f=9) stated that they do not have an idea/knowledge about SSI. Examples from the science teachers' statements are given below:

> "Unification of society and science comes to my mind. They can be scientific issues related to society." (ST8)

> "SSI is a concept I already know about. Those issues which push us into a dilemma are called SSI. In other words, they are issues which make it difficult for individuals to decide and which put them in a dilemma. (ST22)

> "Could it be about science literacy? That's because I think science literacy and SSI are similar concepts. I can say that all subjects that improve science literacy are socio-scientific. (ST15)

As it is seen in the statements, teachers' explanations about SSI are more about their being issues which are social, which cause a dilemma and which relate to science literacy. On the other hand, teachers who did not have any idea about SSI stated that they had not heard the concept of SSI before.

Assessed in a general way, it was determined that there was a teacher who was familiar with the concept of SSI and had an idea about it. It was observed and determined by the researchers during interviews that the other teachers who made a definition about SSI rather took the concept of "socio-scientific" as the basis for their belief that these issues are social in nature. Observer notes also indicated that teachers thought for a long time, looked at each other, and had difficulty in defining SSI. In fact, when defining SSI, one of the teachers tried to reach a conclusion based on the concepts of socio- and science and eventually said, "*...maybe it is anthropology.*" It can actually be said that an almost similar situation was encountered in all of the interviews. As a matter of fact, the teachers thought for a long time about the meaning of the words related to SSI to develop an opinion.

According to Table 3, the science teachers' examples of SSI include nuclear power plants (f=4), technological developments (f=2), recycling (f=2), global warming (f=1), HEPP (f=1) and genetic tests (f=1). It was found that a majority of the teachers (f=11) could not give examples. Although the physical conditions of schools, ecosystem, energy conversions and epidemic diseases are not considered as SSI, they were given as examples by teachers. It was mentioned in observer notes that teachers were able to give examples relevant to their SSI definitions and that half of them failed to give examples of SSI. It was also observed that most of the teachers who could not give examples had difficulty in defining SSIor could not define it at all. In fact, a teacher's statement of "*It is certainly related to society but I can't remember it*" also supports this finding.

Table 4 presents the findings obtained from the explanations made by the science teachers after they were asked a probing question about the characteristics that distinguish SSI from other science issues:

Table 4. *The Science Teachers' Explanations about SSIs Difference from Other Science Issues*

Categories	Code	Science Teachers	f
Social	Their being social	ST1, ST6, ST9, ST10, ST12, ST13, ST14, ST15, ST16, ST18, ST20	11
	Their being preventable	ST2, ST5, ST7, ST11, ST20	5
Personal	Their causing a dilemma	ST3, ST4, ST8, ST17, ST22	
	Their being arguable	ST8, ST19	

As seen in Table 4, half of the teachers (f=11) considered SSI to be different from other science issues due to their sociality. Some of the teachers (f=5) stated that these issues are different from other science subjects as they are preventable. Teachers also stated that SSIare different from other science issues because they create a dilemma (f=5) and because they are arguable (f=2). Examples of teacher statements are as follows:

"... These issues put us in a dilemma." (ST4)

"There are scientific issues which correspond to the needs of society, that is, which involve more common ground for society. (ST15)

"SSI are issues that concern the entire society." (ST6)

"Other science issues are proven issues, they don't need your comments, but these are issues open to discussion." (ST8)

According to their statements, the science teachers explained that SSI are different from other science issues because of being social, creating a dilemma, being preventable and responding to a need. As a general assessment, it was determined that the teachers thought that the most important difference in SSI is about their being social issues. It was observed and determined by the researchers that the reason for this was the examples given during interviews. The statement of the teacher numbered 10 (ST10) "*I think that issues like organ donation and nuclear power plants are issues that concern society. Therefore, they are different from other science issues. They are open to comment...*" indicated that ST10 did not have any idea about the nature of SSI initially but made an inference based on the examples given.

In the study, the findings obtained from the explanations of the science teachers about the issues that put them in a dilemma when making decisions about SSI are given in Table 5.

Table 5. *The Science Teachers' Explanations about the Issues in Which They Remain in Dilemma*

Categories	Code	Science Teachers	f
	Nuclear power plants	ST1, ST4, ST5, ST9, ST12, ST13, ST15, ST17, ST20	9
	GMO	ST6, ST8, ST10, ST18, ST19, ST16	6
Issues	Sugar intake during pregnancy	ST3,ST7, ST14, ST17	4
	Use of medicine	ST1, ST2, ST11	3
	Genetic tests	ST22	1

As presented in Table 5, the examples given by the science teachers about controversial/dilemma issues included nuclear power plants (f=9), GMO (f=6), glucose tolerance test (f=4), use of medicine (f=3) and genetic tests (f=1). Some of the explanations made by the teachers are as follows:

> *"As a person from the Black Sea region who experienced a nuclear disaster, I'm in a dilemma. I'm against the establishment of nuclear power plants, but I'm also aware that clean energy isn't enough for so many people." (ST15)*

> *"While I was pregnant with my first child, I had a glucose tolerance test made on me but I didn't do it with the second child. As a result of my research, I decided to not have it in the second child." (ST7)*

When the statements of the science teachers are examined, it is seen that all of the examples given by teachers who had an idea about SSI were relevant to SSI. It was observed that most of the teachers expressed this during the interview. For instance, T18, who had no idea about SSI in the first question, referred backed to the first question in the next question and gave the example of GMO.

After the above question, it was asked to teachers as a probing question what source(s) they used for the issues about which they remain in dilemma and wonder about. Findings obtained from focus group interviews are presented in Table 6:

Table 6. *The Science Teachers' Explanations about the Sources They Use for Making Decisions*

Categories	Code	f
	Internet	10
Media	TV	7
	Newspapers	5
Authority	Expert opinion	7
Scientific publications	Articles	3

Table 6 shows that, when they make decisions on the issues about which they experience a dilemma, many of the teachers take the Internet (f=10), TV (f=7) and expert opinions (f=7) into consideration and benefit from newspapers (f=5) as media elements, whereas three teachers make their decisions based on the scientific articles they read. Some of the explanations made by the teachers are as follows:

> *"The result of the triple screening test I had during pregnancy was risky. I searched on the Internet for the advantages of having it and my doctor had already recommended it. I also searched online the drawbacks of having it…"* (ST22)

> *"I mostly examine scientific studies and articles because they are supported with data."* (ST19)

3.2. Findings Involving Science Teachers' Perceptions of SSIs Place in the Science Curriculum and Its Inclusion in the Curriculum

The findings obtained from the views of the science teachers regarding to which learning area socio-scientific issues belong are presented in Table 7:

Table 7. *The Science Teachers' Views about the Place of SSI in the Curriculum*

Categories	Code	Science Teachers	f
Area of learning	STSE	ST1, ST7, ST8, ST10, ST22	5
	Affect	ST11, ST14, ST21	3
	Knowledge	ST12, ST19	2
	I don't know	ST2, ST3, ST4, ST5, ST6, ST9, ST13, ST15, ST16, ST17, ST18, ST20	12

*STSE: Science-technology-society and environment

Regarding in which learning area of science curriculum SSI is situated, answers of the science teachers included STSE (f=5), affect (f=3) and knowledge (f=2). Many of the teachers (f=12) stated that they do not know to which learning area SSI belongs. Some of the explanations made by the teachers are as follows:

> *"It's in the human and environmental unit. I don't know about learning areas but I can talk about units."* (ST3)

> *"We write the gains in notebooks. Global warming effects, earthquakes, effects of earthquakes, etc. but I don't know about learning areas. (ST13)*

> *"It belongs to the learning area of STSE."* (ST7)

According to the statements of the science teachers, most of them do not know the learning area to which SSI belongs. The fact that, during focus group interviews, ST17 stated that "*Actually, I haven't examined the science curriculum. I act according to the annual plans. That's why I don't know about the learning areas of the curriculum*" and ST15 stated that "*Since our aim is to educate according to the annual plans, we don't actually have knowledge about the general aims of the program and its learning areas*" indicates that they do not have knowledge about the learning areas of the curriculum. This situation appears to suggest that teachers focus on the course process and therefore lack knowledge about the general profile of the curriculum.

In order to determine the views of the science teachers about SSIs inclusion in a learning area of the Science Curriculum, they were asked why socio-scientific issues are included in science course and their perspectives about it, and the findings obtained from the interviews are presented in Table 8:

Table 8. *The Science Teachers' Explanations about SSIs Inclusion in the Curriculum*

Categories	Code	Science Teachers	f
Skill Development	Thinking critically	ST2, ST3, ST14, ST19	4
	Problem-solving	ST1, ST22	2
	Decision-making	ST10, ST22	2
	Discussion	ST6	1
	Thinking creatively	ST14	1
Social	Producing solutions to problems	ST5, ST7, ST11, ST12, ST16	5
	Issues concerning society	ST4, ST17, ST8, ST15, ST17	5
	State policy	ST13	1
Undecided		ST9, ST18, ST20, ST21	4

As seen in Table 8, a majority of teachers (f=18) stated that SSIs inclusion as a name in a learning area of the Science Curriculum is a positive situation. No teacher considered it as a negative situation but four teachers (f=4) were undecided about it. Regarding the reasons for teachers' considering it to be positive, answers included their being issues that concern society (f=5), that they require producing solutions (f=5), critical thinking (f=4), problem-solving (f=2), decision-making (1), discussion (f=1), their offering an opportunity for using creative thinking skills (f=1) and state policy (f=1). Some of the explanations made by the teachers are as follows:

> *"I certainly consider it positive. These are issues that concern society. Students are the core of society. If we can influence students, their families will also be influenced. I think the best guidance for society can be made from classes."* (ST17)

> *"I also certainly consider it to be positive. The effects have become more common with these issues… Questioning individuals need to be raised to find solutions to some problems."* (ST5)

In general, it was seen that a majority of the teachers consider that the inclusion of SSI in the curriculum is positive and they stated that the reason for this is solution generation and skill development. It was determined that the teachers who were undecided stated that its applicability in courses might be low and that this is why they are undecided.

The findings obtained from the explanations of the science teachers about teaching socio-scientific issues in their classes are given in Table 9.

Table 9. *The Science Teachers' Explanations about Including SSI in Courses*

Category	Code	f
Approach	Yes	14
	No	8

When Table 9 is examined, it is seen that a majority of the science teachers (f=14) stated that they include SSI in science classes. Some of the teachers (f=8) said that they do not teach SSI in their courses.

Table 10 presents the findings about the teachers' answers to the question of how they teach SSI in the classroom.

Table 10. *Findings Containing the Views of the Science Teachers about How They Teach SSI*

Categories	Code	Science Teachers	f
Method and Technique	Direct instruction	ST1, ST2, ST3, ST7, ST9, ST13, ST15, ST19, ST20, ST21	10
	Case study	ST5, ST6, ST7, ST10, ST12, ST13, ST15, ST19, ST21	9
	Debate	ST4, ST7, ST12, ST13, ST14, ST17, ST19, ST22	8
	Discussion	ST4, ST10, ST12, ST14, ST15	5
	Project	ST8, ST16, ST17	3
	Brainstorming	ST5, ST13, ST22	3
	Question-Answer	ST2, ST3	2
	Six hats	ST10, ST13	2
	Observation	ST18	1
	Presentation	ST17	1
	Questionnaire	ST4	1
Principle	Doing and experiencing	ST10, ST11, ST15	3
	Induction and deduction	ST1	1
Source	Media	ST2, ST5, ST8, ST9, ST11, ST13, ST14, ST15, ST16, ST17, ST18, ST19, ST21, ST22	1
	Textbooks-sourcebooks	ST1	1

Table 10 shows that most of the science teachers (f=10) used the direct instruction method to explain SSI in their classes, while other teachers used the methods of case study (f=9),

discussion (f=5) and project (f=3). It was ascertained that teachers used the techniques of debate (f=8), brainstorming (f=3), question & answer (f=2), six hats (f=2), observation (f=1) and presentation (f=1). Three teachers stated that they teach SSI in their classes according to the principle of doing-experiencing and another teacher according to induction-deduction. As for sources, 13 teachers mentioned the media, and one teacher mentioned textbooks and sourcebooks. Some of the explanations made by the teachers are as follows:

> *"It is already included in the gains. Of course, I also teach it in my classes. I teach it as it is specified in the gains. Sometimes I give more details if there is time. I prefer direct instruction." (ST1)*

> *"I normally do these classes according to the curriculum, but occasionally I also use the debate and case study methods to ensure that they can make conscious decisions." (ST19)*

> *"I want them to do a questionnaire in the form of "Who among your relatives will want to donate their organs and who will not?", for instance..." (ST4)*

ST13's statement "*Many methods may be used actually, but I suppose it's easier to implement whatever the curriculum stipulates*" and ST20's statement "*I agree that I was actually doing according to the curriculum because I don't have any knowledge about how to apply it but different things have come to my mind when talking about it...*" indicate that they teach SSI based on curriculum gains but that they also refer to different methods and techniques.

As can be seen in Table 10, a majority of the science teachers (f=14) stated that they utilize the media / that the media should be utilized when teaching SSI in the classroom setting. The media elements that the teachers stated that they use / should be used included newspapers (f=13), the Internet (f=1), visual materials (f=1), public service announcements (f=1), documentaries (f=1) and TV (f=1), respectively. Some of the explanations made by the teachers are as follows:

> *"They have already utilized it in their research assignments. The presentations they prepare and bring include newspaper reports." (ST19)*

> *"I prefer to benefit from the Internet; it is very attention-grabbing for students." (ST22)*

It was observed that science teachers stated that they and their students benefit from the media in SSI education, but a few teachers stated that it is difficult to use the media under the present conditions. ST20's statement "*You've seen our school; not every class is equipped with technology, which is a requirement for the media...*" and ST21's statement "*I understand that the media is important in these matters. I wish we had the opportunity of offering children examples from the media...*", which they made to the researcher and the consultant in an interview break, show that they made a positive emphasis on the use of the media in SSI education but indicated the limitation of its use due to lack of technical opportunities.

> *"...I present sections from daily newspapers". (ST18)*

> *"Socio-scientific issues are very popular in the media, especially on TV. Like flu vaccines, genetic tests, etc. I guide students to do research from the Internet. (ST22)*

"I tell them to watch the morning news. I tell them to buy newspapers. I gave oral exam points to those who watched and told the news. But time arrangement and examinations are a source of significant distress." (ST16)

Findings obtained from the science teachers' views about the benefits that SSI classroom education will offer to students are given in Table 11.

Table 11. *The Science Teachers' Views about the Benefits/Skills That SSI Education Provided to Students*

Categories	Code	Science Teachers	f
Life skills	Critical thinking	ST1, ST4, ST8, ST9, ST11, ST16, ST20	7
	Decision-making	ST2, ST8, ST17, ST19, ST21, ST22	6
	Communication	ST2, ST6, ST12, ST14	4
	Creative thinking	ST15, ST22	2
	Teamwork	ST5, ST19	2
Scientific process skills	Inferring	ST7	1
Engineering and design skills	Being able to produce solutions	ST3, ST10, ST13, ST18, ST22	5

According to Table 11, the science teachers listed the benefits/skills that SSI education contributes to students as follows: critical thinking (f=7), decision making (f=6), communication (f=4), creative thinking (f=2), teamwork (f=2), inference (f=1), ability to produce solutions (f=5). Some of the explanations made by the teachers are as follows:

"It is ensured that they learn the ideas of others. Communication is established among them. They also start looking for answers about things they wonder. This enables them to make their own decisions." (ST2)

"Students learn to question. They notice that not everything that is told to them is true. They gain the ability to criticise." (ST19)

The teachers pointed out that the process of teaching SSI has many contributions to students. Especially one of the teachers (ST1) who emphasised the decision-making skill said during an interview that "*Deciding is difficult for all of us. I'm sure the students will also have difficulty in these issues but it would still be good to experience this situation. Because they will also be learning to question*" and tried to support this opinion with examples from daily life (nuclear power plants, flu vaccines, etc.).

The findings obtained from the opinions of the science teachers about the difficulties they face in the teaching of SSI are given in Table 12.

Table 12. *The Science Teachers' Views about the Difficulties They Have in Teaching SSI*

Categories	Code	Science Teachers	f
Yes	Prejudices of students	ST4, ST5, ST6, ST11, ST16, ST17, ST18, ST19, ST20, ST22	10
	Readiness of students	ST2, ST7, ST10, ST11, ST17, ST21	6
	Teachers' lack of knowledge	ST13, ST15	2
	Insufficiency of class hours	ST15	1
No		ST1, ST3, ST8	3
Undecided		ST9, ST12, ST14	3

As it can be seen in Table 12, most of the science teachers (f=16) stated that they have difficulty in teaching SSI and some (f=3) stated that they do not. Three teachers stated that they are undecided. The teachers stated that the difficulties they experience are caused by the prejudices of students (f=10), the readiness level of students (f=6), students' lack of knowledge (f=2) and insufficiency of class hours (f=1). Some of the explanations made by the teachers are as follows:

"Of course, we occasionally suffer difficulty. Sometimes, the age of students is too small. They're not old enough to comprehend such things. Even students in the 5th and 6th years can have difficulty in understanding such issues." (ST2)

"There is a prejudice among students. They come with a complete conviction on some information and it is not possible to overcome it. Teaching critical thinking becomes very difficult." (ST4)

When the statements of the teachers are examined, it is seen that they emphasise the elements of prejudice and age. It was determined that the teachers have difficulty in this situation and that any controversial issue they discuss with the students cause a negative attitude in them. One of the teachers (ST6) stated that *"…believe me that it's so hard to open the mind of some students to try to explain that different views also exist…"* and this supports the opinion of many teachers. However, in general, it was also observed that most of the teachers find it positive to include controversial issues in the teaching process and they agree that the outcomes will take time.

Then, within the scope of the research, the science teachers were asked to make suggestions about the teaching of SSI. The findings obtained from the interviews made with teachers are given in Table 13:

Table 13. *Suggestions of the Science Teachers about the Teaching of SSI*

Categories	Code	Science Teachers	f
Out of classroom	Interviews should be made.	ST2, ST3, ST5, ST7, ST8, ST9, ST11, ST16, ST17, ST18, ST21	11
	Experts should attend classes.	ST1, ST15, ST19, ST20, ST21	5
	Real-life practices should be made.	ST2, ST3, ST8, ST22	4
	Tours should be organised.	ST5, ST8	2
	Seminars should be organised.	ST20, ST21	2
	There should be a science applications course.	ST7, ST10	2
In classroom	Material support should be made.	ST13, ST14	2
	Noticeboards should be made.	ST6	1

As seen in Table 13, many of the science teachers (f=11) stated that, within the scope of teaching SSI, interviews should be made with those who carry out studies on the subject in various fields outside the classroom. Suggestions of other teachers included bringing experts to classes (f=5), carrying out daily life practices (f=4), organising tours (f=2), organising seminars (f=2), and discussing relevant subjects with selected students (f=2). Two teachers (f=2) stated that there will be sufficient time for teaching these issues only when there is a "science applications" course, two others (f=2) stated that the necessity for sufficient support in terms of materials, while one teacher (f=1) said that information on SSI has to be provided through noticeboards. Some of the explanations made by the teachers are as follows:

> *"Bringing experts will be helpful. I think it would be very interesting for students if relevant experts attended classes. We tried to do it before, but they didn't come because they didn't have to. It has to be compulsory for this to happen. It can only be possible by cooperation with the national education and other ministries." (ST1)*

> *"This can be taken out of school. Environments can be created in schools for this. They can learn better by organising trips and observations after obtaining necessary permits." (ST5)*

In the end of the interviews, teachers pointed out that they mostly wanted to reach the field experts and that these experts should be brought together with students. They stated that they think these will make positive contributions to themselves and students. For example, one of the teachers (ST15) said that "*There is no need to go far; everyone in Sinop is against*

nuclear energy, for example. I wish people and children were informed through seminars..." and similar opinions were expressed during many interviews.

Most of the research participants agreed that they need seminars, meetings and practical activities which will contribute to them and introduce and present the program framework to them. Stating that there are many questions they want to ask about these issues, the teachers pointed out that they need methods and techniques which they will use in the process of teaching these issues in the classroom and that they want to receive training about these. One of the teachers (ST10) said during an interview that "*The truth of the matter is different; yes, there is the curriculum but believe me that attending our classes is the only thing we can do due to the heavy load of our job. I wish they could give us training and we could practice it in our classes...*", and many teachers who agree with this idea emphasised that they want to have information on the issue and make applications towards the educational process.

4.   Result and Discussion

In the present study, science teachers' perception of SSI was examined in 4 categories (SSIs nature, difference of SSI from other science subjects, the issues about which teachers remain in dilemma in decision-making, and the sources that teachers use in decision-making). Firstly, when the answers of the teachers were examined, it was determined that most of the science teachers did not know about SSI and did not hear of this concept before. Many participants in the group described SSI as *social issues* based on lexical meanings. It was observed that most of the teachers in the group did not express opinions. Similarly, Han Tosunoğlu and İrez (2017) stated in their study that biology teachers generally expressed SSI as 'scientific issues that produce solutions to social problems'. It was found within the scope of the research that only one teacher defined SSI as '*issues that put one in a dilemma*'. This indicates that only a small number of teachers are aware of the nature of SSI. Similar to the findings of the present study, Han Tosunoğlu (2018) conducted a study with biology teachers and found that the teachers did not know what SSI means. However, in a study conducted with prospective science teachers, Sıbıç (2017) found that many prospective teachers had previously encountered the concept of SSI. Similarly, in a study conducted with teacher candidates, Yolagiden (2017) ascertained that pre-service teachers' attitudes towards socio-scientific issues were above the intermediate level. This situation is thought to be due to the fact that SSI teaching, which has gained importance in recent years, has started to find a place in university education. A majority of science teachers stated that SSI differ from other science issues due to being social in nature. The teachers were subsequently asked to give examples of the situations which push them into a dilemma when making decisions in daily life. The examples given by them based on their own experiences varied considerably, but a majority of them were identified to be SSI. Many of the teachers who were in the decision-making process about SSI stated that they use the Internet as a source. This shows that teachers tend to use the Internet instead of scientific studies for easy accessibility. The results obtained from this study show that a significant number of science teachers do not have the level of knowledge which is a prerequisite for SSI. As a matter of fact, it is believed that science teachers do not have sufficient knowledge about SSI and about the methods and techniques with which they would teach it (Topçu, 2017).

In the present study, many of the science teachers stated that they do not know which learning domain SSI belongs to in the science curriculum. Some teachers stated that they did not examine the science curriculum and the learning areas of the curriculum. When the findings of the research were examined, it was found that science teachers took the concept of *society* in the learning area of STSE as basis for formulating opinions about the learning area to which SSI belongs. Similar to the findings of the present research, Han Tosunoğlu and

İrez (2017) reached the conclusion in their study that the SSI perception of a significant majority of the biology teachers in Turkey and their general perspective about SSI education are not compatible with the current literature. This result indirectly suggests that teachers do not follow and examine current curricula.

The science teachers stated that they found it favourable for SSI to be included in the science curriculum. When the reason for their positive opinion was asked, it was determined that the reason of this situation was that they thought it would increase the development of students' critical thinking, problem-solving, decision making and discussion skills, and that it was included in the curriculum for the purpose of producing solutions. In their study conducted with science teachers, Lee et al. (2006) show that teachers considered the inclusion of SSI in their curriculum to be favourable. In the study, it was seen that some of the teachers were undecided about this issue. When the reason for this was asked, the undecided teachers stated that the teaching process of these issues could be difficult for various reasons (such as class size).

In the present study, it was found that the majority of teachers included SSI teaching in their classes. No teacher who stated that they did not include SSI instruction in their class activities was identified. The researcher determined that those teachers who included the teaching of SSI in their classes stated that they teach SSI in their courses by using the direct instruction and case study methods. In accordance with the nature of SSI, some teachers were found to use the debate and brainstorming techniques. Some teachers explained that many methods and techniques are available but they have difficulties in classroom practice due to various factors. It was found out that, in SSI education, most of the teachers benefited from newspaper reports due to their easy accessibility and low cost. It was found out that most of the teachers benefited from newspaper reports because of their easy accessibility and low cost. In general, it was observed that the science teachers stated that they and their students benefited from the media in the teaching of SSI, but a few stated that it was difficult to use the media due to the lack of necessary means. Topçu (2017) emphasised that the most important deficiency for science teachers to use the methods and techniques they determine to teach SSIs better is that teachers do not have sufficient resources. Han Tosunoğlu and İrez (2017) reported that teachers generally use methods and techniques to engage students in the course and that inclusion in any subject matter does not occur. They discovered that teachers generally use techniques that are not directly related to the teaching of SSI, such as the use of smart boards, travel arrangements, and use of visuals.

The present study researched the opinions of science teachers about the contributions of discussing SSI in the classroom to students. When the results obtained from the findings are examined, it is seen that a majority of the teachers' answers such as critical thinking, finding solutions and communication are similar to the aims of the teaching of SSI. Similarly, Han Tosunoğlu and İrez (2017) reported that the participants thought that, as a result of SSI discussions, their students would acquire skills such as recognizing different opinions on a certain subject, approaching situations with different perspectives and questioning them.

The science teachers stated that they experienced difficulties when they included controversial topics such as SSI in their classes. It was found that the most important reason for this was the prejudices of the students. Many teachers stated that the age of the students was too small to understand such controversial issues and to have the skills to discuss them. Two teachers said that they do not have sufficient knowledge to teach these issues. It was seen that three teachers stated that they had no difficulty in teaching related subjects, while three others were hesitant to answer.

Teachers, who apply the curriculum, made suggestions about the teaching of these issues. When the findings were examined, it was found that most of the teachers stated that the teaching of SSI should also be performed out of the classroom. This can be indicating that the teachers think that the school environment is not sufficient for learning these issues. Teachers stated that students can only learn these issues together with experts. They argued that interviews can be made or experts can attend classes for this purpose. Some teachers reported that learning these issues is only possible by applying them in real life. Two of the teachers stated that they should be given seminars about these issues. This situation can be interpreted as teachers' feeling themselves insufficient and open to improvement.

According to the findings of the study, the science teachers stated that the elective course of science applications should be dedicated to SSI education because of insufficient course hours. The teachers stated that when adequate material support is provided to schools, an appropriate learning environment can be created for SSI teaching. This desire of teachers can be interpreted as being aware of their deficiencies and desiring to improve themselves. Topçu (2017) pointed out that science teachers do not have sufficient in-service education on SSI and that they do not have the necessary materials for SSI education. Some of the teachers stated that there should be guide books which they consider to be instructive. The teachers said that they think that the evaluation phase of the controversial issues such as SSI should be different from the evaluation phase of other subjects.

In conclusion, considering the importance of SSI in national and international literature and based on the findings of this study, it is believed that science teachers in Turkey feel themselves inadequate regarding SSI and SSI education. Our findings suggest that the teachers think that it is important for them to have knowledge about the methods and techniques they will use for SSI education and have opinions about the ways of dealing with the problems they will face in the process. It is believed that each of the suggestions of science teachers, who are the implementers of the curriculum, will strengthen the SSI education process and that the suggestions derived from the present study findings will guide educational researchers, teachers and pre-service teachers.

5. Suggestions

- Application examples of SSI can be added to the science curriculum.
- SSI related science education can be added to undergraduate programs as elective or compulsory courses. Within the scope of this course, opportunities can be offered for prospective teachers to be informed about these issues, be aware of the issues and gain experience about the methods and techniques to be used in teaching the subjects before starting the teaching profession.
- In accordance with the suggestions of science teachers in the present research, the vision of the renewed science course curriculum, learning areas, application examples related to various method techniques, applied in-service trainings and seminars about the adopted learning approaches can be given to the teachers.
- Quantitative studies can be conducted by developing measurement tools to determine the views of science teachers on their perception and teaching of SSI. In this way, a wider impact can be achieved by reaching more participants.
- In Turkey, a teaching model can be developed and its effectiveness can be evaluated.

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CONTRIBUTION OF THE ELP USE ON LEARNING TURKISH AS A FOREIGN LANGUAGE

Research Article

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CONTRIBUTION OF THE ELP USE ON LEARNING TURKISH AS A FOREIGN LANGUAGE IN TURKEY

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Abstract

The study explored the contribution of the European Language Portfolio (ELP) on students' attitudes towards learning Turkish. The study was carried out with 30 foreign students studying at Bartın University the Language Education and Instruction Application and Research Center in the 2018-2019 academic year. The data collection instrument used in this study was semi-structured interviews which were administered to thirty students and an attitude survey designed on a five-point Likert scale with 43 items.

The analysis of the interviews indicated that the ELP can boost self-assessment and as a consequence, the students support having more positive attitudes towards learning Turkish. Additionally, it was declared that the students felt positive towards the ELP. And also according to the results of the questionnaires, they had positive attitudes towards learning Turkish since the purpose of their learning is to survive in Turkey and to pursue their education and career.

Furthermore, the findings of the study indicated the students admitted that the ELP was a tool for self-assessment; however since the students were learning Turkish, they sometimes had some problems comprehending the sentences which later turned into an advantage giving them a chance to practice their Turkish.

Keywords: self-assessment, foreign language learning, CEFR, European Language Portfolio (ELP)

1. Introduction

With the advancement in correspondence and data innovations the disappearance of the borders with the spread of globalization, and the world's getting smaller make it important to gain proficiency with a foreign language. As per these progressions, the enthusiasm for the Turkish language likewise increases.

Thanks to the interest in the Turkish language, those working in the field mostly focus on how to teach Turkish more effectively. In other words, the developments in the field of education have started to be applied in teaching Turkish as a second language.

Governments, organizations, schools and instructors look for the courses through which they can cultivate student self-sufficiency, inspiration and mentalities towards learning Turkish. There are numerous systems educators as well as understudies can embrace to support inspiration and student self-sufficiency inside and outside the study hall by the assistance of self-evaluation apparatuses. European Language Portfolio (ELP) is a standout amongst the most significant methods for presenting and building self-appraisal in foreign language learning. The ELP is an archive whereby language students through formal or casual instruction can record and consider their very own language learning and encounters of culture.

"Autonomy is the ability to take charge of one's learning. Students can take charge of their learning through self-assessment. Students' self-assessment should be a part of the pedagogic process in all educational systems as it satisfies their educational, emotional, psychological and social needs and promotes their self-actualization and personal growth (both emotional and intellectual)" (Holec, 1981). During the process of self-assessment, learners develop critical-analytical skills and better self-awareness. "Additionally, since they are treated as equal partners in the learning and assessment processes, their self-esteem and self-respect are enhanced and they develop a positive self-concept as their opinions are valued. This has, in turn, a positive impact on their motivation which constitutes a key feature of successful learners" (Ushioda, 1996, p. 36). By taking charge of their learning process and learning outcomes, learners can "appreciate their strengths, recognize their weaknesses and orient their learning more effectively" (Council of Europe, 2001, p. 192). Thus, the evaluation procedure turns out to be increasingly straightforward and it empowers students to accomplish their short and long haul objectives all the more effectively.

The ELP is considered as an effective self-assessment tool. Several researchers such as Glover, Mirici, and Aksu (2005) suggest that the ELP is a vehicle whereby learners can develop learner responsibility and autonomy by means of self-reflection and awareness. The Council of Europe (2006) also puts forward that the ELP is a tool to promote learner autonomy. Likewise, Glover, Mirici, and Aksu (2005, p. 90) stress that the ELP encourages language learning through motivating learners; therefore, enabling them to empower positive attitudes through learning a language. Also, learner style inventory and unit-based checklists help learners to realize their strengths and weaknesses, as a result, help them to gain positive attitudes towards learning.

2.   Literature Review

It is widely believed that students' learning potential increases when their attitude towards language learning is positive and motivation runs high. The examination into the association between uplifting frames of mind and effectively learning a subsequent language bolsters this straightforward perception. Self-evaluation is a key for independent language learning. It empowers students to screen their advancement, relate figuring out how to individual needs. Preparing students in self-appraisal has increased expanding currency and has been explored in a significant number of studies.

Autonomy

Holec (1981, p. 3) defines learner autonomy as the "ability to take charge of one's own learning", emphasizing that this ability "is not inborn but must be acquired either by 'natural' means or by formal learning". The first step towards developing the ability to take charge of one's own learning is when s/he accepts full responsibility for the learning process, knowing that success in learning depends mainly on himself/herself rather than on other people. This acceptance of responsibility entails the idea that people set out to learn, "in a systematic, deliberate way" (Holec, 1981, p. 3), the skills of reflection and analysis that enable them to plan, monitor and evaluate their learning.

2.1.   Learner Autonomy and Attitudes towards Foreign Language Learning

Language learning attitude, which has a strong relationship with autonomy, is of high importance and one of the determining factors for language learning. According to Dickinson (1995, p. 173-174), based on cognitive motivational studies, learning achievement and positive attitudes are necessary in order for learners to be more responsible for their own learning and to come to realize that their success or failure is not due to the external factors such as a good teacher over which they have no control, but due to the efforts they spend during the learning

process. In other words, positive attitudes can be said to be a prerequisite for learner autonomy. This clearly shows the strong relationship between attitudes and autonomy.

Autonomous learners mainly have positive attitudes towards learning a language. Fazey and Fazey (2001) suggest that autonomous learners, who can take decisions as to their learning and who are in control of the learning process, process positive attitudes and self-efficacy. It is stated positive attitudes is needed for learner autonomy. This is supported by Childs (2005, cited in Balçıkanlı, 2010) who argues that when learners have positive attitudes towards learning a language, there is a lot more possibility that they will develop learner autonomy and take charge of their own learning.

Finally, Dörnyei (2001) clearly states the close relation of positive attitudes and learner autonomy by pointing out that self-determination theory, which posits that freedom to have a say in language learning by having the right of choosing. Therefore, we can say that promoting positive attitudes towards learning a language is very crucial for promoting learner autonomy.

2.2. The ELP as a Tool for Autonomy

The Council of Europe's educational projects has always emphasized the importance of learner autonomy (Little, 2002). In the Principles and Guidelines, it is explicitly mentioned that the ELP is a tool for learner autonomy and it develops the capacity for independent language learning. It is also insisted that it is the property of the learner, all of which imply that learners aim to gain autonomy by exercising their ownership by using the ELP to plan, monitor and evaluate their learning (Council of Europe, 2004). Kohonen (2001) states that students can have an idea of what they can do with the language in concrete situations and tasks; so the functional "can do" statements can help them understand and assess what they can do with their language in specific contexts. Being the core elements of learner autonomy, planning, monitoring and evaluating learning help students to develop metacognitive and metalinguistic awareness by enabling reflection on the learning processes and target language (Ushioda & Ridley, 2002).

In terms of goal setting through the ELP to advance learner autonomy, the descriptors and self-assessment checklists in the ELP promote metacognitive awareness of different skills, linguistic forms, and strategies of learning. In this way, students see the aims of their language learning in a more specific way. As they gradually understand the descriptors, they use them to set their aims by using the "I can…" statements (Kohonen, 2004). There are different ways to use descriptors and checklists to help learners set learning objectives. Some teachers get their learners to set short-term objectives to focus their learning on for a few weeks and then set new goals by reflecting on „I can do" objectives; some teachers get their learners to establish their own long-term learning goals at the beginning of the course; and some enables their learners to achieve their aims by writing the descriptors of a certain level on a poster and asking students to put their names on it as they achieve a particular descriptor (Little & Perclova, 2001).

Choosing and/or activities and materials is also an indispensable aspect of learner autonomy that can be facilitated through the ELP. Kohonen (2004) states that seeing options, making choices, reflecting on the processes and outcomes and making new action plans help students develop more autonomy in their learning.

The teachers in the Finnish project found that independent student learning is enhanced when students are not given ready-made materials, activities or tasks, but when they are given assignments that were open enough to leave space for their own choices and to create their own materials. Little and Perclova (2001) also suggest building up a bank of home-made learning activities if the learners regularly create exercises in this way.

Regarding reflection fostered through the ELP, learners can reflect before they take an active role in a learning activity or communicative task by setting learning goals in the biography (planning), while they are performing the activity or task (monitoring), and after they have completed it (evaluation) by choosing the materials to include in the dossier, reviewing the learning goals set in the biography and adding more information on their profile of language skills in the passport (Little & Perclova, 2001). In developing the Finnish ELP Project, Kohonen (2004) focuses on the pedagogical significance of the ELP as a tool for reflective learning and he explores reflection based on students' self-understanding as language learners in the learning process. In this project, to introduce reflection, the teachers begin with the students themselves as language learners. They develop questions to guide students through reflecting on their learning in general as students and their language learning processes and aims in particular. The questions explore what students see as their strengths and weaknesses as a student and as a language learner; what goals they wish to set for the course and what they will be doing to reach these goals; how they might improve their working habits and improve their participation in groups, and so forth. Kohonen (2001) states that facilitating students to reflect on their learning processes and outcomes increases the visibility of the language learning since the goals, processes and the outcomes of language learning become more transparent to the students and they can see their progress of learning over time in terms of their linguistic abilities and study skills. Kohonen (2004) suggests that before using the self-assessment grid right away, students should be taught to be more reflective on their learning processes.

Another crucial aspect of learner autonomy, carrying out self-assessment, can be carried out in all 3 components of the ELP. The passport entails learners to assess their proficiency using the scales and descriptors derived from the Common European Framework. This kind of assessment forms as a summative assessment. The biography provides regular goal setting, which learners can do only if they regularly assess their own learning progress. When learners review their learning targets, they can write a short self-assessment on whether they have achieved their objectives, if so with what degree, etc. Lastly, the dossier also requires self-assessment while the learners select the material to include in the dossier. The self-assessment that is carried out in the biography and dossier components has a formative assessment function (Little & Perclova, 2001).

2.3.   The ELP as a Tool for Improving Autonomy

A language learner having an ELP should do the following items which direct them to be inevitably an autonomous learner (Little, 2004):

• Know what their whole language skills are according to the common reference levels and reflect on the next targets of theirs in order to improve their learning.

• Give more importance to productive skills (such as, writing and speaking) (which many learners try to avoid) as they see that their improvement makes sense in the future.

• Reflect on the learning styles that are suitable to them so they learn how to learn which makes their job and also their teachers' job easier. This may also help them learn other languages, which leads to plurilingualism objectives of the ELP.

• When they discover the transparency of the targets of ELP, they can clearly see how their learning improves so they are keener on being engaged in the activities especially in communicative ones.

As ELP helps the teacher to convert any communicative activity into a recorded task and plan for individuals and the whole class both in short term and long term, and use a portfolio

approach in the assessment criteria. Thus, the learners experience the process and the results of the implementation of ELP and become more autonomous in the long run.

2.4. Research Questions

1. What are the foreign university students' attitudes towards Turkish language learning?

2. How does the ELP promote undergraduate EFL foreign students while learning Turkish?

3. Methodology

3.1. Participants & Setting

The study was carried out in an EFL setting, at the Language Education and Instruction Application and Research Center at Bartın University. The participants were 30 (Female: 16, Male: 14), four-year undergraduate international students. Since the medium of instruction at the university is Turkish, these students were studying at the Turkish preparatory school prior to their faculty education. The students were B1 level students whose majors are different. The age of participants ranges from 17 to 24, with an average of 20.

3.2. Data Collection Instruments

The study employed a mixed-method in which both the qualitative and the quantitative data was addressed. While the quantitative data was gathered via an attitude questionnaire adopted from Dörnyei and Csizer (2006), qualitative data was gathered by means of semi-structured interviews with the students. A sequential-explanatory design was used in the study as the qualitative data were collected to validate the quantitative data.

3.2.1. Attitude Questionnaire

The quantitative data was assembled by an attitude questionnaire adopted from Dörnyei and Csizér (2006). There were eleven subscales in the questionnaire examining the degree of the participants' opinions and feelings about learning Turkish. Table 1 below presents the information about the scales in the questionnaire:

Table 1: The items of the questionnaire focus on the following domains:

Domains	Questionnaire item no.
Integrativeness	7, 12, 17
Attitudes to L2 Community	8, 10, 11
Cultural Interest	13, 14, 15, 16
Attitudes to learning English	18, 19, 20, 21, 22
Criterion Measures	24, 25, 26, 43
Ideal L2 self	27, 28, 29
Ought to L2 self	23, 30, 31
Family influence	32
Instrumentality promotion	9, 33, 34, 35, 36, 40
Instrumentality prevention	37, 38, 39, 41
Fear of assimilation	42

There are eleven subscales in the attitude scale. The first is integrativeness and cultural interest, which refer to desire to learn the language to communicate with members of the community (e.g. 17. How important do you think learning English is in order to learn more about the culture

and art of its speakers?); attitudes to L2 community and learning English are related to the set of beliefs that the learner has towards the L2 community of the target language and also towards the language, and these attitudes may control the learner's motivation to the learning itself. (e.g.11. How much do you like to meet people from English-speaking countries?'); criterion measures refer to assessments of the learners' intended efforts toward learning English which is related to Ideal L2 Self (Dörnyei, 2009, p. 31) and Ideal L2 Self attributes that a person would like to possess (e.g. I would like to study English even if I were not required); Ought-to L2 Self is relevant to the attributes that one believes one ought to possess to meet expectations and to avoid possible unexpected results. This dimension corresponds to the less internalized type of instrumental motive. (e.g. My parents believe that I must study English to be an educated person.'); and finally, instrumentality (Promotion-Prevention) refers to the idea that in today's globalized world, learning English as a lingua franca is a must for people to be professionally successful, and instrumental motives involve some personal goals such as career development, earning more money, or finding a good job (instrumental promotion), while there are some regulations of duties or obligations such as passing English to graduate (instrumental prevention) (e.g. How much do you think knowing English would help your future career?'). Participants made their responses on a 5-point Likert-type scale (1= 'not at all, 5= 'very much').

3.2.2. Student Interviews

Interviews were done with ten students at the end of the study after they had used the ELP the whole year. The students were chosen randomly. Eclectic random sampling model was used. From the class list, the researcher chose ten students randomly. The interviews were held in Turkish and were held in a friendly atmosphere explaining and paraphrasing the questions to the students in order to enable them to understand the questions better. All the interviews were recorded and transcribed. The students were interviewed individually about what kind of activities they did for the ELP and what they experienced. Interview questions included Turkish learning experiences of the students, their purposes for learning Turkish and expectation for future use of Turkish, and their attitudes toward Turkish and their experiences of the ELP use. The researcher introduced the ELP, implemented it and the questionnaires. Also s/he did the interviews with the students since s/he was the director of the Language Education and Instruction Application and Research Center.

3.2.3. Student European Language Portfolios

The BEDAF model of the ELP is used. The BEDAF young adult model was chosen because it is very user-friendly in terms of usage. It is very easy to understand as the English translations are also given for each item and very practical. Furthermore, the Language Passport document is very useful for the students and they liked it since it helps the students to validate their language learning and shows their proficiency levels in detail. The students were introduced with the ELP over two class hours; however, this time was very short to cover the ELP in depth. Hence, they were introduced to the components of the ELP and how to work with it was explained to them. The students were asked to share their portfolios with their class advisors. The aim of asking the students to share their portfolios was to have an idea about what they had done to achieve chosen objectives in the ELP, and to what extent they had been able to develop their self-assessment. One of the aims of the ELP was to develop self-assessment. Thus, seeing the portfolios of the students would enable the researcher to get an idea to what extent they could set their own objectives and achieve them

3.3. Data Analysis

This study includes both qualitative and quantitative data. To this end, the quantitative data for this study was gathered through the attitude scale. Furthermore, to support the research

findings, semi-structured interviews with the students were arranged. The quantitative data was analyzed using a statistical software program; namely, SPSS version 22.00. Qualitative data were recorded and analyzed by transcribing the interviews. Content analysis was done and constant themes were found, thematic analysis was done. Transcripts were read by the researcher to categorize the data to put them into relevant groups for a better analysis. Inter-coder reliability was also checked.

4. Results & Discussion

1. What are the foreign university students' attitudes towards Turkish language learning?

The analysis of the data gathered from the attitude questionnaire shed light on the first research question which questions foreign students' attitudes towards learning Turkish. There were eleven subscales in the questionnaire and the mean scores for each domain is given in table 4.2.:

Table 2: Mean scores of the scales in the questionnaire:

Domains	Scale item no.	Mean	SD
Integrativeness	7, 12, 17	4.47	1.40
Attitudes to L2 Community	8, 10, 11	4.38	1.91
Cultural Interest	13, 14, 15, 16	4.24	2.37
Attitudes to learning Turkish	18, 19, 20, 21, 22	4.55	2.58
Criterion Measures	24, 25, 26, 43	4.55	1.69
Ideal L2 self	27, 28, 29	4.35	2.01
Ought to L2 self	23, 30, 31	4.10	2.10
Instrumentality promotion	9, 33, 34, 35, 36, 40	4.37	2.75
Instrumentality prevention	37, 38, 39, 41	4.64	1.81

'Instrumentality prevention' had the highest score M: 4.64, and the 'ought to self' had the lowest score M: 4.10. Since it was a five-point Likert scale, the ought to self is not very low even if it was the lowest score. Therefore, it shows that all scales affect students' attitudes towards learning Turkish and all had high scores. Since these students will live in Turkey throughout their university education, they are aware that they need to learn Turkish to survive in Turkey and to pursue their education at university. Therefore, their motivation to learn Turkish is high and it includes all aspects mentioned in the questionnaire.

2. How does the ELP promote undergraduate EFL foreign students while learning Turkish?

Interview results about the students' perceptions on the effectiveness of the ELP while learning Turkish will be considered under these categories:

1) awareness of the language level,

2) evaluation and self-assessment,

3) motivation,

4) contribution of the ELP to learning Turkish, practice Turkish,

5) problems related to the ELP.

The findings from the interviews related to these nine headings are presented below.

Awareness of the language level

The students were asked what they liked most about the ELP, and most of the students stated that by the help of the ELP, they became aware of the language level they have and also what they can do in this level with the help of the language descriptors. They also stated that since they learn Turkish and the ELP is in Turkish-English, they had the chance to compare the levels which is while A1 level has simple utterances C1 has longer sentences and expressions. In this respect, it also showed them that when they improve their Turkish, they can also understand longer and more difficult sentences. One student mentioned:

"Yeah. Well, I found out what I know, thanks to it. Yeah, something pleasing. I learned my level." (Student 1)

Another student also stated:

"My favorite thing is that it gives me the opportunity to evaluate myself, where I am, where I am and I love Turkish." (Student 2)

Another student also mentioned the same issue:

"In this portfolio, it showed me where I had language problems. Sure, it showed me what I have to work on." (Student 3)

Another student also commented on this topic:

"You learn a new foreign language and see what level it is." (Student 4)

Another student also uttered:

"My favorite thing is I've learned things I don't know, so I've learned my mistakes." (Student 5)

Evaluation and self-assessment

When the students were asked what they liked most about the ELP most of the students mentioned about the chance of the evaluation and self-assessment. They stated that even if they see that their level is low or they cannot understand what the content of the level very well, they said that it is not negative, but actually positive since it gives them a chance to improve themselves. As the ELP is in Turkish and these students learn Turkish, they also had the chance to practice Turkish, therefore; it also enables them to evaluate their knowledge on the language. One student mentioned:

"My favorite thing about the European Language Portfolio is to evaluate myself, so I found myself moving from A1 to C1." (Student 6)

Another student also uttered:

"My favorite thing is I've learned things I don't know, so I've learned my mistakes." (Student 7)

When the teacher asks if s/he did not get frustrated when the student realized his/her mistakes, s/he stated that s/he did not because s/he said she had learned from it. S/he learned her/his deficiencies and try to compensate for it throughout the year.

Another student also proposed:

"The questions were good they understood what they asked. I realized my language skills, I understood what I was reading." (Student 8)

Another student also stated:

"This portfolio showed me where I was missing. It showed me what I should study. (Student 9)

Another student also conveyed:

My favorite thing is that it gives me the opportunity to evaluate myself, where I am, where I am and I love Turkish. (Student 10)

Motivation

The students were asked if the ELP affected their level of motivation, and all of the students stated that by the help of the ELP, they were able to see how much progress they had during the term; therefore, it increased their motivation. They also said that even if sometimes they had not understood the statements or they had realized that their level had been low, it also affected themselves positively, increasing their motivation to study harder. One student mentioned:

"Yes, it has. Because after we know everything, our desire to learn increases. We love those things." (Student 11)

Another student also suggested:

"Useful. Because most of the foreigners do not speak Turkish. It is good to understand Turkish in an easy or fun way." (Student 12)

Contribution of the ELP to learning Turkish- Practice Turkish

Since the language of the version of the ELP the students used was Turkish-English, they practiced their language. While filling in the language descriptors, the students also tried to understand if they had any difficulty in understanding the phrases. In this respect, they also stated that they also had the chance to realize the improvement in their language level. They mentioned that while the sentences in A1 level were simpler, the sentences in C1 level were more difficult. Therefore, they were able to see how much progress they had during the term. As another point, being aware of the fact that they could do these things while using the language, they became more eager to continue. One of the students stated:

"Because A1 and A2 were basic skills. B1 and B2 are slightly higher level. When we arrived in Turkey we had no knowledge. I mean, I had no information. Now I can express my own thoughts in Turkish, I can agree, I can get ideas, I can discuss on a subject." (Student 13)

Another student also said:

"My favorite thing about the European Language Portfolio is to evaluate myself, so I found myself moving from A1 to C1." (Student 14)

Another student mentioned:

"We answered the questions. When I did not understand the questions and answers, later I tried to learn what they meant." (Student 15)

Another student also commented:

"We worked on four skills. Reading, understanding, listening, speaking and writing skills. It makes me work harder because A1 and A2 were basic skills. B1 and B2 were slightly higher levels.

Yeah I think. Because, when we arrived in Turkey we had no knowledge. I mean, I had no information. Now I can express my own ideas in Turkish, I can agree, I can get ideas, I can discuss on a subject.

It's useful. Because most of the foreigners do not speak Turkish. It is good to understand Turkish in an easy or fun way." (Student 16)

Problems related to the ELP

There were two problems indicated by the students: having difficulty in understanding the statements in Turkish, too much time needed to fill in the ELP. The results related to each category are presented below. Since the statements in the ELP (the version they use) are Turkish-English, and they are learning Turkish as a foreign language, they stated that they had problems in understanding the statements. When needed, they ask it to their teachers and they help them, but sometimes when they fill C1 level for example, they state that the sentences are too long and difficult to understand. As another point just one student stated that it took a long time to fill in the ELP. It may be because of the fact that they also try to understand the sentences and fill in the sections. One of the students mentioned:

"Having lots of questions. It's a bit hard at C1 because we're having trouble understanding the meaning of words." (Student 17)

Another student also stated:

"Yeah, it took me a long time to fill up. Yeah, it's kind of hard." (Student 18)

Another student commented:

"I have had some questions so there were many questions which was very difficult to understand." (Student 19)

Another student proposed:

"It was a bit difficult. I did not understand it. After I asked it to the teacher, I understood and I did." (Student 20)

Another student also stated:

"I don't understand some words. So some words are very difficult. I looked up the dictionary, I looked for words. Sometimes I had some difficulty." (Student 21)

5. Discussion & Conclusion

The analysis of the results affirmed that the ELP can be an important tool for self-assessment in foreign language learning. In view of the findings from the questionnaires and the interviews, it can be concluded that the ELP enabled learners to evaluate themselves, see their weaknesses and strengths and study accordingly. These students study Turkish to survive in Turkey, they will live in Turkey until they finish their university education and still go on living if they want to pursue their career in Turkey. Therefore, it is utmost important for them to be able to learn it better including all skills. They need to comprehend what is said, express themselves, write a report in Turkish, join the conversations. etc. In this respect, it is important for them to believe in their necessity to learn it and foster their motivation. The ELP helped them what they are supposed to do for each level and skill and where they are. As a result, they have the chance to see their deficiencies if any and try to compensate for it or they try to improve themselves and

do more. As the results of the questionnaires suggest, rather than learning Turkish for just their undergraduate education, they learn it to be able to live in Turkey.

This result also supports that of Glover, Mirici and Aksu (2005). They state that their result showed a positive attitude toward the ELP and most of the students reported that they became more interested in their own learning with the help of the ELP. They also propose that the teachers agreed that the ELP contributed to the motivation of the students. This result also supports that of Güneyli and Demirel (2006). They report that after a month's implementation of the ELP, learners reported having positive attitudes towards using the ELP in learning Turkish as a foreign language since they have been given the chance to monitor their own learning process and assess themselves. With training and implementation, effective results can be achieved. This finding supports Koyuncu (2006) since he states students liked working with the ELP and thought that the studying process for the ELP was helpful. Majority of the students participated in his study thought that the ELP showed them what they do in English and that the "can do" parts made them aware of their improvement in language process. Therefore, they had more positive attitudes towards learning English after they used the ELP. This result is in line with that of Karagöl (2008) that she states self-assessment checklists and learners' taking active role in choosing their tasks fostered their autonomy and this in turn raised positive attitudes towards learning a language.

As regards self-assessment practices, it was evident that learners benefited from the self-assessment sessions; since they mostly referred to the ELP as a tool for them to evaluate them and see their progress. While assessing themselves, they could remember most of the descriptors from the lessons; so they did not have much difficulty understanding and reflecting on them. As Little (1999b) states, students can have an idea of what they can do with the language in concrete situations and tasks; so the "can do" statements can help them understand and assess what they can do with their language in specific contexts. This finding is in line with Demirel (2003) in that he also suggests that the ELP contributed to the language learning and teaching process positively since their students gained more responsibility and ability to assess themselves. This result also supports that of Egel (2003). In his study, it was found that the ELP was an influential tool in promoting learner autonomy of the students in the experimental group, especially in the state school. Although self-assessment practices were not carried out much after the activities or lessons, one self-assessment session at the end of the term was even valuable for students to understand their standing in the language learning process. However, only one self-assessment session at the end of the term is obviously is not enough for students to judge their own success objectively and discover their strengths and weaknesses to plan their learning accordingly.

The findings suggested that students needed to be given more control and responsibility in the learning process. This point was also highlighted in the literature (Bouchard, 2009; Reinders 2000, Şentürk, 2017; Şentürk & Mirici, 2019; Şentürk, 2019; Yüce, 2019). If they were given more responsibility and control, they felt more connected with learning processes and got more involved in the process. If their ideas or suggestions were valued and taken into consideration from the beginning to the end of the study, their autonomy level might probably increase.

In his study, Chan (2003) also concluded that students should be avail of opportunities for more negotiation and decision-making. Bayat (2011) also confirmed that if students were given opportunity to learn in autonomous learning settings, Turkish students learning English as a foreign language might be autonomous learners.

The current study also supports that of Şentürk & Mirici (2019). In their study, they highlighted to what extent the European Language Portfolio (ELP) can promote self-directed learning at Bülent Ecevit University. The analysis of the interviews gave almost the same categories

related to the ELP. It is important because the study was carried out in a similar context in Turkey. Like the students at Bartın University, the students at Bülent Ecevit University also state that the ELP is an effective tool for self-assessment and it fosters students' language learning enabling them to set their own learning goals, evaluate themselves and be aware of the process they are in while learning the language.

6. Pedagogical Implications

The ELP is recommended for implementation in the curriculum at the Foreign Languages Centers or Schools to promote learner autonomy. The ELP can be recommended as a tool which can be the first step to help the students develop learner autonomy because the ELP is a significant tool for promoting self-assessment. However, implementing it in the curriculum needs support both from the teachers and students since they already have excessive workload, and the ELP will be added to this workload both of the teachers and students. They should not perceive the ELP as a burden. Furthermore, even if they agree to work with the ELP, both the teachers and the students need an effective training on how to work with the ELP and how to make the best use of it in the language learning process. Since there are not many studies and pilot projects on the ELP other than the ones of the Ministry of Education which do not include universities, more studies should be conducted to see how the ELP works in Turkey and at Turkish universities.

Language teachers should encourage their learners to use the ELP since it will facilitate their learning process. While doing so, teachers should discuss the importance of the ELP for learners' language development; how leaners can benefit from t best, how frequently learners should refer to it, how they can efficiently use the components of the ELP; i.e., the language biography, the language dossier and the language passport. In other words, teachers should train their students as to how to utilize their ELPs most effectively and efficiently. However, for the teachers who do not understand the importance of the ELP, it is very crucial to learn more about the ELP.

To sum up, the findings of this study indicate that the ELP can be a significant tool to promote self-assessment. However, it demands a great deal of effort both from the teachers and students because the educational system in Turkey is considered traditional, in other words teacher-centered. It can be difficult to change both the students' and teachers' attitudes towards autonomy (Yumuk, 2002) because it is the teacher who always takes the initiatives and is responsible for the learners' learning, in other words the teacher is the 'authority'.

7. Limitations of the Study and Suggestions for Further Research

To begin with, the most important limitation of the study was the sample was small. The researchers had the chance to use the ELP with only thirty students (because the foreign students' number was limited) and the ones being interviewed were less, just ten students. If the sample could be bigger, it could have been better. As another point, the dossier part could not be used effectively. If the students had the chance to collect their materials and present them to their peers and the teachers, they could have benefitted more. Another study can be done with a large sample and more students can be interviewed and also the students can be interviewed regularly after they fill in each level. The comparative study with the foreign students learning Turkish and Turkish students learning English can also be done.

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A COMPREHENSIVE EVALUATION OF PRACTICUM EXPERIENCE: FROM THE VIEW PRESERVICE EFL TEACHERS

Research Article

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A COMPREHENSIVE EVALUATION OF PRACTICUM EXPERIENCE: FROM THE VIEWPOINT OF PRESERVICE EFL TEACHERS

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Abstract

Practicum is regarded to be a pivotal component of initial teacher education programs and such a considerable significance taken on by practicum necessitates more research regardless of the abundance of research on it. This case study explores a) how eight preservice EFL teachers (PEFLTs) evaluated the overall effectiveness of the practicum they took in the last term of the English language teacher education program they were enrolled in, b) the impact of keeping diaries and filling out self-evaluation forms on their professional learning, c) to what extent the courses offered at the program supported them in real teaching, and d) what they would change in the structure of practicum if they had the chance to do so. The results yielded by the inductive analysis of the data drawn from focus group interviews, the data from diaries and self-evaluation forms showed that PEFLTs deemed practicum experience crucial for both their professional learning and putting subject knowledge into practice while stating a set of negative experiences they had in practicum. The findings also reported that reflecting on practicum experiences helped them enhance their professional learning. Besides, the courses taken at university were not recognized as adequate to prepare PEFLTs for real teaching.

Keywords: associate teachers, initial teacher education program, PEFLTs, PEFLTs' evaluations of practicum

1. Introduction

Practicum constitutes a pivotal part of English language teacher education programs like the place held by it in other teacher education programs as it affords an opportunity for preservice teachers (PTs) to work out what is covered with respect to theoretical knowledge in the teacher education program they are enrolled, and to delve into what happens in real classroom environments (Gebhard, 2009; Grundnoff, 2011; Farrell, 2012; Ulvik and Smith, 2011), which is highly unlikely to be comprehended in the absence of teaching practice in real classes. Maintaining the value of practical knowledge, Ulvik and Smith (2011) contend that practical knowledge cannot be transmitted from one person to another, but held by the individual, giving prominence to the teaching practices of PTs on practicum. Moreover, what is theoretically learned at universities may not be applied to real settings, which is revealed in the study conducted by Kömür (2010), because teaching knowledge test and teaching competency scale administered before the practicum experience of PTs showed that all the participants scored above average. Nonetheless, the results yielded by open-ended questionnaire indicated that PTs could not use their teaching knowledge in a real class.

Aside from undergoing real teaching, teaching practice may engage PTs in pondering how the context in which they work might impinge on their instructional practices, because as has been posited by Borg (2009), the context in which PTs work occupies no less significant

place than what they think and believe in making sense of why they do what they do. Learning to teach is a situated and contextual activity (Gebhard, 2009; Zeichner, 2010). PTs keep extending their knowledge of teaching and/or fine-tuning their teaching in accord with disparate contexts in regard to students with diverse needs and interests, workplaces, and expectations of schools and the ministry of education etc. One of the studies reporting on the influence of contextual factors on school-based learning is conducted by Kokkinos & Stavropoulos (2016). The concern of that study was probing the relationship among "perceived practicum-related stressors, perceived general practicum stress, trait anxiety, epistemological beliefs, conceptions about teaching and learning, general and teaching self-efficacy and dimensions of burnout among student teachers" (p. 553). The findings revealed that all burnout dimensions were related to contextual factors rather than the personal ones, which requires attention to be ascribed to the contextual factors and their improvement. By the same token, the participants in the research carried out by Ulvik, Helleve and Smith (2018) had practicum experiences displaying variations in accord with different placement schools.

1.1. The influence of practicum on PTs' professional development and teacher identity

The effect of practicum on PTs' professional development and teacher identity has been examined in a number of studies, one of which is the research done by Choy, Wong, Goh and Low (2014). The results of the study aiming to reveal professional development of PTs during three practicum placements yielded the gradual development of PTs from observing experienced teachers towards independent teaching in a gradually structured practicum program, in which they found the opportunity to implement theoretical knowledge in teaching practice. Cohen, Hoz and Kaplan (2013) reviewed 113 studies on practicum experience, which indicated that activities and goals in diverse practicum settings impacted PTs' teaching competencies, and enabled gaining familiarity with diverse student groups. In that study, the researchers also accentuated the importance of undertaking initiatives to offer a better field experience in teacher education programs in conjunction with schools. The role played by practicum in PTs' professional development is also investigated by Gebhard (2009), according to whom practicum experiences cater for both aiding student teachers in unearthing and comprehending their teaching values, and acquiring skills to resort to in their prospective professional lives. Grundnoff (2011) examined perceptions of 12 beginning primary teachers regarding the effect of practicum experience on preparing PTs for their transition from initial teacher education to first year teaching. The results of the study showed that the participants viewed practicum as a vital constituent of the initial teacher education program; nevertheless, they stated that what they experienced in teaching practice was not always sufficient in order to assist them in their transition to real teaching considering the non-negligible expectations for PTs such as imitating associate teachers, and the inadequacies in practicum in regard to figuring out the complexities of being a teacher.

The role played by practicum in the development of PTs' teacher identities has been scrutinized by scarce number of researchers one of whom is Trent (2013). The likelihood of conflicts over how PTs positioned themselves as teachers and were positioned by schools was pointed out in that study as a factor carrying weight in the development of PTs' teacher identities. The probability of encountering contradictions in a variety of issues such as the ones between PTs' and associate teachers' approach towards teaching, and between the ideal lesson in their minds and the contextual factors to hinder its realization was presented in the research by Nguyen (2016) as something to serve a function in the development of PTs' teacher identities. PTs' emotions that presumably affect what they will do in the classroom environment in their prospective professional lives also account for the development of their

teacher identities (Yuan & Lee, 2015; Yuan & Lee, 2016). The research undertaken by Yuan & Lee (2016) examined how a PEFLT negotiated conflicting emotions he had during his teaching practice, which induced the formation of his teaching identity.

1.2. Reflection-in and -on practicum experience

The place of reflection in teacher education programs has been investigated by Wright (2010) in a study the concern of which was exploring whether microblogging supports PTs in developing their self-reflective practices. The results revealed posting to Twitter about their practicum experiences helped them with respect to reading other people's posts and receiving support from other PTs when they encountered any challenge in their practical teaching experience. Reflecting on practicum has also been examined by Zhu (2011) in a research paper exploring PTs' reflection-in and on practices. The results showed that PTs engaged more in reflection-on action, yet less in reflection-in action, as a result of the presence of lots of issues involved in teaching. Zhu (ibid) highlighted the need for more practical instructions and creating more opportunities for reflection during teaching practice. Likewise, in the study by Makina (2019), the need for aiding PTs in conducting reflective practices is emphasized. The research carried out by Jones and Ryan (2014) reported on the significance of getting PTs to engage in reflective practices by using online discussion forums to reflect on their practicum practices. The results demonstrated the inclination among the participants towards participating more in unstructured forms of online discussions in comparison to those that are structured, and postings by lecturers on discussion forums did not adequately stimulate more reflection in the forums by PTs.

1.3. Importance of increasing collaboration between schools and universities

The extant literature on practicum involves considerable number of research on the necessity for enhancing collaboration between schools and universities (Karen & Beckford, 2010; Montecinos, Walker & Maldonado 2015). In a study carried out by Grudnoff, Haigh and Mackisack (2017), the purpose was examining the impact of a reframed practicum structure as to redefined roles of the parties on practicum and heightened collaboration between schools and universities on the outcome for school and university participants. The findings showed that the collaborative work carried out by schools and universities generated a practicum model enabling reinforcement in professional engagement and learning for all the parties, teachers, teacher educators and student teachers.

The study conducted by Allen and Wright (2014) uncovers PTs' views concerning what factors impede and allow the incorporation of theory and practice in practicum. The results of this study reported that the participants valued linking theory and practice. Another finding was the emphasis being laid one the necessity for transparent understanding of the responsibilities of school and university staff. Preparedness of colleague teachers and involvement of university supervisors in the process of teaching practice was emphasized by the participants too. Another finding related to the need for the collaboration between school and university was about integrating coursework assessment into practicum because in the context of that study, only colleague teachers assessed student teachers' performance on practicum while university supervisors had no say on the assessment of their progress.

The findings of the study undertaken by Karen and Beckford (2010) highlighted the significance of determining the roles of associate teachers through collaboration with faculty staff. Farrell (2012) underscores the realization of such collaboration between university and school by bringing to the forefront the value of training mentor teachers on how to explicate their intuitive knowledge of teaching to novice teachers, because according to him, this could be achieved by collaboration between schools and teacher education programs. The importance of collaboration between schools and universities has been emphasized in another

study by Yan & He (2010), the findings of which indicated the need for a change in the existing model of practicum via transforming the existing model into a model that contains joint work of school and university.

1.4. The role of university supervisors and associate teachers in practicum

Barahona (2019) researched the role of supervisors in initial teacher education, which revealed that supervisors functioned as quality assurers of teacher candidates' subject knowledge, and their accurate application of theories and methods; however, they needed to act as specialists supporting PTs in optimizing their learning. Another implication stated in that study was the necessity of professional development for supervisors with regard to their supervisory practices. The role adopted by a university supervisor was described by Donovan and Canon (2018) in the following words "someone who visits preservice teachers infrequently and checks the boxes for the university" (p. 6). The researchers pointed out the requirement for timely and effective support provided to PTs by university supervisors. In the study carried out by Barahona (2019), the participating university supervisors had limited school experience, which was believed to be a factor adversely influencing the effectiveness of the supervision provided to PTs. Another striking issue specified in that research is that university supervisors had to accept to work as a supervisor in the university at which they were employed due to the absence of other available staff to take over their role. In that study, the findings also reported that some supervisors adopted a directive style of supervision in order to support PTs in their teaching practices and meet the standards set for them. The indispensable role played by university supervisors was exhibited in the research conducted by Başyurt & Tüzel (2009). PEFLTs were subjected to language awareness training to tackle with the difficulties with target language use they faced as doing their practicums, and the results suggested the need for working on the challenges PTs might confront in real teaching environments in place of leaving those problems to be resolved as they gained more experiences in teaching.

The impact of mentor teachers on the effectiveness of practicum experience has been examined in the research conducted by Maddamsetti (2018), the findings of which showed that mentor teachers played a crucial role in the success of practicum experience in that their willingness to supervise PTs and to engage in open conversations had a facilitative effect on enhancing PT learning. Thomas (2017) produced a paper by taking into account his own experiences of accompanying PTs in their practicum experiences, using interview transcripts obtained from participants and critical discussions with other scholars in teacher education. Unfolding probable incongruities between how a PT viewed practicum, and university supervisors and mentor teachers deemed it, the researcher accentuated the need for emotional and effective support provided to PTs during their field experiences and suggested collaboration between university supervisors and mentor teachers, in that in doing so, they could support each other in helping PTs strive for responding to the challenges they encountered on practicum.

The uncontroversial importance held by practicum in teacher education warrants expounding how practicum is conducted in diverse contexts and what initiatives could be undertaken to maximize the effectiveness of practicum for PTs. This study, which is highly likely to contribute to the extant literature on practicum taking into consideration the absence of an in-depth evaluation of practicum by PEFLTs, aims at finding out answers to the below-mentioned research questions:

- How do PEFLTs evaluate the overall effectiveness of their practicum experiences?

- To what degree do keeping diaries and filling out self-evaluation forms contribute to PEFLTs' professional learning?

- To what extent do the courses offered by English language teacher education program support PEFLTs in practicum?

- What would PSEFLTs change in the current structure of practicum if they had a chance to do so?

2. Method

This study was designed as a case study, because as has been maintained by Neuman (2007), "in case study research, a researcher examines, in depth, many features of a few cases over a duration of time with very detailed, varied, and extensive data, often in a qualitative form" (p. 20). Similar to what is purported by Neuman (2007), Creswell (2007) states that case studies necessitate the use of a range of information source for detailed exploration of the topic.

2.1. Participants

The study participants, who were selected by using convenience sampling, were eight senior PEFLTs. The average age of the participants was 22,5. Two of the participants were female whilst the remaining were male. All the participants were enrolled in the last term of the English language teacher education program of a state university. The participants were placed in the same Anatolian high school, which is a mixed-sex school providing education after secondary school for at least four years. Every two participants were mentored by the same associate teacher.

2.2. Context of the study

This study was carried out in a state university in Turkey where teaching practice course is offered in the last year of English language teacher education programs. The purpose of the course is explicated by Turkish Ministry of National Education (2018) as aiding PTs in gaining teaching skills, teaching a lesson or more than one lesson in a planned way, and discussing and evaluating practicum practices. The ministry puts an emphasis on the multifaceted nature of teaching practice program by drawing the attention to the fact that the program is comprised of a process of planning, exploration, research, participation, analysis, evaluation and development. Since practicum practices are planned and implemented with the collaborative work of university supervisors and associate teachers, the evaluation of PTs' performance on practicum similarly needs to be conducted via a joint work by university supervisors and associate teachers. Teaching practice course is offered in the 7th and 8th terms of teacher education programs, and in each term, PTs are to teach at least 4 times under the guidance of associate teachers. University supervisors have to visit practicum school minimum 4 times to observe PTs' practicum practices, and to carry out evaluations with associate teachers and PTs. PTs' performance on teaching practice is evaluated both by university supervisors and associate teachers.

2.3. Data Collection Tools

2.3.1. Diary

The participants were asked to keep a diary on each day they went to the school they were placed with an eye to jotting down about from what went well/did not go well in lessons either taught by their associate teachers or by them to any noteworthy incident about students,

associate teachers or the operation of the school system. The diaries kept by the participants during their practicum experiences lasting 14 weeks were submitted to the researcher. The diaries provided invaluable information about participants' field experiences.

2.3.2. Self-evaluation form

The participants, supposed to teach at least four times on practicum, were asked to fill out a self-evaluation form adapted from the one introduced by Cambridge assessment international education (2018). The form subsumes a number of subsections: planning/preparation, physical environment, relations with students, lesson pacing, student motivation, use of resources, assessment and homework. The self-evaluation form contained a part entitled "key points for action" under each subsection allowing a space for the participants to write down what plans they had in their minds to strengthen their weaknesses in the concerned subsection.

2.3.3. Focus group interviews

Following the completion of the practicum, the researcher organized focus group interviews with the participants to evaluate their practicum experiences because as maintained by Creswell (2012), focus group interviews could yield better results on the condition that "interviewees are similar to each other and cooperative with each other" (p. 218). The PEFLTs in this study were in the same group in the department and had known each other for almost four years; furthermore they had begun to talk to each other about their experiences of practicum before the researcher told them to do so. The participants were divided into two groups and the interviews with the two groups were carried out on different days. The main purpose of dividing the participants into two groups was ensuring to get detailed responses from each participant and not to lengthen the duration of the interview. Each interview in which four questions were asked lasted 90-110 minutes. The interview was video recorded and transcribed by the researcher.

2.4. Procedure

School attachments of the participants were completed before the commencement of the eighth term, during which this study was conducted. The researcher, the university supervisor of the participants as well, had an informal meeting with the participants prior to the outset of the study to inform them about the importance of practicum in their professional learning and to provide them detailed information concerning the content of practicum and what was expected of them in the time they would spend on practicum. The researcher additionally told them to keep a diary every day they went to the school, and to evaluate their teaching on the day they did it not only by making entries in their diaries but also filling out the self-evaluation form. The university supervisor accompanied the participants on their first day on practicum and met the associate teachers and the principle of the school. The participants went to the school two half-days in each week for 14 weeks, marking the duration of the teaching practice.

2.5. Data Analysis

With a view to analyzing the transcribed data gathered from the focus group interview, general inductive approach was adopted, which is described by Thomas (2006) in the succeeding words: "the general inductive approach provides an easily used and systematic set of procedures for analyzing qualitative data that can produce reliable and valid findings" (p. 1). Coding was carried out by two researchers, one of whom is the researcher. The inter-rater

reliability was calculated by using the formula suggested by Miles and Huberman (1994), and 85% agreement was found between coders, indicating sufficient agreement between coders (Miles & Huberman, 1994). To maintain the credibility of this qualitative research, which is significant to ensure trustworthiness, the researcher maintained the contact with the participants and spent sufficient time with them (Lincoln & Guba, 1985, Meriam, 1995), provided feedback to the participants on the lesson plans they prepared, had open conversations with them about the things that worked well in classroom environment, and tried to generate solutions to the problems they had with their students and/or associate teachers. In addition, triangulation was achieved by using three different data collection tools. Moreover, member checks were realized by sharing the transcript of the interview with the participants to ensure that the words in the transcript were a projection of what they had in their minds. The data collected from diaries and self-evaluation forms was utilized to evidence what was found out from the analysis of the focus group interview.

3. Findings
3.1. Overall evaluation of the effectiveness of practicum

The content analysis of the participants' responses in the focus group interviews in relation to how they would explain the effectiveness of their practicum experiences revealed that the participants had both positive and negative experiences in practicum; therefore, the responses given by the participants are divided into two categories as positive and negative experiences and the themes that emerged from the content analysis are presented. For the purpose of supporting the developed themes, diary entries and participants' evaluations in self-evaluation forms are shared.

3.1.1. Positive experiences

Putting what is learned theoretically into practice

All the participants in this study stated during the focus group interviews that practicum gave them the chance to practice what they theoretically learned in the department. Below are the two participants' comments on the effect of practicum on finding the opportunity to implement subject knowledge in real classrooms that epitomize those of others and one participant's diary entry:

I found the chance to see if or not the methods, approaches, theories and classroom management techniques we learned in the department really worked when teaching English. If this chance had not been offered to me, a question mark over the usefulness of everything we learned in three and a half years would stay in my mind. (PEFLT 3)

*I think I faced the realities. I say realities because I was in a real classroom with real students and problems. What I learned in the department would be meaningless if I hadn't done practicum. I believe that practicum constitutes 60% of teacher education program and weighs more than theoretical knowledge. (*PEFLT 7)

Today, I taught a lesson for the first time. It was very exciting for me. The subject was present perfect tense. I used the smart board to show past participle forms of the verbs and prepared a worksheet for the students. They were all interested in the lesson and listened to me carefully. It was a good experience for me, of course I made mistakes but I liked being a teacher. (Diary entry-PEFLT 1)

Developing self-confidence

Whilst evaluating their experiences in practicum, the participants expressed the impact of practicum on developing self-confidence as regards teaching. The participants noted that teaching practice helped them gain self-confidence.

I was thinking about whether or not I could teach English to real students. I am saying real students because we all microtaught last year but while microteaching, our friends listened to us carefully and gave answers to all the questions we asked. Because of this, I have always doubted if I had the ability to teach and practicum helped me have self – confidence, now I can say I can teach English. (PEFLT 2)

3.1.2. Negative experiences

Not being valued by other teachers

The analysis of the data revealed that the participants had some concerns about the way teachers approached them on practicum. Participants' conceptions of this issue are typified by the comments of one of the participants and one diary entry.

At breaks, I wanted to be in contact with my associate teacher but starting from my first day on practicum, teachers, not only mine but also other teachers, did not want to communicate with PTs. We used to sit in one of the corners of the teacher's room whereas associate teachers were in another one. This made me feel like I was not valued. I would be one of them only four months later, but they did not accept me as one of them. (PEFLT 6)

Today, I wanted to talk to my mentor about immediate correction of students' pronunciation mistakes. At 3rd break, I approached her in the teacher's room to talk about the best way for correcting students' pronunciation mistakes, but she said she was too busy and had to do document work and she did not tell me when she would be available to share her ideas about the issue. I really felt worthless. (Diary entry-PEFLT 7)

Disappointment at how English was taught

In the interview, the participants voiced their disappointment at how English was taught to students. Statements of one participant typify other participants' perceptions concerning this issue.

We had courses in the department on teaching language skills, materials development and testing. I was shocked when I saw how the teacher who mentored me was teaching English. She used GTM in almost all the lessons but in the courses we took in the department, we were encouraged to use communicative language teaching and engage students in pair and group works. When I talked to her to learn about why she used GTM, she told me: "forget about the things you have learnt at university, here is the real world". (PEFLT 5)

In addition to what was stated by the participants in the focus group interview, the diary entries presented below depict the disappointment felt by the participants at how students were taught English.

My mentor always speaks Turkish in lessons. She even greets students in Turkish but I think if a teacher wants to teach students how to speak English, the first thing the teacher needs to do is speaking English because we are a model for our students. The teacher also never uses pair or group work but without collaboration among students how they can they improve their speaking skills? (Diary entry-PEFLT 3)

This week is my fourth week on practicum, but the teacher is just using the coursebook and focusing on grammar. She does not consider students' individual differences and prepare materials that can appeal to them. (Diary entry- PEFLT 4)

The teacher taught simple past tense today. She wrote the rules on the board, subject + verb 2 +object. It was boring, extremely boring. (Diary entry-PEFLT 6)

Not getting adequate feedback from associate teachers

Another commonly stated negative experience in practicum is not receiving sufficient feedback from associate teachers. Two comments presented below represent the common conception among the participants.

I can say that I haven't got any feedback from my associate teacher. I really do not understand how a PT could learn how to teach better if he does not learn what he needs to improve in his teaching practices. (PEFLT 4)

All the feedback I got form my associate teacher was about classroom management and time management yet she never told me about the effectiveness of the techniques I used to teach reading or whatever I taught in the lesson. (PEFLT 8)

3.2. The impact of keeping diaries and filling out self-evaluation forms on PEFLTs' professional learning

Contributing to improvement in PEFLTs' teaching skills

All the participants articulated that keeping diaries, filling out self-evaluation forms, and referring back to them at times led to development in their teaching skills owing to a number of reasons encapsulating having heightened awareness of the mistakes they or their associate teachers made as teaching and of the areas in which they needed to improve themselves.

I think keeping diaries and filling out questionnaires developed me professionally as a PEFLT. I evaluated my teaching by filling out the questionnaire after teaching lessons, and while I was reading the items in the form I evaluated myself better because it gave me the chance to think about what did not go well and what I could do to improve myself in those areas. (PSEFLT 2)

The comment written down by one of the participants in the "key points for action" part of the self-evaluation form could make it clear how filling out self-evaluation forms contributed to their professional learning.

Even though the students were engaged from the beginning till the end of the lesson, I did not establish expectations for the class at the beginning of the lesson but I will do that for every lesson from now on. (Self-evaluation form-PEFLT 8)

Helping PEFLTs develop self-confidence

Another theme emerged out of the content analysis is that PEFLTs gained more self-confidence as a consequence of keeping diaries. The extract given below exemplifies the perception of other participants regarding gaining self-confidence by virtue of keeping diaries.

I think the most important advantage of keeping diaries is gaining self-confidence because I did so. I kept reading my diary entries and the thing I realized in my first entries is that I had lots of problems addressing students, coping with time constraints, giving students' enough wait time etc. But reading the entries I made towards the end of practicum showed

me that I had overcome most of the problems. This helped me gain self-confidence. Now, I guess I will be a good English teacher. (PEFLT-1)

3.3. The extent to which the courses they took in the program were sufficient to prepare them for teaching practice

Apart from few courses, useless in real teaching

According to the participants, except few courses in the department, other courses did not aid them in getting ready for teaching in real settings. The participants noted that there was almost no correlation between the courses they had taken at university and what actually took place on practicum in regard to the realities of teaching in real classroom environments, ranging from hardships in teaching crowded classes to predominantly used GTM and testing-based teaching.

We took a course on teaching methodologies and we learnt about communicative language teaching, silent way, total physical response and many other approaches and methods but in real classrooms, I saw that GTM was used. I mean only grammar was taught and my associate teacher told me to teach grammar though what I had in my mind was totally different because I wanted to use communicative language teaching but my associate teacher told me not to lose time and grammar would be asked on the upcoming exams. (PEFLT 3)

We took a course on literature and language teaching but I had no chance to apply what I had learnt on that course because the content of English exams was already determined and grammar would be asked on exams. Therefore, let alone using literary works in English lessons, I was discouraged when I said that I wanted to design a lesson to teach listening. (PEFLT 8)

Not sufficient to teach how to design lessons

Five of the participants stated that the courses they took at university did not teach them how to prepare lesson plans. The comment below represents the common conception of the participants.

I had serious problems with preparing an appropriate lesson plan because we learnt to write scenarios in lesson plans in the department, but the scenarios I produced never occurred in classes with real students. (PEFLT 2)

3.4. Recommendations to improve the effectiveness of practicum

Training associate teachers on how to mentor PEFLTs well

The need for educating associate teachers on how to be good associate teachers was one of the themes that developed from the content analysis of the responses of the participants to the question of what they would do to improve the effectiveness of practicum for PEFLTs in focus group interviews.

I believe only the teachers who really want to mentor PTs should be associate teachers because otherwise they do not put enough effort into training PTs. They just have us teach lesson for four times but they do not give feedback on our performance, they do not communicate with us, and they do not value us either. (PEFLT 4)

Associate teachers should be subjected to training on how to be a good associate teacher and informed about their responsibilities and I believe that PTs should be given the right to

evaluate the performance of associate teachers, and by doing so, associate teachers may try harder to be a good mentor. (PEFLT 6)

Teaching more on practicum

All the participants verbalized the necessity for teaching more on practicum. The succeeding statements by one participant typify those of others.

I believe that we must teach more lessons on practicum. For example, I taught just four lessons and this was not enough for me. I know that on practicum we have the chance to observe our mentors but I believe I can learn to teach better by teaching not just observing. For this reason, if I had the power to change the structure of practicum, I would make PTs teach more during their practicum experiences. (PEFLT 5)

Extending the time allocated to teaching practice.

Another theme developed during content analysis is the urge to extend the time allocated to practicum. The extract below illustrates participants' conceptions of this suggestion.

I think the time we spent on practicum, I mean one semester, is not adequate to learn to teach and to be a good English teacher. If I had an opportunity, I would get graduate students to continue taking practicum for one more year. According to their performance on practicum during that time span, I would make a decision about the teachers deserving to work a teacher at schools because as you know well the criteria for being allocated to work as a teacher include passing the base point and the interview. (PEFLT 1)

4. Discussion

The findings on the overall effectiveness of practicum yielded that all the participants viewed practicum effective in giving the participants a chance to implement the theoretical knowledge conveyed at university in real classroom environments. This finding aligns those of the research undertaken by Kömür (2010), Ulvik, Helleve and Smith (2018), and Choy, Goh and Low (2014) as the results in those studies also indicated that the participating PTs evaluated practicum as a medium for practicing theoretical knowledge acquired at university. Practicum serves a vital role in teacher education because what teaching is and its complexities are can be contemplated in a more comprehensive manner while teaching real students in real classes. Another finding on positive experiences in practicum was that the participants could develop self-confidence in teaching by the medium of teaching real students. The participants realized that they could teach English and improve their teaching skills when they engaged in teaching on practicum. This result appears to be parallel to the ones reported in the research by Gebhard (2009) because that study also revealed that practicum was a means for PTs to acquire teaching skills to use in their future professional lives. The results reported not only in this study but also the others suggest the fundamental importance of practicum in initial teacher education and display the necessity for probing different ways to augment the quality of practicum.

Aside from the positive experiences gained in practicum, the findings as to the participants' overall evaluation of their practicum experiences also revealed that they confronted some problems. The participants did not feel being valued on practicum because they stated during the interview that they did not feel like being a part of the school in which they were placed and their associate teachers did not set a high value on their enthusiasm they had for making the most of practicum to be a good English teacher. This issue is a serious one and worth pondering on for so long as PEFLTs feel they belong to the school, they can

demonstrate all their teaching skills and make every effort to benefit from practicum. Not getting adequate feedback from associate teachers emerged to be another negative experience had in practicum, which is again another acute problem requiring rigorous work to be overcome. The rationale behind doing practicum is observing experienced associate teachers and practicing teaching, and by doing so, developing PEFLTs' teaching skills; nonetheless, unless associate teachers provide feedback to them on their teaching, the question of how they can gain and develop teaching skills arises. Another important theme was the disappointment felt by PEFLTs once they witnessed how English was taught to students because the way English was taught was in stark contrast to what was taught theoretically to them by their teacher educators. This finding seems to parallel the research done by Trent (2013), for that study also underscored the contradictions that might arouse because of varying approaches of associate teachers and PTs towards teaching. This result also brings to the forefront the need for increasing collaboration between universities and schools, to put it in other words, between university supervisors and associate teachers. University supervisors need to follow what happens on practicum and have regular short meetings with associate teachers to talk about not forcing students to teach by imitating their instructional practices because as mentioned by the PEFLTs in this study, PEFLTs might want to implement communicative language teaching whereas associate teachers might expect them of applying GTM in lessons merely due to the content of exams and struggles with time limitations.

The results of this study showed that keeping diaries and filling out self-evaluation forms supported the participating PEFLTs in developing their teaching skills. By keeping diaries and filling out self-evaluation forms, the participants reflected on what they experienced on each day in practicum. The studies carried out by Jones and Ryan (2014), and Zhu (2011) also suggested engaging PTs in reflective practices so as to enhance their professional learning, which is in line with the findings in this study. Reflecting on field experiences can support PEFLTs in comprehending what works and does not work with specific group of students. Furthermore, PEFLTs could raise their awareness of their strengths and weaknesses in teaching by writing entries in diaries and reading them occasionally in that they could question if or not they succeeded in overcoming challenges they encountered in the first lesson they taught and strengthened their weaknesses. Additionally, on the condition that PEFLTs are promoted to reflect on their teaching practices in practicum and recognize the crucial place of reflection in professional development, they might carry on reflective practices in the forthcoming years of their profession.

This research attempted to answer the question of to what degree the courses taken in the program helped PSEFLTs get prepared for practicum as well. The findings indicated that the courses they took in the department were not by and large adequate to equip them with the skills they needed to teach in practicum because as suggested in the research conducted by Kömür (2010), participants could not implement what they theoretically learned at university. For this reason, the courses in English language teacher education programs need to be reframed to be able to educate PEFLTs about the realities of real classrooms and how to deal with the problems they are likely to encounter such as the difficulty they may face when applying communicative language teaching approach in a classroom consisting of 50 students. However, the problem is that an indispensable number of university supervisors have never taught at a primary, secondary or high school, and thus, they may lack the ability of designing courses keeping in mind what happens in the real world. Considering the findings in Barahona's study (2019), there seems to be parallelisms with that study and this one because Barahona (ibid) also highlighted the necessity for university supervisors to develop their supervisory practices as the university supervisors taking part in the study had limited school experience which unfavorably affected their supervisory practices. This could be reduced to minimum by frequent visits of university supervisors to the school, and

observing as many lessons as possible to familiarize themselves more with what happens in the real world. By so doing, they might enrich the content of their courses and provide alternative solutions and strategies that could help PEFLTs cope with the problems they might confront. Another result under the subheading of the effect of the courses taken at university on practicum is the inadequacy of teacher education programs in preparing PEFLTs for designing lesson plans. Since planning a lesson is the primary and a pivotal step in conducting an effective lesson, courses aiming to help PEFLTs learn to teach language skills could provide a chance for university supervisors to work on preparing lesson plans with PEFLTs.

The last research question was added to the study to figure out PEFLTs' recommendations for ameliorating the effectiveness of practicum. The findings revealed participants' complaints about the insufficiency of associate teachers in providing feedback to PEFLTs on their instructional practices, and not having open conversations with them. The research carried out by Maddamsetti (2018) is in parallel with this study in terms of the results as the participants in that study emphasized how associate teachers' willingness to mentor PTs, and having open conversations with them had a facilitative effect on the success of practicum experience on the part of PTs. The point deserving contemplation is the willingness of associate teachers to mentor PTs; therefore, it is of high significance to select associate teachers out of competence not convenience. Additionally, associate teachers should be trained on what is expected of them on practicum and how they could fulfill their responsibilities. There needs to be a close relationship between associate teachers, PEFLTs and university supervisors to learn about each party's expectations from the other/s. Such an increased collaboration between associate teachers, PEFLTs and university supervisors may initiate the process of giving adequate and effective feedback to PEFLTs, and bridge the gap, if any, between how associate teachers and PEFLTs view practicum. Likewise, Farrell (2012) maintains the importance of training held for associate teachers to be a good mentor.

Being given the chance to teach more on practicum is another result yielded in the findings. The participants articulated in the interview and wrote down in diaries their need for teaching more lessons on practicum. Observing how English is taught by associate teachers can undoubtedly help PEFLTs realize what works and what does not work. Besides, they may have the opportunity to observe how students' disruptive behaviors are managed. Nonetheless, the place of practicing teaching in gaining and developing instructional skills cannot be overlooked, which bears resemblance to creating opportunities for students to speak English to learn to speak English. The more chance PEFLTs have to practice teaching, the better they can learn to teach. Succinctly, as purported by Mackinnon (2017), PTs are in need of "freedom with support".

Extending the time allocated to teaching practice was another recommendation of the study participants to ameliorate the quality of practicum for PEFLTs. Spending more time on practicum and teaching more lessons could be beneficial for PEFLTs as long as associate teachers and university supervisors do want to supervise them and are clear about their responsibilities for enhancing PEFLTs' professional learning. The suggestion made by one of the participants about integrating teacher candidates' performance on practicum into the decision process of teachers' appointment is really intriguing as practicum could be taken more seriously by all the parties involved in the procedure if PTs' performance on practicum is one of the criteria affecting the case of being appointed as a teacher. Moreover, making slight amendments in the initial teacher education program could pave the way for engaging PEFLTs in practicum practices in the spring term of the third academic year in the program, and hence, they can observe associate teachers in that term and commence to teach in the fall term of the last academic year before graduation.

5. Conclusion

The vital role played by practicum in initial teacher education programs is unequivocal taking account of the findings demonstrated in the studies carried out thus far on the investigation of PTs' practicum experiences. The results yielded in this research also reinforce the importance attached by PTs to practicum in getting ready for teaching profession. To help PEFLTs make the most of their teaching practice, teacher educators and associate teachers need to engage in collaborative work as the ultimate purpose of both parties are assumed to optimize PT learning, and in doing so, to prepare qualified teachers.

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VALIDITY AND RELIABILITY STUDY OF THE SCALE TO BE USED IN AUDITING TURKISH LANGUAGE AND LITERATURE TEACHERS

Research Article

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VALIDITY AND RELIABILITY STUDY OF THE SCALE TO BE USED IN AUDITING TURKISH LANGUAGE AND LITERATURE TEACHERS

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Abstract

The objective of this study is to develop a scale related to the auditing criteria of Turkish language and literature teachers. The study group consisted of 120 Turkish language and literature teachers who were working in Northern Cyprus. Exploratory (EFA) and confirmatory (CFA) factor analysis were performed to determine the construct validity of the scale. As a result of the EFA, a two-factor structure emerged, namely field knowledge competences and proficiency in professions. The variance rate explained by two factors was 54.00%. This structure was confirmed by DFA; A 5-point Likert-type scale with 2 factors and 27 items was developed. The goodness of fit indexes calculated by CFA are as follows: 762 / SD = 2.011, GFI = .903, RMSEA = .076, CFI = .901, NFI = .849. An examination of the reliability analysis results of the score showed that the Cronbach's Alpha internal consistency coefficient of the scale was 0.94. The Spearman-Brown Coefficient and the Guttman Split-Half Coefficient were both found to be 0.79. When the item-total correlation coefficients were examined, it was determined that the correlation coefficients of the scale items with the total ranged between 0.48 and 0.70. Resultantly, it is thought that the scale related to the criteria of the Turkish Language and Literature Teachers' Audit Criteria developed in this research will resolve a significant deficiency in the literature.

Keywords: Turkish language and literature teacher, auditing, audit criteria, field knowledge, occupational knowledge

1. Introduction

In order for the welfare level of the society to be raised, developed and progressed, high-quality education should be provided in schools. In order for education to be effective, the qualifications of the schools should be increased. Therefore, in order to produce qualified and well-equipped students, the teacher should also be highly proficient (Özyar, 2003; Seferoğlu, 2003). A good teacher is a person who is passionate about success, is ambitious, can cope with the stress caused by the school environment, maintains strong communication both inside and outside the school, can guide students and can act as a parent (Özabacı ve Acat, 2005).

Teachers are the most important source of success in educational activities. Therefore, there are differences between the teaching profession and other professions (Confery, 1990; Good and Grouws, 1979; Rosenshine & Stevens, 1986; Ryan, 1960). Some of the characteristics that teachers should have include cognitive competence, creativity,

adaptability to students' needs, the ability to exhibit friendly behaviors, being non-judgmental and non-accusing, problem-solving abilities, proficiency in the mother tongue, helpfulness, self-confidence, participant in social activities, being focused on providing personal development, and exhibiting democratic attitudes and behaviors.

Today, traditional teacher behaviors are criticized by most educators. A traditional teacher is someone who has knowledge and is capable of conveying that information to the people. However, the role of the teacher has changed as a result of the advancement of science and technology and the diversification of teaching techniques. Due to technological developments, it has become easier to reach information, meaning that the need for teachers to direct and guide students is continually increasing. The students should be able to use the learning opportunities correctly and should be able to learn outside the targeted learning behaviors. Teachers are required to work in schools that enable students to be more active in the classroom, solve problems, communicate effectively, make optimal decisions, investigate, question and become creative (Doğanay, 2005). Additionally, it is important that teachers who are employed at schools can organize teaching activities, thoroughly understand their students in this process, and who take into account the social relations, physical development and psychological conditions of their students (Eacute and Esteve, 2000; Gürkan, 2001). From this point of view, teachers need to constantly develop themselves in terms of both their knowledge of the branch (field) and their knowledge of the profession.

The main purpose of education systems is to ensure that the cultural values of societies are conveyed to future generations and to develop the society with these values. Therefore, it can be said that teaching the subject of Turkish language and literature is important. In Turkish language and literature courses, two main objectives are realized: one is to develop language skills and the other is to gain knowledge and a passion for literature (Cemiloğlu, 2003). Language and literature teachers should ensure that students acquire the language in their natural environment and give feedback to them by watching how the students use the language. Teachers should praise the development of students' language skills and support them (Power and Hubbard, 2002). Language teachers should also communicate with other instructors and relate their lessons with other subjects (Strickland, Galda and Cullinan, 2004). Teachers of Turkish language and literature should be devoted, patient and capable. Marshall (1994) stated that although the teachers of all courses are important, the most important teachers are teachers who provide and emphasize the importance of mother tongue education, because the mother tongue is a necessary component in the teaching of all courses. The understanding of all courses is based on native language proficiency.

It is of significant importance that individuals within society can use their language skills effectively and that they can establish healthy communication in both their daily and business lives. Saraç (2005) said that those who use their mother tongue well can be successful in all courses, and also stated that people who can effectively use their mother tongue are successful in their professional and social lives. In this respect, the development of language teachers is very important. It is thought that high-quality Turkish teachers will educate qualified students.

In order to qualify as a successful teacher, an individual must have sufficient knowledge and professional competence in his/her field. Effective and successful teachers are those who are passionate about and respect their profession. If these factors are combined with the experiences of the teacher, a qualified and successful teacher profile can be distinguished (Senemoğlu, 2001). Demirtaş and Barth (1997) grouped the qualifications that teachers should possess under four headings: the knowledge of the field, effective management of the teaching-learning process, guidance, and the possession of certain personality characteristics.

Measurement and evaluation have considerable importance in the Turkish curriculum. However, besides the evaluation of students and learning-teaching activities within the classroom, teachers must also undergo an auditing process. The main purpose of teacher auditing should be to assess whether the system is working correctly if there are any mistakes or deficiencies caused by the teacher and to ensure that the deficiencies are resolved. Therefore, inspection is of paramount importance. When the literature is examined, it is seen that there few studies that have focused on how the auditing of Turkish teachers should be performed (Gökalp, 2010; Karakış, 2007; Sağır, 2005; Soylu, 2003). In addition, it is seen that the auditing of teachers in different branches is carried out with similar criteria. In fact, in this study, it should be said that, unlike previous research, it focuses purely on the auditing of Turkish language and literature teachers.

In this study, based on the fact that the criteria for supervising the field knowledge of Turkish language and literature teachers should be detailed and specifically prepared in a different manner to teachers in other branches, to the aim was to develop a scale for the audit criteria of Turkish language and literature teachers and to perform the validity-reliability study of this scale. In the study of Yıldız and Yavuz (2015), one of the studies that focused on auditing of a small number of Turkish teachers, it was assessed how auditing should be conducted based on the opinions of Turkish teachers. According to the opinions of Turkish teachers, it was concluded that during the auditing process, the teachers' shortcomings were investigated, only paperwork checks were performed and that the audits were only scheduled once or twice a year, which did not create effective results. Furthermore, the teachers stated that not only the students but also the school administrators, other branch teachers and even parents should participate in the auditing process.

As a result, the aim of this study was to develop a scale for the auditing of Turkish language and literature teachers. Another objective of this study was to perform the validity and reliability analysis of the scale.

2. Method

2.1. Study group

The research universe consisted of Turkish language and literature and Turkish teachers working in North Cyprus. Due to the fact that all teachers in the research universe could not be reached in terms of time, cost and control, a total of 120 teachers were reached with 95% confidence level and 5% sampling error using the simple random sampling method. The personal and professional information on the study group is presented in Table 1 and Table 2.

Table 1. *Distribution of teachers' personal information and educational status*

	Number (n)	Percentage (%)
Gender		
Female	93	77.50
Male	27	22.50
Age		
30-34 years	27	22.50
35-39 years	42	35.00
40-44 years	29	24.17
45-49 years	22	18.33
Nationality		
TRNC	91	75.83
TRNC+Turkey	29	24.17
Undergraduate field		
Turkish language and literature	105	87.50
Turkish language teaching	15	12.50
Graduate from		
A university in Cyprus	85	70.83
Other	35	29.17
Level of education		
Bachelor's	100	83.33
Postgraduated	20	16.67

Table 2 presents the distribution of personal information and educational status of the teachers included in the study. It shows that 77.50% of the teachers included in the study were women and 22.50% were men, 22.50% were in the 30-34 age group, 35.0% were in the 35-39 age group, 24.17% were in the 40-44 age group and 18.33% were in the 45-49 age group. 75.83% of the teachers were TRNC nationals and 24.17% were TRNC and Turkish nationals. Out of all the teachers, 87.50% were graduates from the Turkish Language and Literature department, whereas 12.50% were Turkish language teachers. 70.83% of teachers had graduated from universities in Cyprus and 29.17% had graduated from universities in other countries. It is also observed 83.33% of the teachers had bachelor's degrees and 16.67% of them had graduate degrees.

Table 2. *Distribution of teachers according to their professional characteristics*

	Number (n)	Percentage (%)
Professional seniority		
0-5 years	17	14.17
6-10 years	21	17.50
11-15 years	21	17.50
16-20 years	36	30.00
21 years and above	25	20.83
Number of schools worked		
Single school	23	19.17
2-3 schools	61	50.83
4 and more schools	36	30.00
Location of the school		
Urban	90	75.00
Rural	30	25.00
Total number of teachers in the school		
100 and less	68	56.67
101-200 teachers	33	27.50
201 and more	19	15.83
Total number of students in the school		
500 and less	21	17.50
501-1000 students	67	55.83
1001 and more	32	26.67
Seniority		
5 years and below	54	45.00
6-15 years	36	30.00
16 years and above	30	25.00
Union membership		
Member	94	78.33
Non-member	26	21.67
Inservice training on Auditing		
Received	109	90.83
Not received	11	9.17

Table 2 shows the distribution of the teachers participating in the research according to their professional characteristics. When Table 2 is examined, it can be seen that 14.17% of the teachers included in the study had 0-5 years of experience, 17.50% had 6-10 years of experience, 17.50% had 11-15 years of experience, 30% had 16-20 years of experience and 20.83% had 21 or more years of experience. Furthermore, 19.17% of the teachers had only worked at one school, 50.83% had worked at 2-3 different schools and 30% had worked at 4 or more schools. It has been determined that 75% of the teachers included in the study were working in urban areas and 25% were working in rural areas. 56.67% of the teachers were working at schools where 100 and less teachers are employed, 27.5% were working at schools where 101-200 teachers are employed, and 15.83% were working at schools where 201 or more teachers are employed. Of the teachers who participated in this study, 17.50% were working at schools with 500 or less students, 55.83% were working at schools with 500-1000 students, and 26.67% were working at schools with 1001 or more students. It has been found out that 78.33% of the teachers who participated in the study were members of a union,

whereas 21.67% were not members of any union. 90.83% of the teachers stated that they received on-the-job training on teacher qualifications, whereas 9.17% stated that they had not received any training of that kind.

2.2. Data collection tool

As a data collection tool, a scale form consisting of two parts, a Personal Information Form and Scale about the Auditing Criteria of Turkish Language and Literature Teachers, was used. This section was prepared by the researchers to determine the personal, educational status and occupational characteristics of the teachers included in the study, which has 14 questions in total.

In order to be able to prepare the items of the scale related to the auditing criteria of the Turkish language and literature teacher, the literature was reviewed and similar scales related to auditing were examined. As a result, a pool of 40 propositions was created. "Vital", "necessary", "reasonably necessary", "unnecessary", "very unnecessary" were the 5 Likert-type response options of the scale. The draft scale was presented to five academicians with expertise in educational sciences (from the fields of education management, measurement assessment and Turkish education) in order to obtain their opinions. Ten teachers were asked to complete the draft scale and to then identify the items they had difficulty understanding. Thus, the scope validity of the scale was evaluated and five of the scale items were excluded from the scale. The draft scale consisted of 35 items before the validity and reliability study.

2.3. Collection of data

In the study, data were obtained from teachers working at high schools of the Ministry of National Education, which are located in six different districts of Cyprus, between 15.3.2018 and 30.3.2018 in the spring term of the 2017-2018 academic year. In order to obtain written consent, the researchers of the present study applied the research ethics committee of the university. Then, in order to be able to apply the scale, permission was firstly obtained from the Department of Education and Training of the Ministry of National Education. Finally, the data collection process was initiated by obtaining permission from the administrators and teachers of the schools included in the study. It was stated that the teachers who participated in the research were not obliged to and were expected to participate on a voluntary basis. In addition, it was explained orally and in writing in the informed consent and information form that the data obtained in this study would only be used for the purposes of this study and would be treated confidentially.

2.4. Analysis of data

Statistical Package for Social Sciences (SPSS) 24.0 and IBM AMOS 21.0 data analysis packages were used for statistical analysis of the data obtained from the teachers. Initially, exploratory and confirmatory factor analysis was used to ensure the construct validity of the research scale. When the number of teachers in Cyprus was taken into account, it was not possible to reach two separate samplings for exploratory and confirmatory factor analyses. Therefore, factor analysis was performed on a single sample, which was a limitation. In order to determine the scale as a reliable measurement tool, the Cronbach's alpha test and split-half test were applied and item-total correlations were examined. Frequency analysis was used to determine the distribution of teachers' personal characteristics, education and occupational characteristics and the results are shown in frequency tables.

3. Results

3.1. Validity analysis for scale of teacher efficiency in terms of Turkish language and literature audit

The Scale of Teacher Efficiency in terms of Turkish Language and Literature Audit, which was developed by the researcher was used as a data collection tool. The scale was developed to determine teachers' views about the points - professional knowledge of teaching and subject expertise- to be considered in the audits conducted by inspectors for the Turkish Language and Literature course.

Scale of Teacher Efficiency in terms of Turkish Language and Literature Audit is formed of 27-items and is measured on five-point-Likert Type Scale. Two-factor dimensions were determined as a result of the validity study. These factors are professional teaching efficiency and subject expertise efficiency. Two factors explained 54% of the total variance. Cronbach's alfa coefficients were calculated for the overall scale, professional teaching efficiency and subject expertise efficiency dimensions. The Cronbach's alpha coefficients were found to be 0.94, 0.90 and 0.94, respectively. The findings of the validity and reliability studies are given below.

3.2. Content validity

An items pool (40-items) was formed by the researcher as a result of expert interviews and a literature review. Then, these 40 items were presented to a group of experts from the field of Turkish Language and Literature and Educational Sciences. According to the expert reviews, five items were removed from the scale and some linguistic/grammatical corrections were applied to the other items. In addition to this, pilot practice was conducted with a small group of teachers (10 teachers) to determine any blind spots of the scale. This pilot practice showed that all items were perfectly understandable and clearly comprehensible.

3.3. Construct validity

Exploratory Factor Analysis and Confirmatory Factor Analysis were applied to explain constructs and to test the construct validity of the scale.

3.4. Exploratory factor analysis

Exploratory Factor Analysis was applied to explain the construct validity of the scale. The aim of Exploratory Factor Analysis (EFA) is to establish theoretical relationships between observed measurements and possible variables. Additionally, EFA is used to determine independent factors which constituent the construct. EFA also provides information about the items included in the scale; by using EFA, we try to determine if items measure the construct we are attempting to identify or not (Büyüköztürk, 2002).

KMO and Bartlett's tests were interpreted to investigate the factorizablility of the scale. Kolmogorov Smirnov, Shapiro Wilks tests, QQ plots and skewness and Kurtosis values were used to test the fit of the data set to multivariate normal distribution. The results showed that the data were normally distributed.

Kaiser- Meyer- Olkin and Bartlett's Sphericity Tests were applied to determine data appropriateness for EFA. The KMO coefficient is used to test the data fit; in other words, whether it is appropriate for factor analysis or not. The KMO coefficient is expected to be 0.60 for factorizability. Bartlett's test is used to investigate the relationship between variables based on partial correlations (Büyüköztürk, 2009).

Table 3. *KMO and Bartlett's Sphericity Tests for Scale of Teacher Efficiency in Terms of Turkish Language and Literature Audit*

Kaiser-Meyer-Olkin Coefficient		0.879
Bartlett's Sphericity Tests	Approx. χ_2	2641.871
	Sd	435
	P	0.000*

*p<0,05

According to the results (Table 3), the KMO coefficient is 0.879, which is higher than the accepted value of 0.60. The Bartlett's Sphericity Test result showed that the chi-square value is statistically significant (Approx. $\chi_2 = 2641.871$; p=0.000). Thus, the results confirmed that the application of factor analysis to the data set is acceptable.

Principal Component Analysis method and varimax rotation were used for Exploratory Factor Analysis of the scale. As a result of analysis, items with smaller factor loads than 0.5 were removed from the scale to distinguish factors properly. Subsequently, EFA was repeated for the remaining items (Seçer, 2015).

Table 4. *EFA Results for Scale of Teacher Efficiency in Terms of Turkish Language and Literature Audit*

Factors	Eigenvalues			Rotation Sum of Squared Loadings		
	Tot.	Explained Variance (%)	Cum. Var. (%)	Tot.	Explained Variance (%)	Cum. Var. (%)
Factor 1	12.82	42.72	42.72	9.95	33.17	33.17
Factor 2	3.38	11.28	54.00	6.24	20.83	54.00

The results in Table 4 indicate that scale is formed by two factors whose initial eigenvalues are larger than 1.

The First factor of Scale of Teacher Efficiency in Terms of Turkish Language and Literature Audit explained 33.17% of the total variance and the initial eigenvalue for this factor was 9.95. The initial eigenvalue for the second factor was found as 6.24 and this factor explained 20.83% of the total variance. These two factors explained 54% of the total variance together.

Table 5. *Rotated Factor Matrix of Factor Loadings for Scale of Teacher Efficiency in Terms of Turkish Language and Literature Audit*

	Factor 1	**Factor 2**
A1	0.80	
A2	0.79	
A3	0.77	
A4	0.77	
A5	0.76	
A6	0.73	
A7	0.73	
A8	0.73	
A9	0.72	
A10	0.71	
A11	0.70	
A12	0.70	
A13	0.66	
A14	0.65	
A15	0.64	
A16	0.62	
A17	0.62	
A18	0.61	
A19	0.60	
M1		0.79
M2		0.73
M3		0.70
M4		0.70
M5		0.70
M6		0.69
M7		0.67
M8		0.64
M9		0.64
M10		0.64
M11		0.63

According to the results in Table 4, Factor 1 is composed of 19 items whose factor loadings are between 0.60-0.80. Furthermore, 11 items are under the second construct (Factor 2) and the factor loadings of this items range between 0.63-0.79. As a result of EFA, 5 items were removed from the scale and 30 items remained in the final version of the scale.

3.5. Confirmatory factor analysis

Confirmatory Factor Analysis (CFA) was applied to test the construct validity of data derived as a result of EFA. CFA is used to test the derived factors fit with hypothetical factors. AFA is used to test which variable groups are highly correlated with which factors. On the other hand, DFA is used to determine whether variable groups contributing to the specified number of factors are adequately represented by these factors (Aytaç & Öngen, 2012).

Table 6. *Goodness of Fit Indices for Scale of Teacher Efficiency in Terms of Turkish Language and Literature Audit*

Goodness of Fit Indices	Value	Decision
χ^2/sd (chi-square/degrees of freedom)	2.011	Perfect
Root Mean Square Error of Approximation (RMSEA)	0.076	Acceptable
Normed Fit Index (NFI)	0.849	Not acceptable
Comparative Fit Index (CFI)	0.901	Acceptable
Goodness of Fit Index (GFI)	0.903	Acceptable

The goodness of fit results for the Scale of Teacher Efficiency in Terms of Turkish Language and Literature Audit are given in Table 6. The results show that χ^2/sd= 2.011. According to Kline (2005), the chi-square/degrees of freedom value shows a perfect fit when it is below 3, whereas a value between 3 and 5 shows an acceptable fit. Thus, the scale has a perfect fit in terms of χ^2/sd.

The *Root Mean Square Error of Approximation* (RMSEA) value for the Scale of Teacher Efficiency in Terms of Turkish Language and Literature Audit was found to be 0.076. For an acceptable fit for the model, RMSEA should be between 0.05-0.08. In this research, RMSEA showed acceptable fit for the tested model (Brown, 2006).

The Normed Fit Index is used to determine the accurateness of model with the null hypothesis and takes values between 0-1. NFI values between 0.95 and 1 show that the model has perfect fir, and values ranging between 0.90-0.95 indicate an acceptable fit. The NFI value of the Scale of Teacher Efficiency in Terms of Turkish Language and Literature Audit was found to be 0.849, indicating that the model did not show acceptable fit in terms of NFI (Kline, 2005).

The acceptable range for the Comparative Fit Index (CFI) value is between 0.90 – 0.95, and values over 0.90 indicate an acceptable fit for the model (Tabachnizk and Fidell, 2001). The CFI value of Scale of Teacher Efficiency in Terms of Turkish Language and Literature Audit was found to be 0.901 and the model showed acceptable fit.

The Goodness of Fit Index (GFI) value of the Scale of Teacher Efficiency in Terms of Turkish Language and Literature Audit was found to be 0.903 and the model showed acceptable fit. If the GFI value is in the range between 0.90-0.95, this shows that there is a good fit for the model (Ayyıldız & Cengiz, 2006).
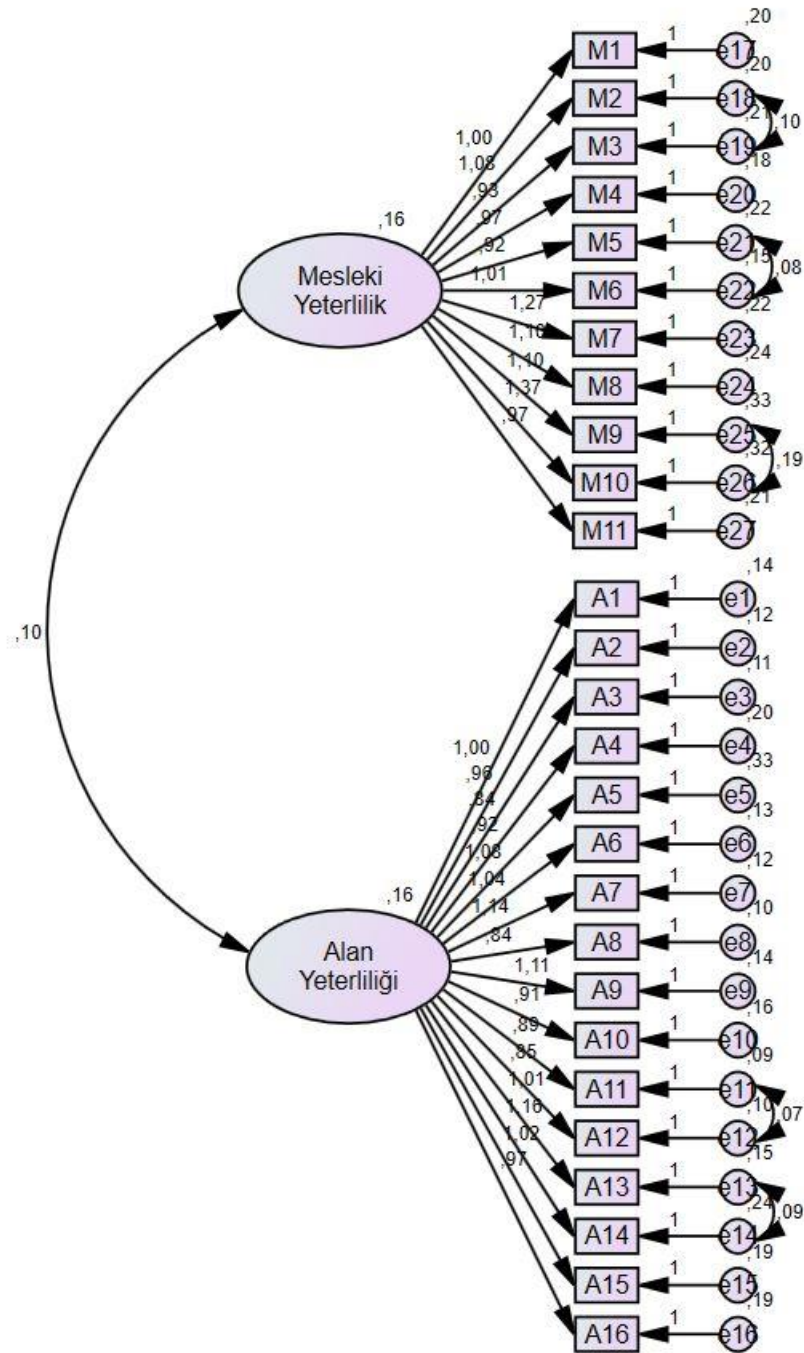
Figure 1. Path Analysis Results for Scale of Teacher Efficiency in Terms of Turkish Language and Literature Audit

CFA was conducted in order to test the construct validity of the scale. As a result of the CFA, 3 items were removed from the 30-item scale and the final form of the scale was formed with 27 items. A total of 16 items belonged to the professional teaching efficiency sub-scale, whereas the other 11 items formed another sub-scale called subject expertise efficiency.

3.6. Reliability analysis for scale of teacher efficiency in Terms of Turkish Language and Literature Audit

Internal consistency tests were used to indicate the reliability of the scale. Cronbach's alpha and split-half reliability tests were used to determine the internal reliability of the scale.

Table 7. *Internal reliability tests results for Scale of Teacher Efficiency in Terms Turkish Language and Literature Audit*

			Value
Cronbach's Alpha Coefficient			0.94
Cronbach's Alpha Coefficient	Part 1	Value	0.90
		Total item	14
	Part 2	Value	0.93
		Total item	13
Split half correlation			0.66
Spearman-Brown Coefficient			0.79
Guttman Split-Half Coefficient			0.79

According to Table 7, the Cronbach's Alpha Coefficient for Scale of Teacher Efficiency in Terms of Turkish Language and Literature Audit was found to be 0.94. Cronbach's alpha coefficients for professional teaching efficiency and subject expertise efficiency were found to be 0.90 and 0.93, respectively.

The split-half test results showed that the Cronbach's alpha coefficient was 0.90 for the first half, which is formed by 14 items of the scale, while for the second half (13-items), the Cronbach's alpha coefficient was found to be 0.93. Split half correlation was calculated as 0.66. The Spearman-Brown Coefficient and Guttman Split-Half Coefficient were both 0.79.

Table 8. *Item-total correlations*

	Item-Total Correlations
P1	0.59
P2	0.63
P3	0.51
P4	0.49
P5	0.48
P6	0.60
P7	0.62
P8	0.58
M9	0.50
P10	0.57
P11	0.61
F1	0.64
F2	0.67
F3	0.57
F4	0.53
F5	0.49
F6	0.67
F7	0.66
F8	0.62
F9	0.65
F10	0.64
F11	0.70
F12	0.68
F13	0.66
F14	0.69
F15	0.67
F16	0.64

P: Professional competence, F: Field competence

Item-total correlations are given in Table 8. Correlations between items and total were ranged between 0.48 and 0.70.

As a result of these analyses, it has been determined that the Scale of Teacher Efficiency in Terms of Turkish Language and Literature Audit is a valid and reliable tool.

4. Conclusion and recommendations

The purpose of this study is to develop a scale for the audit criteria of the Turkish language and literature teachers and to calculate its reliability and validity. First, a pool of 40 propositions was created. A draft scale consisting of 35 items was created by subtracting 5 items according to expert opinions. Then, the scale consisting of 35 items was applied to the sample group and both validity and reliability analysis were performed on the obtained data. EFA showed that the scale was gathered around two factors, which were named as "qualifications related to field knowledge" and "qualifications related to professional knowledge". As a result of the exploratory factor analysis results, five propositions were excluded from the form of the Teacher Competency Scale for Turkish Language and Literature Auditing consisting of 35 items and a 30-item form has been created. A total of 19

items with factor loads varying between 0.60 and 0.80 were included in the field competence factor and 11 items with factor loads varying between 0.63 and 0.79 were included in the professional competence factor.

In the professional competence factor, there are statements about the personal characteristics that teachers should possess, planning skills and what should be included in the learning-teaching process. On the other hand, in the field competence factor, there are some statements about how the teaching of four basic language skills (listening, speaking, reading and writing) should be performed.

As a result of the EFA, CFA was applied to the 30-item construct of the scale collected under two factors. The goodness of fit values calculated by CFA are 762 / sd = 2.011, GFI = .903, RMSEA = .076, CFI = .901, NFI = .849. The goodness of fit values calculated by CFA indicate that the model is a valid model. As a result of the confirmatory factor analysis, 3 items from the 30-item scale were discarded and the final form of the scale was formed with 27 items. The 16 items included in the final form of the 27-item scale belong to field the competence sub-dimension and the remaining 11 items belong to the professional competence sub-dimension.

The results of the reliability analysis of the scale are as follows: the Cronbach's alpha internal consistency coefficient was 0.94. The Cronbach's alpha value for the professional competence sub-dimension was 0.90, while a value of 0.93 was found for the area competence. The Cronbach's alpha coefficient for the first half of the14-item scale was found to be 0.90, while the Cronbach's alpha coefficient for the second half was 0.93. The correlation coefficient between the halves was 0.66. The Spearman-Brown Coefficient and Guttman Split-Half Coefficient of the scale were 0.79. When the item-total correlation coefficients were examined, it was determined that the correlation coefficients of the scale items with the total ranged between 0.48 and 0.70.

As a result, it can be said that the scale related to the criteria of the Turkish Language and Literature Teacher's Audit Criteria is valid and reliable. It should be noted that all items are positive, two factors can be calculated separately and in addition, the total score of the 5 Likert scale can be calculated as follows: "5=Vital", "4=necessary", "3=reasonably necessary", "2=unnecessary", "1=too unnecessary". It can be stated that as the scores received by the respondents increase, the competence level of Turkish language and literature teachers will increase and the level of competence will decrease as the scores decrease.

Based on the obtained findings, it can be said that the measurement tool developed within the scope of this study will eliminate a significant deficiency in the related literature, because it will be possible to discuss the auditing criteria for Turkish language and literature teachers.

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SCALE OF AUDITING CRITERIA FOR TURKISH LANGUAGE AND LITERATURE TEACHERS

	Very Necessary	Necessary	Moderately Necessary	Unnecessary	Very Unnecessary
Professional Competence					
1. To have research skills and understanding					
2. Planning the teaching taking individual differences into account					
3. Associating knowledge and skills between courses					
4. Recognizing the developmental characteristics of students					
5. Teaching to learn					
6. Helping students develop themselves					
7. Giving importance to learning styles of students					
8. To use teaching-learning strategy, methods, techniques, tactics in an appropriate and effective way					
9. Ensuring that all students participate in multiple in-school learning environments (seminars, conferences, panels…) that improve their interaction with me and with each other, and organize such learning environments					
10. Ensure that all students participate in multiple learning environments (seminars, conferences, panels…) outside the school, which improve their interaction with me and with each other, and organize such learning environments					
11. To direct students to use various materials and resources					
Field competence					
12. To ensure that the students follow certain rules in the listening process.					
13. Recognizing the barriers to good listening and solving problems related to listening					
14. To direct the students to use the rules related to Turkish in proper and correct way while expressing their feelings, thoughts, impressions and dreams.					
15. To ensure that students pay attention to speech, emphasis and intonation while speaking.					
16. To encourage the students to use the Turkish language instead of the foreign language words while speaking.					

17. To ensure comprehension of the integrity of meaning in paragraphs and texts					
18. To select a book to evaluate students' free time and to give them the habit of reading books continuously					
19. To help students implement vocabulary, phonetic, grammar and writing rules in their writing tasks					
20. To introduce different types of literature to students and to ensure that they comprehend similarities and differences					
21. To introduce the structural features of Turkish					
22. To ensure that students use punctuation marks correctly and in place					
23. To teach students the rules of spelling					
24. To ensure comprehension the relations between the words					
25. To follow the changes and developments in Turkish in terms of vocabulary and usage.					
26. To make students understand the forms of expression					
27. To make students perceive the types of texts in Turkish literature					

VIEWPOINTS AND SELF-EFFICACY OF TEACHERS PARTICIPATED IN PROJECT TRAINING TOWARDS PROJECT-BASED LEARNING

Research Article

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Abstract

This research focuses on how teachers' self-efficacy changes as a result of a project consultancy training and their views on project-based learning. The study group of the research consists of 47 teachers working in Ministry of National Education who participated in "2237 coded Project Consultancy Trainer Training" program organized in 2019 in cooperation with The Scientific and Technological Research Council of Turkey (TUBITAK) and Ministry of Education. In this research, mixed method was used in which qualitative and quantitative data were used together. In the quantitative stage of the research a semi-experimental design without a control group; in the qualitative stage, a case study was adopted. As the data collection tool, "Self-efficacy scale related to project based teaching" developed by Mutlu and Yildiz Fidan (2018) and "Teacher view form related to project based teaching" developed by the researchers were used. As a result of the study, it was concluded that there was a statistically significant increase between the pre-test and post-test scores. In addition, it was determined that there was no significant difference according to the variables of gender, branch and making project status. From the teachers' views on project-based teaching, the most difficult stage of the project was "finding a project subject"; and it was understood that "writing reports" was the stage that they thought they could easily do while they were doing the project. However, it was found that the views of teachers such as "my deficiencies were completed" and "my self-confidence / motivation increased" were formed as a result of the training.

Keywords: Project management, project based learning, self-efficacy, science teachers

1. Introduction

It is very difficult to train individuals, especially with 21st century skills in the global citizens profile with traditional teaching methods. However, rapidly developing technology, the emergence of new professions, changing world demands and so on caused the methods that centered the students in the schools to come to the fore. Project-based teaching is one of the methods that are student-centered.

Project-based teaching is a systematic learning model that builds learning through projects (Thomas, 2010). The projects also allow the use of alternative approaches to students' individual differences, different learning styles, intelligence, abilities or disabilities (Saracaloğlu, Özyılmaz Akamca and Yeşildere, 2006). Good planning is necessary to make a successful project. Unlike traditional methods, both teachers and students are involved in the planning process. Project-based teaching is a tool through which students can connect with real-world work (Bell, 2010). In parallel, it can be said that student learning is unique and

valuable due to the fact that it is connected to real life and access to information through its own efforts (Saracaloğlu, Özyılmaz Akamca and Yeşildere, 2006).

Project based teaching approach is a learning approach that aims to solve problems with an approach similar to life under natural conditions through individual or small groups. This approach, inspired by the educational principles put forward by John Dewey, not only gives importance to individual learning but also provides a relationship between school and life (Korkmaz and Kaplan, 2001). With project-based learning, students develop effective solutions as well as meta-cognitive skills (Blumenfeld, Soloway, Marx, Krajcik, Guzdial, and Palincsar, 1991). Project-based learning, which provides students with an equal learning environment, also positively contributes to their academic achievement (Solomon, 2003).

Project-based learning is a learning approach that requires process-oriented and classroom interactive environments. These learning environments are technology-based learning environments where students construct and direct their own learning and therefore develop their creativity, try to solve the problems they face in cooperation, make decisions about their success, move life into the classroom, and actively participate in the learning process (Erdem, 2002). Modern digital technology is a great opportunity for students to design and develop their projects since they can document the whole process and easily share what they have done in the digital environment (Patton, 2012).

According to Grossman, Pupik Dean, Kavanagh, and Herrmann (2019), for an effective project-based teaching approach in classrooms, teachers motivate and discipline students as their main task and they create an iterative culture while supporting collaboration. The basics of project-based teaching practices focus on four main objectives (Figure 1).

Collaborative	**Disciplinary**	**Authentic**	**Iterative**
• Support students to make choices • Support students to collaborate	• Elicit higher-order thinking • Orient students to subject-area content • Engage students in disciplinary practices	• Support students to build personal connections to the work • Support students to make a contribution to the world • Engage students in disciplinary practices	• Support students to reflect and revise • Support students to give and receive feedback • Track student progress and provide feedback

Figure 1. The core practices of project based teaching (Grossman, Pupik Dean, Kavanagh and Herrmann, 2019)

In the implementation of project-based teaching, the guidance role of teachers in particular is very important. However, it is very difficult for a teacher to achieve this without sufficient experience. In addition to theoretical training, teachers also need practical experience on this method (Wu and Meng 2010). During the implementation of project-based teaching, the teacher needs to be clear about what the project is about, selective and careful in determining the study group. It is important that teachers recognize students' interests and abilities, offer

them options and encourage their students to conduct scientific research (Saracaloğlu, Özyılmaz Akamca and Yeşildere, 2006).

Self-efficacy beliefs of teachers on project-based teaching for good practices are very important. Bandura (1994) defines self-efficacy as beliefs about the capacity of people to produce levels of performance that are effective on events affecting their lives. Self-efficacy beliefs determine people's feelings, thoughts, behaviors and how they motivate themselves. Teachers' self-efficacy beliefs are shaped according to the practices and planning in the course (Pajares, 1992). In this context, self-efficacy belief in PBL practice can be defined as "individual's self-judgment in proper use of PBL" or" individual's belief in PBL practice ". Self-efficacy levels and perceptions of teachers about PBL approach both important in the teaching of the courses according to their aims, and in addition to providing the students with logical thinking skills, overcoming the difficulties encountered in the application of innovative educational technologies and raising the successful individuals (Nacaroğlu & Mutlu, 2018).

There are not enough experimental studies related to teachers' own experiences and perspectives in their transition from teaching programs to working environments (Allen & Wright, 2014). Further research is needed to explore teachers' views on the advantages and challenges of project-based teaching in order to increase the use of project-based teaching (Aksela and Haatainen, 2018). It has been observed that more studies have been carried out on students because the method is student-centered. On the contrary, it is very important to determine how adequately the teachers perceive themselves about the project-based teaching method, which factors affect their perceptions, which stages they can make easier and when they use this method. However, when the literature is examined, it is understood that the studies are mostly on teachers in certain fields (Asilsoy, 2007; Kaymakçı and Öztürk, 2011; Şahin, 2012; Aydın and Yel, 2013; Ülker Kurtuluş, 2019). In this study, the education of teachers from different science and mathematics areas is also important in terms of facilitating the cooperation between teachers in making interdisciplinary projects.

In this study, it is aimed to determine how self-efficacy of project-based teaching changes as a result of the project consultancy training of physics, chemistry, biology and mathematics teachers. For the aim of the study, the answers to the following questions were sought depending on the problem statement "Is there any difference in the self-efficacy perceptions of physics, chemistry, biology and mathematics teachers about project-based teaching before and after the application?":

1- Is there a significant difference between the pre-test and post-test scores of the teachers' self-efficacy scale regarding project-based teaching?

2- Do teachers' self-efficacy scale achievement (posttest-pre-test) scores differ by gender?

3- Do teachers' self-efficacy scale achievement scores for project-based teaching show a significant difference according to the branch?

4- Do teachers' self-efficacy scale achievement scores for project-based teaching show a significant difference according to the project-making status?

5- What are the views of teachers on project-based teaching?.

2. Methodology

2.1 Research design

In this study, mixed methods was used in which qualitative and quantitative data were collected together. Explanatory sequential design was determined from mixed methods

research (Creswell and Plano-Clark, 2015). In the descriptive sequential pattern, first quantitative data is collected and evaluated. Then, qualitative data are used to elaborate and explain quantitative data (Creswell, 2013).

In the quantitative stage of the study, in accordance with the mixed method approach, pre-test and post-test control group semi-experimental design (including pre-test and post-test without control group) was used. The quasi-experimental design is preferred when the controls required by the actual experimental model can not be provided or are not sufficient (Karasar, 2012, p.99). In this study, this model was chosen because all teachers participating in the project were involved in the activities and there was no equivalent control group to which the participant group could be compared.

In the qualitative phase of the research, case study was used. Case studies are a preferred strategy in situations where the focus is a current fact related to real life and the researcher has little influence on events (Yin, 2009).

2.2 Study group

Criterion sampling which is one of the purposeful sampling methods was used in the research. In this sampling, the criterion or criteria can be created by the researcher or a previously prepared criterion list can be used (Yıldırım & Şimşek, 2013). The study group of this study consists of teachers working in Ministry of National Education who participated in "2237 coded Project Consultancy Trainer Training" program organized by TUBITAK-MNE in Yalova in March 2019. Teachers have been included in the program in order of ranking among those who have achieved at least one of the selection criteria "To have completed a master's degree / To have participated in a project training / To have done a project before".

As a result of the fact that some of the teachers could not participate in the pre-test and some of them could not participate in the post-test, the study was conducted according to the data of a total number of 47 teachers. In addition, all teachers from whom quantitative data were obtained were used to obtain qualitative data. Demographic information of the study group of the study is presented in Table 1.

Table 1. *Demographic information about the participants*

Demographic characteristics		N	%
Gender	Female	24	51
	Male	23	49
Education status	Graduate	12	25
	Postgraduate	35	75
Branch	Physics	11	23
	Chemistry	9	19
	Biology	14	30
	Mathematics	13	28
Professional experience	0-10 years	11	24
	11-20 years	18	38
	21 years and above	18	38
Did you make a Project before?	Yes	32	68
	No	15	32
TOTAL		**47**	**100**

2.3 Content of project consultancy training of trainer

"Project Consultancy Training of Trainer" for teachers includes an education process for 30 days (45 minutes) of four days (Appendix 1). These trainings were given by four lecturers who are experienced in project consultancy trainings from different universities. The program consists of two main stages: theoretical and practical. First stage; information was given by the faculty members on the main topics such as the nature of science, project management, statistics, access to information on the internet, ethics of scientific research and reporting of research results. The content is given with power-point presentation and supported by sharing the experiences of the teachers with question-answer, case studies and basic practices. In addition, the participant teachers shared their problems and facilities. In the second stage, the teachers were divided into classes according to their fields and experienced with the process of finding project subject, writing project proposal and preparing project presentations with groups of 3-4 people. At this stage, mentors from physics, chemistry and biology have guided teachers. Finally, by presenting the project proposals prepared, an environment was prepared where questions and answers and views and suggestions of the participants were shared.

2.4 Data collection tools

"Self-efficacy scale related to project-based teaching" developed by Mutlu and Yıldız Fidan (2018) and "Teacher view form for project-based teaching" developed by researchers were used as data collection tools. The self-efficacy scale related to the project-based teaching used for the quantitative stage of the research consists of five sub-dimensions and 24 items and the Cronbach α coefficient was given as 0.92. The Cronbach α coefficient calculated for this study is 0.95. In the positive items of the five-point Likert scale, the " strongly agree "option was 5 points and the option "strongly disagree" is 1 point. In the negative items of the scale, the opposite was scored. The lowest score that can be obtained from the scale is 24 and the highest score is 120.

At the qualitative stage, teachers' views on project-based teaching were collected through a form developed by the researchers. In the preparation of the draft questions of the qualitative assessment tool, literature review and quantitative assessment tool were taken into consideration. The questions were examined by the field experts and the form was finalized with three open ended questions.

2.5 Data Analysis

SPSS 22 statistical package program was used for the analysis of the obtained quantitative data. In order to decide which statistical tests will be used in the analysis of the quantitative data, it was examined whether the data was distributed normally. One of the methods used in the assumption of normality is to calculate the skewness and kurtosis of the distribution. According to the pre-test data skewness is -.302, and kurtosis is -.191; skewness of posttest data was -.571, and kurtosis was -.037. Parametric analyzes are performed when skewness and kurtosis are within ± 1.5 (Tabachnick and Fidell, 2013). One-way analysis of variance (ANOVA), t-test for unrelated samples and t-test for dependent samples were used for data analysis. Levene test was used to check the homogeneity of variances. In order to determine the source of the differences, Tukey test was used in the groups that provided the homogeneity of the variances and Tamhane test was used in the groups that did not meet the homogeneity of the variances. In addition, frequency, percentage, average and standard deviation values were calculated from the basic statistics. The results obtained from the data were evaluated according to the significance level of * p <.05. Content analysis was used in the analysis of qualitative data. In content analysis, the main process is to interpret similar data by gathering them under certain concepts and themes (Yildirim & Simsek, 2013).

Reliability of qualitative data analysis; Consensus / (Consensus + Disagreement) x 100 was calculated using the formula (Miles and Huberman, 1994). The reliability between coders was calculated as 89%.

3. Results

This section includes the results of teachers' self-efficacy perceptions and views about project-based teaching obtained as a result of analyzes conducted in line with the sub-problems of the research.

In the research, the t test results of the question "Is there a significant difference between the pre-test and post-test scores of the teachers' self-efficacy scale related to project-based teaching? "is given in Table 2.

Table 2. *The t-test results of pre-test and post-test mean scores of teachers' self-efficacy scale related to project-based teaching*

Scale		N	$\overline{X}$	SS	Sd	T	p
Mastering and guiding the project process	Pre-test	47	37.81	5.848	46	-3.795	.000*
	Post-test	47	41.09	4.015			
Planning, preparation and reflection	Pre-test	47	15.87	2.700	46	-3.699	.001*
	Post-test	47	17.62	2.327			
Application and evaluation	Pre-test	47	17.62	4.372	46	-3.158	.003*
	Post-test	47	20.04	4.075			
Feedback, alternative evaluation	Pre-test	47	11.89	1.970	46	-2.500	.016*
	Post-test	47	12.81	1.884			
Group process and level learning	Pre-test	47	11.98	1.726	46	-5.942	.000*
	Post-test	47	13.51	1.487			
Self-efficacy on project-based teaching	Pre-test	47	95.17	13.453	46	-5.064	.000*
	Post-test	47	105.06	10.443			

It is seen that there is a statistically significant increase between the pre-test and post-test scores of the self-efficacy scale and sub-dimensions of the project-based teaching of the teachers who participated in the project consultancy training (t (46) = - 5.064; p <.05).

Independent t-test results obtained from the question "Do the teachers' self-efficacy scale achievement scores of the project-based teaching show significant differences according to gender?" are presented in Table 3.

Table 3. *T-test results of teachers' self-efficacy scale achievement scores according to gender variable*

Scale	Gender	N	$\overline{X}$	SS	Sd	t	p
Mastering and guiding the project process	Female	24	3.54	5.680	45	.311	.758
	Male	23	3.00	6.274			
Planning, preparation and reflection	Female	24	2.04	2.851	45	.639	.526
	Male	23	1.43	3.628			
Application and evaluation	Female	24	3.33	3.886	45	1.202	.237
	Male	23	1.48	6.352			
Feedback, alternative evaluation	Female	24	.79	2.021	45	-.341	.735
	Male	23	1.04	2.977			
Group process and level learning	Female	24	1.92	1.412	45	1.536	.133
	Male	23	1.13	2.029			
Self-efficacy on project based teaching	Female	24	11.63	11.631	45	.903	.371
	Male	23	8.09	15.066			

It was found that there was no significant difference between the achievement scores of teachers (self-efficacy scale) (t (45) = .903; p> .05) and the sub-dimensions of the scale according to gender variable.

The results of the one-way analysis of variance obtained from the question "Do the teachers' self-efficacy scale achievement scores of the project-based teaching show a significant difference according to the branch?" are given in Tables 4 and 5.

Table 4. *Descriptive statistics of teachers' self-efficacy related to project-based teaching according to branch variable*

Scale	Branch	N	$\overline{X}$	SS
Mastering and guiding the project process	Physics	11	3,27	5,815
	Chemistry	9	2,89	8,418
	Biology	14	4,21	4,300
	Mathematics	13	2,54	6,091
Planning, preparation and reflection	Physics	11	1,18	2,639
	Chemistry	9	,56	3,812
	Biology	14	2,43	2,901
	Mathematics	13	2,31	3,637
Application and evaluation	Physics	11	3,45	7,475
	Chemistry	9	-1,00	4,848
	Biology	14	2,93	3,125
	Mathematics	13	3,38	4,735
Feedback, alternative evaluation	Physics	11	1,45	1,695
	Chemistry	9	1,56	3,087
	Biology	14	,07	2,645
	Mathematics	13	,92	2,532
Group process and level learning	Physics	11	1,55	1,508
	Chemistry	9	1,00	2,236
	Biology	14	2,36	1,151
	Mathematics	13	1,00	2,000
Self-efficacy on project based teaching	Physics	11	10,91	11,131
	Chemistry	9	5,00	17,464
	Biology	14	12,00	10,258
	Mathematics	13	10,15	15,588

Table 5. *ANOVA results of teachers' self-efficacy related to project-based teaching according to branch variable*

Scale	Source of variance	Sum of squares	Sd	Mean square	F	p
Mastering and guiding the project process	Between groups	20,746	3	6,915	,187	,905
	Within groups	1590,659	43	36,992		
	Total	1611,404	46			
Planning, preparation and reflection	Between groups	26,880	3	8,960	,849	,475
	Within groups	454,056	43	10,559		
	Total	480,936	46			
Application and evaluation	Between groups	132,757	3	44,252	1,665	,189
	Within groups	1142,733	43	26,575		
	Total	1275,489	46			
Feedback, alternative evaluation	Between groups	16,858	3	5,619	,886	,456
	Within groups	272,801	43	6,344		
	Total	289,660	46			
Group process and level learning	Between groups	15,761	3	5,254	1,766	,168
	Within groups	127,942	43	2,975		
	Total	143,702	46			
Self-efficacy on project based teaching	Between groups	289,867	3	96,622	,522	,670
	Within groups	7962,601	43	185,177		
	Total	8252,468	46			

It was found that there was no significant difference in the scores of teachers from the self-efficacy scale (F (3,43) =. 522; p> .05) and the sub-dimensions of the scale according to the branch variable (Table 4, 5).

In the research, the independent t test results obtained from the question "Do the teachers' self-efficacy scale achievement scores of the project-based teaching show a significant difference according to the project status?" are presented in Table 6.

Table 6. *T test results of teachers' self-efficacy scale achievement scores according to project variable*

Scale	Making project status	N	$\overline{X}$	SS	Sd	T	p
Mastering and guiding the project process	Yes	32	3.19	4.895	45	-.149	.882
	No	15	3.47	7.873			
Planning, preparation and reflection	Yes	32	1.53	2.851	45	-.657	.515
	No	15	2.20	4.004			
Application and evaluation	Yes	32	2.53	5.685	45	.199	.843
	No	15	2.20	4.411			
Feedback, alternative evaluation	Yes	32	1.03	2.546	45	.460	.648
	No	15	.67	2.498			
Group process and level learning	Yes	32	1.69	1.512	45	.764	.453
	No	15	1.20	2.242			
Self-efficacy on project-based teaching	Yes	32	9.97	11.206	45	.056	.956
	No	15	9.73	17.645			

It was found that there was no significant difference in the achievement scores (t (45) =. 056; p> .05) and sub-dimensions of the scale which were obtained from the self-efficacy scale related to project-based teaching.

Teachers' views about the qualitative sub-problem of the research were coded by content analysis. For this purpose, three questions were asked to the teachers. The themes and codes of the teachers' answers were given with frequency and percentage values and also supported by sample teacher statements.

The first question asked in the qualitative aspect of the research is "What are the stages / stages that you think will push you the most when you make a project? Please explain the reasons". Table 7 presents the results of the content analysis of the most difficult stages of teachers' projects.

Table 7. *Content analysis results obtained from the teachers' views about the most difficult stages of the project*

Theme	Codes	f	%
Most difficulty stages of the project	Finding a project topic	25	27
	Finding project students	13	14
	Literature review	12	13
	Lack of infrastructure / budget	11	12
	Setting up experimental studies	10	11
	Using statistical metrics	7	7.5
	Lack of support from universities / administrators	7	7.5
	Time management	5	5
	Writing a project report	3	3

According to the codes obtained from the teachers' views about the most difficult stages of the project, finding the subject of the project was determined as the most challenging stage (f = 25, 27%). In addition, it was found that "writing a project report sahip had the least frequency among the most difficult stages of teachers (f = 3, 3%). Below are some of the statements that teachers use about the most difficult stages of the project.

T30: Determining the subject will be the most difficult step because it may be difficult to decide that the subject is suitable for the study and to produce a product that will contribute to the literature in the face of a vast literature (Finding a project subject).

T14: There are problems about being original and researchable during the determination of the subject (Finding the subject of the project).

T47: It is very difficult to find project students because it cannot allocate time-interest to project studies with the intensive curriculum (Finding project students).

T25: I think that literature search is a very comprehensive, time-consuming process that needs to be meticulous (Literature search).

P44: I do not have sufficient foreign language level and I find it very difficult to scan articles (Literature search).

T11: It is difficult and expensive to find and we have problems when we need an advanced laboratory (Lack of infrastructure / budget).

T46: My main problem is that we cannot carry out a laboratory-supported study because the school laboratory conditions are insufficient since we live in the district (Lack of infrastructure / budget).

T33: I think I am inadequate to conduct experiments. In the first place, I may not know how to separate the desired component from a substance and what methods I will use to analyze the properties of that component (setting up experimental studies).

T10: The experimental phase is the part that I think I will have the most difficulty. The reason is that I don't have enough experience on this subject (setting up experimental studies).

T36: Inability to use SPSS program in statistical measurements (Using statistical measurements).

T6: Difficulties experienced by the managers with little support for such issues (Lack of support from universities / administrators).

T37: Time management (Time management), as the time frame we can meet with the student is very limited.

T16: Unfortunately, time management and effective use of time are the things that affect me the most. Because, on the one hand, the teaching of biology curriculum, on the other hand, conducting procedural work in the school, limits me in terms of time to produce the work that I really want to do in the remaining time (Time management).

T39: Difficulty in reporting stages of project writing (Project report writing).

When the expressions that teachers stated were the most difficult stages during the project, it was found that teachers decided based on their individual experiences. In particular, they see the current field knowledge, setting up and conducting experiments, knowledge of foreign languages, mastery of statistical measurements and so on. According to the shortcomings, it is understood that they have difficulties in the stages of project design.

The second question asked in the qualitative aspect of the research is "*What are the stages / stages that you can easily / do you think you will do? Please explain the reasons.*" Table 8 shows the content analysis results obtained from the stages that teachers think they will easily do while they are doing the project.

Table 8. Content analysis results obtained from the views of teachers about the stages that they think they can easily do while project

Theme	Codes	F	%
	Writing a project report	16	21
	Literature review	11	14
	Finding a project topic	10	13
	All phases of the project	10	13
Not difficult stages perceived by teachers	Student selection and motivation	8	10
	All stages except subject	6	8
	Determining the method	6	8
	Time management	5	6.5
	Analysis and interpretation of data	5	6.5

When the codes obtained from the views of teachers regarding the stages they thought they would do easily, "writing a project report" took the first place (f = 16, 21%); "Time management" and "analysis and interpretation of data"appear to be the last (f = 5, 6.5%). Below are some of the expressions that teachers use for the stages that they think they can easily do when they make projects.

T24: Writing a report according to the project steps (Writing a project report).

T41: I do not think that there will be any difficulty in writing (Project report writing) after necessary studies and findings are reached.

T6: I have no difficulty in literature review. Because I continue to connect with the university and I do not attend the congresses related to my branch very often (Literature search).

T31: Finding original topics (Finding a project topic).

T29: With the information we have seen during this training process, I think that I will be able to fulfill all stages of the project (all phases of the project).

T33: I can convince the student more easily about making a project (Student selection and motivation).

T46: After finding the idea, I have no problems in terms of purpose, hypothesis, method and application (all stages except the subject).

T18: I think that I can easily do after the project is selected (all stages except the topic).

T22: The method part of the project can be done easily. Because I will be competent in the determination of the subject, introduction and other parts, the method will remain to be applied.

T1: Business timetable (Time management).

T5: I am good at analyzing, evaluating and interpreting the data obtained since it is good and practical in the measurement step (Data analysis and interpretation).

When the teacher sample expressions given above are examined, it is understood that teachers determine the stages that they think they can easily do according to their own infrastructure. However, the most striking feature is that some codes such as "finding a project subject" and "time management", which were found to be difficult in the previous question, are reused as the easiest step in this question. At this point, depending on the individual differences of teachers, a difficult stage for some may be an easy stage for others. When the source of these individual differences is examined, it is found that they have done master, doctorate and / or many projects (between 3-15) as the main factor.

The last question asked about the qualitative aspect of the research was "How did this training change your views on project preparation? Explain." Table 9 shows the results of content analysis on the effects of teachers' training on their ideas about project preparation.

Table 9. Results of content analysis on how teachers' views about project preparation changed with the training they participated

Theme	Codes	F	%
	I completed my deficiencies	25	33
	Increased self-confidence / motivation	17	22
	I realized it wasn't hard to do a project	9	12
	I noticed the importance of topic selection	7	9
Effects of project training	I can be a better guide	6	8
	I can easily edit statistical data	5	7
	I have learned how a quality project should be	4	5
	I can write report more easily	3	4

According to the codes related to the views of the teachers which changed as a result of the project consultancy training of trainers, the most common code was "I completed my deficiencies" (f = 25, 33%). It was found that the code "I can write the report more easily" was used the least (f = 3, 4%). Here are some examples of how teachers participating in project consultancy trainers express their changing views.

T21: It caused me to complete my missing information about the project preparation steps (My deficiencies are completed).

T35: I had past knowledge, but I thought that my knowledge was insufficient in many parts. With the training I received, I realized that the fog in my head was dispersed and that I saw more clearly in front of me (My deficiencies were completed).

T17: It was not difficult to create projects, so it increased our self-confidence (My self-confidence / motivation increased).

T5: He reminded me that I am only news about the paradigms that consist of the current understanding of science and that I deprive myself of scientific literacy through field monitoring. From now on I will have to review my learning needs (My self-confidence / motivation has increased).

T30: It seemed utopian to me to prepare a project, where and how to start was a question mark in my mind. But now my horizons widened, and I realized that many of the issues that I have enlarged in my eyes will actually be overcome by starting (I understand that it is not difficult to make a project).

T18: I understood better that authenticity is important in the project (I realized the importance of choosing a topic).

T7: I can provide more efficient and effective guidance to my students (I can be a better guide).

T10: My skills in measurement and evaluation have increased (I can edit statistical data more easily).

T46: I had some hesitations about some spelling steps. I found that the questions and problems I had with my friends and teachers were resolved (I can write the report more easily).

T22: I have seen seriously different aspects of project preparation. In this context, I have seen that both the teacher and the student will develop themselves seriously and open up different perspectives to the student (I can write the report more easily).

When the views of the teachers participating in the project consultancy training of trainers are examined, it is understood that they have completed their deficiencies in terms of information, their participation in stakeholder applications and their willingness to make projects. It is especially noteworthy that teachers have changed their negative viewpoints about project preparation in a positive way.

4. Discussion and conclusion

In this study, it was concluded that there was a statistically significant increase between the pre-test and post-test scores of the self-efficacy scale and sub-dimensions of the teachers who participated in the project consultancy training. Sağdıç, Çelik and Karamustafaoğlu (2017) examined the effect of academic counseling and qualitative research program on the ability of young researchers who continue their graduate education to prepare project proposals. It was determined that the competence of the participants in qualitative research

and writing scientific research proposal increased from medium level to good level. Önen, Mertoğlu, Saka, Gürdal (2010), it was revealed that a significant part of the teachers participating in the "Project for teacher training project" gained the competence to make projects as a result of the examination of the projects they prepared during in-service training. Aydın and Yel (2013) found that the course of project-based teaching increased the pre-service teachers' biology self-efficacy beliefs but this did not differ according to gender variable. Mahasneh and Alwan (2018) found that there was a significant difference in teacher self-efficacy levels as a result of project-based training based on teacher candidates. Nacaroğlu and Mutlu (2018) conducted a study in order to determine the self-efficacy of teachers based in a science and art center in order to determine the self-efficacy of the project-based teaching practices. These results support the findings of the increase in the self-efficacy of the teachers of this research for project-based teaching.

In the study, it was concluded that there was no significant difference in the scores of teachers' self-efficacy scale related to project-based teaching (posttest-pretest) scores and sub-dimensions of the scale according to the variables of gender, branch and project status. In parallel with these findings, according to the study of Nacaroğlu and Mutlu (2018), it was found that teachers' self-efficacy beliefs related to PBL application did not show significant differences in terms of gender. Aydın and Yel (2013) determined that the increasing biology self-efficacy beliefs of teacher trainees did not differ according to gender variable in the courses related to project-based teaching. Similarly, in the study conducted by Özden, Aydın, Erdem and Ekmekçi (2009), no significant difference was found in the views of science teachers regarding project-based science teaching according to their gender. In addition, Akbaş and Aydın (2019) found that pre-service teachers who are experienced or not have similar project perceptions. These results are similar to the findings of this study. The fact that teachers' self-efficacy belief levels do not differ according to the status of doing PBL can be explained by the fact that they have done master and doctorate.

According to the codes obtained from the teachers' views about the most difficult stages of the project, "finding the topic of the project, finding students, literature review, lack of infrastructure / budget, setting up experimental studies, using statistical measurements, lack of support from universities / administrators, time management, writing reports" were the most difficult stages. Similarly, Ülker Kurtuluş (2019) found that teachers had difficulty in literature review, statistical analysis and interpretation, finding a unique topic and cooperating with academicians due to lack of foreign language and lack of access to university databases. Asilsoy (2007) stated that teachers' concerns about project-based teaching are such as the fact that biology course has very little weekly hours, curriculum is intense, university exam preparation is in the foreground, school administration is not supported and the number of students is high. Dağ and Durdu (2012), in their study with 364 prospective teachers from different branches, found that there were problems in project-based learning process, task sharing and time management in group works. According to the results of Özden, Aydın, Erdem and Ekmekçi (2009), some of the teachers believe that the project may require a great amount of financial resources, that it will take a long time to complete the project, it will be difficult to find the subject of the project, and that the project is difficult to manage and execute. Similarly, negative views of teachers were identified as the lack of time, material and financial problems in the studies of Sülün, Ekiz and Sülün (2009) on project-based teaching.

Şahin (2012), who worked with science and technology teachers to determine the level of difficulty encountered in the implementation of the project-based learning approach, found a medium level difficulty. In their study, Kılıç and Özel (2015) found that teachers did not find the project-based learning method applicable due to problems such as crowded classrooms

and very intensive curriculum in schools. In parallel, as a result of the research conducted by Aydın, Bacanak and Çepni (2013), although science and technology teachers did various projects, they did not receive adequate training on this subject and they did not receive sufficient guidance and prepared projects, receiving feedback and project examples. In the study conducted by Çakan (2005), it was seen that there was a curriculum that teachers should train and the exams they had to do according to this program and that the schools were inadequate in terms of tools and equipment. Likewise, according to the findings obtained by Kaymakcı and Öztürk (2011); in the social studies education, it was concluded that the project studies could not be implemented properly due to the problems caused by the environmental conditions, the projects provided the most benefit in providing research skills, and the project subjects were mostly selected from the current events. Tsybulsky and Muchnik-Rozanov (2019) found that in their study with prospective teachers using the project-based learning method, candidates had difficulty in controlling students, managing time and feeling confident. It is seen as a turning point that prospective teachers overcome the difficulties encountered in the project-based teaching process in becoming more confident and responsible teachers.

When the codes obtained from the views of teachers regarding the stages that they thought they would do easily during the project were examined, it was concluded that "report writing, literature review, finding subject, all phases of the project, student selection and motivation, method determination, time management, data analysis and interpretation" were obtained. Similarly, in the study of Aksela and Haatainen (2018), according to the teachers evaluating the project-based learning approach; they found that students and teachers had improved motivation, cooperation and community perception, student-centered learning, and multidimensional perspective. In addition, teachers' time management, student-related problems, technical issues, resources, etc. It is determined that they have the view that they face difficulties. Dağ and Durdu (2012), on the other hand, in a study conducted with 364 prospective teachers from different branches, showed that during the project-based learning process, prospective teachers developed their skills to analyze and synthesize the resources and information they gathered within the scope of the project in a highly positive way. These results support the research findings.

In this research, according to the codes related to the views of the teachers, which changed as a result of the project consultancy training of trainers, "my deficiencies were completed, my self-confidence increased, I realized that it was not difficult to make a project, I realized the importance of choosing a topic" were obtained. In their study, Öztuna Kaplan and Diker Coşkun (2012) prepared and implemented an action plan for teachers to carry out the project work in a healthy way. As a result of the study, it was concluded that teachers were more successful in overcoming the problems experienced in managing the related process, teachers and parents were more effective in the guidance process on the students and the projects developed were more satisfactory both for the students and the teachers. Likewise, Habók and Nagy (2016), as a result of their work to determine teachers' views on project-based learning, teachers themselves reported motivating students, transmitting of moral values and development of stress-free atmosphere. Önen, Mertoğlu, Saka, Gürdal (2010) found that in their research on the teachers participating in the "Project for teacher training project", there was a positive increase in the knowledge of the teachers on the current issues and their misconceptions about project-based learning were eliminated. Asilsoy (2007) developed a short-term in-service training (HIE) course program aimed at gaining the professional knowledge and skills required for biology teachers to use the project-based learning approach in their courses, and applied its effectiveness. From the data obtained, it was understood that the applied HIE course was effective in increasing the knowledge, skills and perspectives of

the participant biology teachers about the project based learning approach (PBL). At the end of the course, it was found out that the participant teachers believed in the importance of PBL and were willing to use this approach in their courses. Karakaya, Uzel, Yılmaz and Gül (2019) stated that biology teacher candidates contributed to project-based learning by doing-living learning, multi-faceted thinking and development of problem solving skills.

5. Recommendations

The recommendations based on the results of the research are presented below.

- It is important to increase the opportunities for both the completion of the deficiencies and the experience with the project development trainings that the teachers will attend at regular intervals.

- Monitoring the teachers participating in the project development training, finding the subject of the projects developed, planning and time management, determination of research method, analysis and evaluation and so on. It is necessary to determine the teacher self-efficacy in the stages of updating the programs of the new in-service trainings.

- Postgraduate training of teachers will increase their self-efficacy in project-based teaching since they will improve their scientific process skills. Therefore, more support should be provided for teachers to carry out graduate education.

- It was found out that teachers' level of knowledge of foreign language had difficulty in literature review from the stages of project development. For this reason, it is important that teachers acquire foreign language skills in their undergraduate education.

- It may be beneficial for teachers from different disciplines to have cooperative educational experiences to support cooperative working culture in interdisciplinary studies.

- The development of scientific process skills can be supported by ensuring that teachers are involved in the scientific research carried out in universities, technocities and research institutions at certain times.

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Appendix 1

PROJECT CONSULTANCY TRAINER TRAINING PROGRAM				
Course Hours	**1st Day** **10.03.2019**	**2nd Day** **11.03.2019**	**3rd Day** **12.03.2019**	**4th Day** **13.03.2019**
9.00 – 10.30	**OPENING, PRESENTATIONS, PRETEST**	**Nature of Science**	**Project Subject Research I** **Advisors in Biology, Physics, Chemistry and Mathematics**	**Preparation of Project Presentations I** **Advisors in Biology, Physics, Chemistry and Mathematics**
Course hour: 2 (Block)		*The nature of science and its effects on scientific studies will be explained.*	*Project studies will be carried out.*	*Preparation of Powerpoint Presentations*
10.45 – 12.15	**Project Management**	**Statistics I**	**Project Subject Research II** **Advisors in Biology, Physics, Chemistry and Mathematics**	**Preparation of Project Presentations II** **Advisors in Biology, Physics, Chemistry and Mathematics**
Course hour: 2 (Block)	*Project types, project subject determination, project team building, project management time, cost, procurement and risk factors will be discussed.*	*Basic concepts in statistics and frequently used methods in researches will be applied.*	*Project Subject Research*	*Preparation of Powerpoint Presentations*
12.15 – 13.30	LUNCH			
13.30 – 15.00	**Access to Information on the Internet**	**Statistics II**	**Project Proposal Writing I** **Advisors in Biology, Physics, Chemistry and Mathematics**	**Submitting Project Proposals** **Advisors in Biology, Physics, Chemistry and Mathematics**
Course hour: 2 (Block)	*Literature search in scientific research, practical ways and the use of ULAKBIM will be presented in scientific research.*	*Basic concepts in statistics and methods used in biological research will be explained.*	*Project proposal writing activities will be done.*	*Presenting the project proposals*

	Ethics of Scientific Research	Reporting Research Results	Project Proposal Writing II Advisors in Biology, Physics, Chemistry and Mathematics	POSTTEST Test Time: 50 minutes 15: 15-16: 10
15.15 – 16.45				
Course hour: 2 (Block)	*Ethical violations of ethical rules will be discussed in scientific studies.*	*The reporting process of the findings obtained from scientific research will be explained.*	*Project proposal writing activities will be done.*	CLOSING
Total: 30 Course hours	8 Courses	8 Courses	7 Courses	Courses